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大学共同利用機関法人人間文化研究機構
国立国語研究所
理論・構造研究系　領域指定型プロジェクト

Linguistic Variations within the Confines of Language Faculty: Studies in the Acquisition of Japanese and Parametric Syntax

言語の普遍性及び多様性を司る生得的制約：日本語獲得に基づく実証研究

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PREFACE

This project aims for collaborative research on the adult syntax and first language acquisition of Japanese from the perspective of Generative Grammar advanced by Noam Chomsky. The unifying theme is the issues concerning the initial and intermediate states of grammatical knowledge. The acquisition processes of knowledge on syntactic structures, syntactic operations and Case marking, among others, are examined to provide an explanation based on the properties of Universal Grammar. Although the project deals with Japanese, it is comparative in orientation, as empirical evidence from the syntax and acquisition of other languages is considered in the analysis.

We are pleased to publish the report of the research project entitled "Linguistic Variations within the Confines of Language Faculty: Studies in the Acquisition of Japanese and Parametric Syntax". This research report consists of ten papers that members of the project wrote on the theme during the grant period. Some of them initially appeared in *Nanzan Linguistics* because we pursued our project of NINJAL in close collaboration with the Center for Linguistics at Nanzan University and in conjunction with its comparative syntax project. Some were reprinted from proceedings of international conferences and journals. All of them present research that was discussed extensively since its inception in our project meetings. Those project meetings, which took place at NINJAL, Nanzan University and Kobe University, served as indispensable forums to exchange ideas, not only within the project but also with the larger research community, and to develop our research substantially.

I would like to take this opportunity to thank the faculty and staff members at NINAL, without whose help this project would have been impossible, in particular, Taro Kageyama, Haruo Kubozono and Junko Yoneda. Sincere thanks go to the researchers, Mamoru Saito, Koji Sugisaki, Hideki Kishimoto, Tomomi Nakatani (2010-2013), Daiko Takahashi (2011-2013), Yoichi Miyamoto, Yuji Takano, Hiroaki Tada, Tomo Fujii and Kensuke Takita (2013). I would also like to acknowledge that the project not only provided practical training to our graduate students but also benefitted greatly from their help.

Keiko Murasugi

Chapter 1: Ellipsis

(削除操作とその獲得)

ARGUMENT ELLIPSIS IN JAPANESE AND MALAYALAM *

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In recent years, evidence has been mounting for the hypothesis that null arguments in several languages represented most notably by Japanese are derived by ellipsis rather than involve empty pronouns (see Kim 1999, Oku 1998, Saito 2004, and Takahashi 2008a, among others). This article subjects Malayalam, a null argument language like Japanese, to close scrutiny, and considers whether its null arguments can arise through ellipsis, pointing out similarities and differences between the two languages in terms of the availability of elliptic null elements. It will turn out that while Malayalam largely behaves like Japanese, it exhibits a few very intriguing divergences, posing a new explicandum to the cross-linguistic study of ellipsis.

1. Argument Ellipsis in Japanese

Before considering data in Malayalam, let us take a brief look at the examples that have led to the ellipsis analysis of null arguments (or just the argument ellipsis analysis) in Japanese. Cases like the following are used to show the possibility of object ellipsis in the language (*e* stands for a null element):

(1) a. Taro-wa zibun-no hahaoya-o aisiteiru.
Taro-TOP self-gen mother-ACC love

'Taro loves his mother.'

* I would like to express my gratitude to Mamoru Saito for giving me the opportunity to conduct the research that has led to this article, and to R. Amritavalli, Rahul Balusu, K. A. Jayaseelan, and B. R. Srivatsa for providing me with valuable information about Dravidian languages. Part of the material reported here was presented at the Center for Linguistics, Nanzan University in March, 2011, and I am grateful to the audience for their comments and questions. If any inadequacies remain, I am solely responsible for them. This research has been supported in part by the International Collaborative Research Project on Comparative Syntax and Language Acquisition at the Center for Linguistics, Nanzan University and by JSPS Grant-in-Aid for Scientific Research (C) (Grant Number 21520392). The following abbreviations are used here: ACC for accusative case; COMP for complementizer; EMPH for the emphatic marker; GEN for genitive case; LOC for the locative marker; MSG for masculine singular; NEG for negation; NMNL for the nominalizer; NOM for nominative case; PERF for perfective; Q for the question marker; REFL for the reflexive morpheme; and TOP for the topic marker.

Nanzan Linguistics 9, 173–192
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b. Hana-wa *e* nikundeiru.
Hana-top hate

'lit. Hana hates *e*.'

c. Hana-wa kanozyo-o nikundeiru.
Hana-TOP her-ACC hate

'Hana hates her.'

As noted by Otani and Whitman (1991), null objects in Japanese permit sloppy interpretation. Thus, if anteceded by (1a), the null object construction in (1b) is ambiguous between the strict reading that Hana hates Taro's mother and the sloppy reading that Hana hates her own mother. The availability of the second construal is particularly important. The sentence in (1c) is minimally different from (1b) in containing a pronoun in the object position. If it is used in place of (1b) in the same context, it only has the strict reading. If the null object in (1b) were a pronoun, the example should be expected to be limited to the strict interpretation just like (1c). To account for the sloppy construal in (1b), proponents of the ellipsis analysis assume that the sentence so construed involves ellipsis, as shown below (strike-through indicates ellipsis):

(2) Hana-wa ~~zibun-no hahaoya-o~~ nikundeiru
Hana-TOP self-GEN mother-ACC hate

'lit. Hana hates ~~self's mother~~'

It is assumed here that the sentence underlyingly has a full-fledged object, which is elided under identity with the object in the antecedent sentence to yield the null object construction.[1]

Null subjects behave similarly, as observed by Oku (1998). Consider the following examples:

(3) a. Taro-wa [$_{CP}$ zibun-no hahaoya-ga eigo-o hanasu to] omotteiru.
Taro-TOP self-GEN mother-NOM English-ACC speak that think

'Taro thinks that his mother speaks English.'

b. Hana-wa [$_{CP}$ *e* furansugo-o hanasu to] omotteiru.
Hana-TOP French-ACC speak that think

'lit. Hana thinks that *e* speaks French.'

The subject of the embedded clause in (3b) is null. When (3b) is preceded by (3a), it is ambiguous between the strict and the sloppy interpretation. The possibility of the latter construal has been taken by the advocates of the ellipsis analysis to be evidence that the null

[1] See Takahashi (2008b) and Takita (2011) for further arguments in favor of the ellipsis analysis of null objects.

subject is derived by ellipsis.

The sort of ellipsis considered here is not limited to nominal arguments. As Takahashi (2008a) observes, for instance, selected PPs are amenable to ellipsis.[2]

(4) a. Taro to Hana-ga [$_{PP}$ otagai kara] tegami-o moratta.
Taro and Hana-NOM each.other from letter-ACC received

'Taro and Hana received letters from each other.'

b. Ken to Yumi-wa e_{PP} meeru-o moratta.
Ken and Yumi-TOP e-mail-ACC received

'lit. Ken and Yumi received e-mails.'

Though the source PP is implicit in (4b), it is understood and significantly yields the sloppy interpretation that Ken and Yumi received e-mails from each other.

The term *argument ellipsis* is so coined in part to highlight the fact, first pointed out by Oku (1998), that ellipsis cannot apply to adjuncts. This is illustrated by the following data:

(5) a. Taro-wa subayaku sono mondai-o toita.
Taro-TOP quickly that problem-ACC solved

'Taro solved that problem quickly.'

b. Hana-wa kono mondai-o tokanakatta.
Hana-TOP this problem-ACC not.solved

'Hana did not solve this problem.'

c. Hana-wa subayaku kono mondai-o tokanakatta.
Hana-TOP quickly this problem-ACC not.solved

'Hana did not solve this problem quickly.'

d. Hana-wa tokanakatta.
Hana-TOP not.solved

'lit. Hana did not solve.'

e. Hana-wa subayaku sono mondai-o tokanakatta.
Hana-TOP quickly that problem-ACC not.solved

'Hana did not solve that problem quickly.'

The sentence in (5a) contains the manner adverb *subayaku* 'quickly' and is intended to serve

[2] Takahashi (2008a) also notes that selected CPs can be elided.

as the antecedent for (5b), where the adverb is missing. The fact here is that while (5b) means that Hana did not solve this problem, it does not mean that Hana did not solve this problem quickly: namely, the adverb is not understood in the interpretation of (5b). If it were, the sentence could be construed in the same way as (5c), where the adverb is explicitly expressed. Clearly, (5b) lacks the reading that Hana solved this problem, but not in a quick manner, which is available in (5c). Therefore, (5b) cannot be analyzed as below:

(6) Hana-wa ~~subayaku~~ kono mondai-o tokanakatta
Hana-TOP quickly this problem-ACC not.solved

'Hana did not solve this problem ~~quickly~~'

Here the adverb is intended to be present in the sentence but elided under identity with the adverb in (5a). If (5b) could be analyzed as in (6), it should yield the same interpretation as (5c). Because (5b) cannot be interpreted like (5c), the analysis in (6) should not be allowed, and this follows if adjuncts cannot undergo ellipsis.[3]

The situation does not change even if the object is suppressed from (5b), as in (5d). If (5d) is anteceded by (5a), it can mean that Hana did not solve that problem, but crucially, it cannot mean that Hana did not solve that problem quickly. That is, (5d) cannot be interpreted like (5e), where the adverb as well as the object is explicitly repeated. The fact that the adverb is not understood in (5d) reinforces the assumption that adjuncts are not subject to ellipsis.[4]

The argument ellipsis analysis gives rise to a very important issue in the cross-linguistic research on null arguments. Once it is established that Japanese allows elliptic arguments, an immediate question to be asked is whether null arguments in other languages can be analyzed in the same way. In this regard, Oku (1998) considers the following data from Spanish, observing that null subjects in the language are not amenable to the ellipsis analysis:

(7) a. María cree que su propuesta será aceptada.
Maria believes that her proposal will-be accepted

'Maria believes that her proposal will be accepted.'

b. Juan también cree que *e* será aceptada.
Juan also believes that it will-be accepted

'Juan also believes that it will be accepted.'

[3] As to why adjuncts cannot be elided, see Oku (1998) and Takahashi (forthcoming).

[4] Of course, adjuncts can be elided if they are contained in constituents that are eligible for ellipsis. For example, in *John solved the problem quickly, but Mary didn't*, the second sentence can mean that Mary didn't solve the problem quickly. In this case, the adverb is elided along with the other VP-internal elements by VP-ellipsis. What is argued in the text is that adjuncts themselves cannot undergo ellipsis.

Preceded by (7a), (7b) can mean that Juan believes that María's proposal will be accepted, but cannot have the reading that Juan believes that Juan's proposal will be accepted. Namely, the null subject in (7b) is not interpreted sloppily. This is in accordance with the standard view in the literature that null subjects in Spanish are empty pronouns: as noted above with regard to (1c), pronouns usually do not give rise to sloppy interpretation. If the null subject in (7b) were elliptic, it should yield the sloppy reading.

One should wonder what prevents the null subject in (7b) from being derived by ellipsis. Following Saito (2007) and Takahashi (forthcoming), I assume that agreement plays an important role in regulating the occurrence of elliptic arguments. Let us consider the following schematic representation of argument ellipsis:

(8) a. ... $F_{1\{\varphi\}}$ ... $DP_{\{\varphi, \text{Case}\}}$ ...

b. ... $F_{1\{\varphi\}}$ ... $DP_{\{\varphi, \sout{\text{Case}}\}}$ ...

c. ... $F_{2\{\varphi\}}$ ... __ ...

d. *... $F_{2\{\varphi\}}$ ... $DP_{\{\varphi, \sout{\textit{Case}}\}}$ ...

The derivation of the antecedent sentence is illustrated in (8a-b), where an argument, indicated as DP, is associated with a functional head (F_1): if DP is a subject, F_1 is T; if DP is an object, F_1 is *v*. Let us assume Chomsky's (2000) theory of agreement here. Being uninterpretable, the φ-features of F_1 must be erased by entering into an agreement relation with the φ-features of DP. The Case-feature of DP plays a crucial role here, making DP active or visible for the operation. Once the agreement relation is established, the φ-features of F_1 and the Case-feature of DP, both uninterpretable, are erased as shown in (8b). Suppose now that it is followed by the elliptic sentence, the derivation of which is given in (8c-d). Saito (2007) assumes with Williams (1977) and others that ellipsis involves copying. Thus, the elliptic sentence starts off with an unfilled argument position, as shown by the underline in (8c), and it is subsequently (namely, in the covert component) filled with the argument copied from (8b), resulting in (8d). Now, a problem arises in (8d): the Case-feature of the copied DP is already erased in the antecedent sentence prior to copying, and hence it is not eligible to have an agreement relation with F_2. Consequently, the φ-features of F_2 remain to be erased, causing the derivation to crash.

This theory predicts that argument ellipsis should not be allowed in languages where functional heads such as T and *v* agree with arguments. This is borne out in Spanish, as noted above. It has (rich) agreement between subjects and T, and null subjects there cannot be elliptic. On the other hand, agreement is completely absent in Japanese. If this is taken to indicate that the relevant functional heads simply lack φ-features in the language, the sort of derivational crash noted in (8) should never happen there, so that argument ellipsis can be

permitted rather freely.[5]

Bearing these in mind, let us turn our attention to Malayalam in the next section to determine whether its null arguments can arise through ellipsis or not.

2. Data in Malayalam

First of all, let us confirm that Malayalam is a language like Japanese where arguments such as subjects and objects can drop in finite clauses (the Malayalam data in what follows are supplied by K. A. Jayaseelan (personal communication) unless indicated otherwise).

(9) a. John ewiDe (pooyi)?
John where (went)

'Where did John go?'

b. *e* wiiTT-il-eek'k'ə pooyi.
house-LOC-DAT went

'He went home.'

(10) a. Mary entinə aaNə karayunn-atə?
Mary why is cry-NMNL

'Why is it that Mary is crying?'

b. John *e* s'akaar'icc-atə kaaraNam.
John scold-NMNL because

'Because John scolded her.'

The sentences in (9b) and (10b) are intended to be replies to the questions in (9a) and (10a), respectively. In (9b), the subject is unexpressed, but it can be understood to refer to the subject in (9a). In (10b), the object is suppressed though it can be easily identified as referring to the subject in (10a).

2.1. Object Ellipsis in Malayalam

Let us consider whether null arguments can be elliptic in Malayalam. Let us start with the following examples with null objects:

(11) a. John tan-te amma-ye sneehik'k'unnu.
John self-GEN mother-ACC love

'John loves his mother.'

[5] See Saito (2007) and Takahashi (forthcoming) for discussions related to argument ellipsis and agreement, and Kuroda (1988) and Fukui (1988) for arguments that Japanese lacks agreement.

b. Bill-um *e* sneehik'k'unnu.
Bill-also love

'lit. Bill loves *e*, too.'

The antecedent sentence in (11a) contains a reflexive in the object and it refers to the subject *John* in the same sentence. (11b) is a null object construction. If preceded by (11a), it can mean either that Bill loves John's mother or that Bill loves his own mother. That is, the null object is ambiguous between the strict and the sloppy interpretation. The possibility of the latter construal indicates that the null object can arise through ellipsis.

This can be buttressed by the following data:

(12) a. aarə aaNə tann-e tanne wimars'icc-atə?
who is self-ACC EMPH criticized-NMNL

'Who is it that criticized himself?'

b. John *e* wimars'iccu
John criticized

'lit. John criticized *e*.'

The sentence in (12a) is a *wh*-question, where the reflexive itself is the object of the verb corresponding to *criticized*. As a reply to (12a), (12b) is used and contains a null object. In this context, (12b) most naturally means that John criticized himself. Note that this fact clearly indicates that argument ellipsis is operative here. The argument ellipsis analysis deals with the data as follows (just for convenience, the Malayalam data are illustrated with English words and word order):

(13) a. Who is it that criticized self?

b. John criticized ~~self~~.

Since the second sentence contains the reflexive in the object position, its actual interpretation is straightforwardly captured. If, on the other hand, null arguments were restricted to empty pronouns in the language, the data would have to be analyzed as below:

(14) a. Who is it that criticized self?

b. *John$_1$ criticized *pro*$_1$

In (14b), the null object is analyzed as an empty pronoun, which should be coindexed with the subject to produce the interpretation of the sentence. But the representation should violate Condition (B) of the Binding Theory (Chomsky 1981) just like **John*$_1$ *loves him*$_1$, and would be ruled out erroneously. This consideration, therefore, provides a rather strong argument for

the availability of argument ellipsis for null objects in Malayalam.[6]

Note also that the sloppy interpretation in question can be obtained even when antecedent and elliptic sentences have different verbs, as below:

(15) a. John tan-te bhaarya-ye sneehik'k'unnu.
John self-GEN wife-ACC love

'John loves his wife.'

b. pakSe Bill *e* weRukk'unnu.
but Bill hate

'lit. But Bill hates *e*.'

Whereas the antecedent sentence in (15a) has the verb corresponding to *love*, the null object sentence in (15b) has the verb corresponding to *hate*. (15b) can have the sloppy reading that Bill hates his own wife, in addition to the strict reading that Bill hates John's wife. The possibility of the first construal indicates that the object can be elliptic.

The observation above is important in showing that elliptic null objects in Malayalam

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[6] Kannada, another Dravidian language that allows null arguments, displays an interesting set of data. The following examples are supplied by R. Amritavalli (personal communication):

(i) a. John tann-a heNDati-yannu priitisuttaane.
John self-GEN wife-ACC loves

'John loves his wife.'

b. Bill-uu *e* priitisuttanne.
Bill-also loves

'lit. Bill loves *e*, too.'

(ii) a. yaaru tann-ann-ee baidu-koND-anu?
who self-ACC-EMPH cursed-REFL-3MSG

'Who cursed himself?'

b. *John *e* baidu-koND-anu.
John cursed-REFL-3MSG

'lit. John cursed *e*.'

The examples in (i) are comparable to the Malayalam data in (11). Anteceded by (ia), (ib) can have the sloppy reading. This shows that Kannada allows object ellipsis, too. There is a complication, however, if we consider the Kannada counterpart of (12), which is given in (ii). The null object construction in (iib) is just ungrammatical, in contrast with (12b). Notice that unlike Malayalam, Kannada must have the reflexive morpheme on the verb if the reflexive pronoun appears in the object position, as shown in (iia). I suspect that this morphology is a kind of object agreement, which blocks ellipsis of the object in (iib).

can arise through argument ellipsis (or ellipsis of objects) rather than through so-called V-stranding VP-ellipsis (Goldberg 2005, McCloskey 1991, and Otani and Whitman 1991). Based on her detailed analysis of the null object construction in Hebrew, Goldberg (2005) contends that V-stranding VP-ellipsis is operative in the language. Consider the following examples in Hebrew, cited from Goldberg 2005:

(16) a. (Ha'im) Miryam hevi'a et Dvora la-xanut?
Q Miryam brought ACC Dvora to.the-store

'(Did) Miryam bring Dvora to the store?'

b. Ziroo, hi hevi'a.
yes she brought

'lit. Yes, she brought.'

c. *Ziroo, hi lakxa.
yes she took

'lit. Yes, she took.'

d. *Lo, hi ŠALXA!
no she sent

'lit. No, she SENT!'

The question in (16a) serves as the antecedent for each of the sentences in (16b-d). Although truncated, (16b) can mean that she brought Dvora to the store. Goldberg argues that it involves VP-ellipsis with concomitant V-raising, as shown below (English words are used just for expository purposes):

(17) [$_{TP}$ she [$_{T'}$ [$_{T}$ brought-T] ~~[$_{VP}$ t_{V} Dvora to the store]~~]]

The main verb undergoes movement to T, and subsequently ellipsis applies to elide VP, which contains the verbal trace (or copy), the object, and the locative PP. The ungrammaticality of (16c-d) indicates that the kind of VP-ellipsis illustrated in (17) cannot take place there. Goldberg argues that V-stranding VP-ellipsis (or VP-ellipsis in general) is constrained by the requirement that the antecedent clause and the elliptic clause share the same verb. Since the verbs in (16c-d) are different from the verb in (16a), VP-ellipsis cannot apply to the sentences (see Goldberg 2005 for details).

Returning to (15), we notice that the antecedent and the elliptic sentence have different verbs. If the same verb requirement is a universal constraint, (15b) should not be able to involve VP-ellipsis. Then, the elliptic null object there must arise through ellipsis of the object itself, namely through argument ellipsis.

2.2. Subject Ellipsis in Malayalam

Let us go on to examine whether null subjects can be elliptic in Malayalam. The following are relevant data:

(18) a. John paRaññu [tan-te kuTTi English samsaarik'k'um ennə].
John said self-GEN child English will.speak COMP

'John said that his child would speak English.'

b. Mary paRaññu [*e* French samsaarik'k'um ennə].
Mary said French will.speak COMP

'lit. Mary said that *e* would speak French.'

(19) a. John paRaññu [tan-te makan Microsoft-il jooli ceyy'unnu ennə]
John said self-GEN son Microsoft-in job do COMP

'John said that his son was working at Microsoft.'

b. Bill paRaññu [*e* IBM-il jooli ceyy'unnu ennə]
Bill said IBM-in job do COMP

'lit. Bill said that *e* was working at IBM.'

The examples in (18a) and (19a) are intended to serve as the antecedents for (18b) and (19b), respectively. While the embedded subjects contain the reflexive in the a-examples, the embedded subjects are null in the b-examples. The fact here is that (18b) and (19b) can be interpreted neither strictly nor sloppily. The only interpretations available are the ones where the null embedded subjects refer to the matrix subjects: thus, (18b) and (19b) only mean that Mary said that she (namely, Mary) would speak French and that Bill said that he (namely, Bill) was working at IBM, respectively. In particular, the impossibility of the sloppy readings indicates that null subjects cannot arise through ellipsis in Malayalam.[7]

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[7] The absence of the strict readings in (18) and (19) also demands an explanation. It seems that null subjects in Malayalam are quite different from their Japanese counterparts (see (3)) and are rather similar to null subjects in Chinese and Portuguese. For instance, consider the following example in Chinese, cited from Huang (1984):

(i) Zhangsan shuo [*e* bu renshi Lisi].
Zhangsan say not know Lisi

'lit. Zhangsan said that *e* did not know Lisi.'

The most natural interpretation of this example is the one where the null embedded subject is bound by the matrix subject. (i) can be contrasted with the following comparable example in Japanese:

A word of caution is necessary here. The following data are minimally different from (18) in the form of the embedded subject in the antecedent sentence, but appear to allow the sloppy reading for (20b):

(20) a. John paRaññu [taan English samsaarik'k'um ennə]
John said self English will.speak COMP

'John said that he would speak English.'

b. Mary paRaññu [*e* French samsaarik'k'um ennə]
Mary said French will.speak COMP

'lit. Mary said that *e* would speak French.'

While (20a) means that John said that he (namely, John) would speak English, (20b) means that Mary said that she (namely, Mary) would speak French. The sloppy reading here is merely apparent because it can arise from binding of the null embedded subject by the matrix subject and can be obtained even when (20b) is used out of the blue without an antecedent like (20a) (see note 7). Therefore, one should not be misled by cases like (20).

We have arrived at the generalization that null subjects in Malayalam do not yield sloppy readings. This shows that subjects cannot be subject to argument ellipsis in the language. Why is Malayalam different from Japanese in this respect? Exactly like Japanese, Malayalam lacks agreement between arguments and functional heads: that is, it lacks agreement between subjects/objects and predicates (see Asher and Kumari 1997). Then it would be expected to behave like Japanese, allowing ellipsis of subjects as well as objects.

Now I argue that Malayalam does possess agreement, albeit abstract, between subjects and T. In Takahashi forthcoming, I point out that Chinese disallows subject ellipsis, and account for it by assuming that the language has agreement, though covert, between subjects and T. The following are relevant data:

(21) a. Zhangsan shuo [ziji de haizi xihuan Xiaohong].
Zhangsan say self of child like Xiaohong

'Zhangsan said his child liked Xiaohong.'

(ii) Taro-ga [*e* Hana-o sitteiru to] itta.
Taro-NOM Hana-ACC know that said

'lit. Taro said that *e* knew Hana.'

Although the reading where the null embedded subject refers to the matrix subject is possible, another interpretation where it refers to someone else is equally permissible, albeit depending on the presence of a preceding context providing such a referent. Null subjects in Malayalam may be analyzed in the same way as their Chinese counterparts à la Huang (1984) (namely, as locally controlled *pro*s, the exact identification of which is open to debate).

b. Lisi shuo [*e* xihuan Xiaoli].
Lisi say like Xiaoli

'lit. Lisi said *e* liked Xiaoli.'

Anteceded by (21a), (21b) does not permit the sloppy interpretation that Lisi said that Lisi's child liked Xiaoli. This shows that subjects cannot be elided in Chinese.

Following Miyagawa (2010), Takahashi (forthcoming) regards the presence of the so-called blocking effect on long-distance anaphor binding as an indication of subject agreement in the language. It is known that the reflexive *ziji* 'self' can be bound long-distance, as shown below (the examples in (22) and (23) are taken from Miyagawa 2010, where they are attributed to Pan 2000):

(22) Zhangsan zhidao [Lisi dui ziji mei xinxin].
Zhangsan know Lisi to self not confidence

'lit. Zhangsan knows Lisi has no confidence in self.'

The reflexive in the embedded clause may be bound either by the embedded subject *Lisi* or by the matrix subject *Zhangsan*. The long-distance construal, however, is blocked if the intervening subject is changed to the first person or second person pronoun, as below:

(23) Zhangsan juede [wo/ni dui ziji mei xinxin].
Zhangsan think I/you to self not confidence

'lit. Zhangsan thinks I/you have no confidence in self.'

Here the reflexive is only bound by the embedded subject. This fact is understood as follows: suppose that *ziji* undergoes LF movement to T, where it establishes a local relation with its antecedent in the specifier position of TP (Battistella 1989, Cole, Hermon, and Sung 1990, and so on), and that when remotely bound, it undergoes successive cyclic T-to-T movement. Suppose also that the reflexive receives the value of the person feature from the T head that it attaches to first. When (22) has the long-distance interpretation, for example, *ziji* first moves to the embedded T, which assigns it the value [3rd person], and then to the matrix T to have a local relation with the intended antecedent. The person values of the reflexive and its final landing site (the matrix T) match, both being [3rd]. On the other hand, if the reflexive were to be bound by the matrix subject in (23), it would move first to the embedded T to receive the value [1st (or 2nd)] before landing at the matrix T. In this case, the person value of the reflexive, which is [1st] or [2nd], would not match that of the matrix T, which is [3rd], so that the resulting representation should be ruled out. Note that this explanation presupposes that Chinese possesses agreement between subjects and T so that T can take on the φ-feature value of the subjects.

In contrast, Japanese does not exhibit the blocking effect in question. Miyagawa (2010) points out an example of the following sort, noting that there is no blocking effect:

(24) Taro-wa [boku/kimi-ga zibun-no syasin-o totta to] itta.
Taro-TOP I/you-NOM self-GEN picture-ACC took that] said

'lit. Taro said that I/you took self's picture.'

Here, the reflexive *zibun* may take the matrix subject *Taro* as its antecedent though the intervening subject is the first or second person pronoun. This is consistent with the assumption that agreement between subjects and T is absent in Japanese and hence that subjects can undergo argument ellipsis there.[8]

Returning to Malayalam, we expect it to exhibit the blocking effect just like Chinese. This is indeed borne out, as shown by the following examples:

(25) a. John wicaarik'k'unnu [Bill tann-e weRukk'unnu ennə].
John think Bill self-ACC hate comp

'lit. John thinks that Bill hates self.'

b. *John wicaarik'k'unnu [ñaan/nii tann-e weRukk'unnu ennə]
John think I/you self-ACC hate COMP

'lit. John thinks that I/you hate self.'

In (25a), the reflexive in the embedded object position can take the matrix subject as its antecedent. This relation is blocked in (25b), where the embedded subject is changed from *Bill* to the first or second person pronoun (see Jayaseelan 1997 for more on this topic). In this respect, Malayalam is grouped with Chinese, rather than with Japanese.

Further considerations that suggest the presence of (abstract) subject-T agreement in Malayalam come from the fact that Dravidian languages usually exhibit subject-T agreement. As shown below, Kannada, Tamil, and Telugu all possess visible agreement between subjects and predicates:

(26) Kannada

a. nannu mathanadutthne
I speak

b. naavu mathanaduthheve
we speak

c. avanu mathanadutthaiddhane
he speaks

[8] In that case, the reflexive in Japanese must be licensed in a different way from its Chinese counterpart. At least, its licensing should not involve φ-feature valuation.

(27) Tamil

a. naan pesukiren
I speak

b. naangal pesukirom
we speak

c. avan pesukiraan
he speaks

(28) Telugu

a. nenu matladutaanu
I speak

b. memu matladutamu
we speak

c. atanu matladutadu
he speaks

Although Malayalam does not exhibit agreement superficially (Asher and Kumari 1997), we may assume that the language still retains it in an abstract way, its presence being detectable with such syntactic phenomena as the blocking effect on reflexive binding and the impossibility of subject ellipsis.

To summarize, I have shown in this section that Malayalam is similar to Japanese in permitting ellipsis of objects but is different from it in disallowing ellipsis of subjects. This puts Malayalam in the same group as Chinese and Turkish, which also exhibit the subject-object asymmetry with respect to argument ellipsis (see Takahashi forthcoming).

3. Ellipsis of Adjuncts in Malayalam

If argument ellipsis is responsible for elliptic null objects in Malayalam, adjuncts should not be affected because argument ellipsis by definition is limited to arguments. Here we have a very intriguing array of facts. Let us begin with the following data:

(29) a. John nannaayi kaaRə kazhuki.
John well car washed

‘John washed a car well.’

b. Bill *e* kazhuki-(y)illa.
Bill washed-NEG

‘lit. Bill did not wash *e*.’

(30) a. nii innale kaaTT-il aana-ye kaNDu-oo?
you yesterday forest-LOC elephant-ACC saw-q

'Did you see elephants yesterday in the forest?'

b. *pro* *e* kaNDu.
I saw

'lit. I saw *e*.'

Anteceded by (29a), (29b) can mean that Bill did not wash a car well. Similarly, if (30b) is used after (30a), its interpretation can include the temporal and the locative adjunct (that is, the sentence can mean that *I saw elephants in the forest yesterday*). This is to be contrasted with the fact in Japanese observed in (5), where the adjunct is not understood in the interpretation of the sentence comparable to (29b).

Note that the objects as well as the adjuncts are null in (29b) and (30b). Let us examine whether ellipsis of adjuncts is contingent on ellipsis of objects or not. Relevant data are provided below:

(31) a. ñaan kaalə soopp-iTTə kazhuki.
I feet soap-using washed

'I washed my feet with soap.'

b. (pakSe) awan *e* kazhuki-(y)illa.
(but) he washed-NEG

'lit. (But) he did not wash *e*.'

c. awan cevi kazhuki-(y)illa.
he ear washed-NEG

'He did not wash his ears.'

The sentence in (31a) is intended to antecede (31b-c). (31b) is a null object construction, and just as in (29b) and (30b), the adjunct in (31a) (the one corresponding to *with soap*) can be understood in its interpretation: that is, it can mean that he did not wash his feet with soap. Of special importance is the interpretation of (31c), where the object is overtly expressed. The sentence means that he did not wash his ears, but crucially does not mean that he did not wash his ears with soap: namely, its interpretation does not include the adjunct. Thus, the fact here is that whereas the adjunct can be elided in the null object construction in (31b), it cannot in (31c). Ellipsis of the adjunct is dependent on ellipsis of the object.

Another significant fact is obtained from the following data, where the antecedent and the subsequent sentence have different verbs:

(32) a. John kaaRə weegam kazhuki.
John car quicklywashed

'John washed a car quickly.'

b. Bill *e* nannaakki-(y)illa.
Bill repair-NEG

'lit. Bill did not repair *e*.'

Although (32b) is a null object construction, its interpretation does not include the adjunct corresponding to *quickly*. The sentence means that Bill did not repair a car, but not that Bill did not repair a car quickly. Comparing (32) with (29), (30), and (31a-b), we arrive at the generalization that adjunct ellipsis exhibits the same verb effect (recall the discussion about (16)).

Considering that ellipsis of adjuncts in Malayalam is contingent on null objects and is subject to the same verb requirement, we may assume that it does not involve ellipsis of adjuncts per se but rather ellipsis of a larger constituent like VP that contains adjuncts as well as objects. Given that the main verbs are overtly expressed in the relevant cases in (29b), (30b), and (31b), we are led to assume that they involve V-stranding VP-ellipsis (Goldberg 2005, McCloskey 1991, and Otani and Whitman 1991, among others). For example, (29) may be analyzed as in (33), where English glosses are used for convenience:

(33) a. [$_{TopP}$ John$_1$ well$_2$ *Topic* [$_{FocP}$ car$_3$ [$_{Foc'}$ [$_{Focus}$ washed$_V$][$_{TP}$ *T* [$_{vP}$ t_1 *v* [$_{VP}$ t_2 [$_{VP}$ t_V t_3]]]]]]]

b. [$_{FocP}$ Bill$_4$ [$_{Foc'}$ [$_{Foc}$ not-washed$_V$][$_{TP}$ *T* [$_{NegP}$ *Neg* [$_{vP}$ t_4 *v* ~~[$_{VP}$ well [$_{VP}$ t_V car]]~~]]]]]]

Following Mathew (2012), let us assume that verbs undergo raising to the head position of Focus Phrase (FocP) in Malayalam.[9] In (33a-b), the verbs move out of VP to the head position of FocP via the intervening head positions including T, Neg (for (33b)), and *v*. In the language, focused phrases appear in the position immediately preceding verbs, as shown by the following examples cited from Jayaseelan 2001:

(34) a. ninn-e aard aTiccu?
you-ACC who beat

'Who beat you?'

b. *aard ninn-e aTiccu?
who you-ACC beat

[9] Jayaseelan (2010) also argues that verbs are moved to some higher position in Malayalam, but for him, the movement operation involved is not head movement of verbs but phrasal movement of an XP containing them. This analysis is put aside here just because it is difficult to see how it can be integrated with V-stranding VP-ellipsis.

Wh-phrases are usually focused. Thus, the *wh*-phrase subject must appear immediately before the verb in (34). Mathew (2012) accounts for this preverbal focus phenomenon by assuming that while verbs move to the head position of FocP, focused elements occupy its specifier position, as in (33). In (33a), the object (*car*) is understood to be focused, while the other elements, namely the subject (*John*) and the adjunct (*well*), are assumed to be moved to the specifier position (or adjoined position) of Topic Phrase (TopP). In (33b), the subject (*Bill*) is in the specifier position of FocP (or alternatively may be in TopP, depending on how it is interpreted), but the object and the adjunct remain in VP, which is elided.[10]

The analysis along these lines leads to the expectation that Malayalam, an SOV language, should allow some material to appear in post-verbal positions. This is actually attested. The following data are pointed out by Jayaseelan (2001):

(35) a. aarum kaND-illa, aana-ye.
nobody saw-NEG elephant-ACC

'Nobody saw the elephant.'

b. aard ayaccu, ninn-e?
who sent you-ACC

'Who sent you?'

c. ñaan kaaNice-iTT-illa, Mary-k'k'ə aakattə.
I show-perf-NEG Mary-DAT that letter

'I haven't shown that letter to Mary.'

d. innale mazha peytu, iwiDe.
yesterday rain rained here

'It rained here yesterday.'

e. iwiDe mazha peytu, innale.
here rain rained yesterday

'It rained here yesterday.'

In (35a-b), the direct objects appear post-verbally. In (35c), the dative argument and the direct object occur after the verb. (35d-e) show that adjuncts can be placed in that position, too.

The considerations above suggest that Malayalam sentences where adjuncts are elided can be analyzed in terms of V-stranding VP-ellipsis as illustrated in (33). The fact that the Japanese counterparts of the Malayalam examples in (29b), (30b), and (31b) do not allow the

[10] In (33), the antecedent VP contains the traces (or copies) of the object and the adjunct whereas the elided VP has those elements unmoved. This sort of VP-ellipsis is permitted, as can be seen in cases like *This book, John likes. — I'm sure his mother doesn't.*

construals where adjuncts are implicated means that V-stranding VP-ellipsis is not available in Japanese. Kim (1999) and Oku (1998) independently argue for the absence of VP-ellipsis in Japanese, and I just follow them (interested readers are referred to those references).[11]

4. Concluding Remarks

I have considered data in Malayalam that contain null elements. I have shown that the language is similar to Japanese in permitting object ellipsis but behaves differently with respect to ellipsis of subjects and adjuncts. Malayalam is less permissible in the sense that it does not allow subjects to be elliptic (thus, its null subjects must be *pro*s or some empty categories that need to be locally bound). I have argued that Malayalam has agreement, albeit abstract, between subjects and T, which is responsible for the fact. The language is more tolerant in the sense that it allows adjuncts to be elided. I have argued that V-stranding VP-ellipsis is available in Malayalam and that apparent cases of adjunct ellipsis actually involve VP-ellipsis. Then, the difference between Japanese and Malayalam in this respect boils down to the absence or presence of V-stranding VP-ellipsis. Following Mathew (2012), I have suggested that Malayalam possesses verb movement, which is a prerequisite for V-stranding VP-ellipsis. On the other hand, there is no strong evidence for verb raising in Japanese, and this is compatible with the line of analysis advocated in this article.

I wish to end with a few remarks about issues concerning the line of research conducted here. First of all, while the data used here to examine the availability of argument ellipsis in Malayalam, namely those pertaining to sloppy readings, are fairly clear, they should be reinforced and confirmed by additional sets of data. In a bit to provide evidence for the argument ellipsis analysis in Japanese, Takahashi (2008b) considers null arguments anteceded by quantifiers and Takita (2011) examines cases involving negative polarity items.

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[11] Unlike Malayalam, Japanese lacks the preverbal focus requirement. Thus, the Japanese counterparts of (34a-b) are both grammatical:

(i) a. Kimi-o dare-ga tataita no?
you-ACC who-NOM hit Q
'Who hit you?'

b. Dare-ga kimi-o tataita no?
who-NOM you-ACC hit Q

This fact is compatible with the assumption that verbs do not undergo raising in Japanese at least in the way they do in Malayalam. On the other hand, Japanese is similar to Malayalam in that although it is also an SOV language, it sometimes allows non-verb final word order, which has been called the right dislocation construction in the literature (see Abe 1999, Takano forthcoming, and Tanaka 2001, among others). The authors just mentioned propose analyses of the phenomenon in Japanese that are totally different from the one in the text in terms of verb movement. Because I need to assume that the existence of the right dislocation construction does not lead to verb raising in Japanese, their analyses are consistent with my conjecture here.

These tests should be applied to Malayalam, too.

A second issue has to do with the impossibility of subject ellipsis in Malayalam. To account for that, I have suggested the hypothesis that the language has abstract agreement between subjects and T. This needs to be elaborated further and, if possible, supplemented with additional evidence. In 2.2 I motivated the hypothesis on the grounds that Malayalam belongs to the Dravidian family, other members of which do possess visible agreement between subjects and predicates. It might be that the agreement process in question in Malayalam has been turning from visible to abstract and may be in the course of extinction. This leads to the expectation that as the transition proceeds, the language should gradually become tolerant of subject ellipsis, like Japanese. It is interesting and important, therefore, to keep a close eye on null subjects in Malayalam.

Finally, when I considered elliptic null objects in Malayalam in 2.1, I concluded that they can arise through ellipsis of objects themselves. On the other hand, in section 3, where I examined ellipsis of adjuncts, I argued that VP-ellipsis is operative in the language. Put together, they mean that Malayalam has two ways to have elliptic objects: argument (or object) ellipsis and VP-ellipsis. Then, it should offer a rare opportunity to study the interaction of these two ellipsis processes in a single language, which, along with the other topics, is left for future research.

Although some uncertainties and challenges remain, I believe that the present study will contribute to a better understanding of the cross-linguistic distribution of elliptic arguments and facilitate further research on the topic.

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ON THE UNAVAILABILITY OF NP-ELLIPSIS WITH JAPANESE RELATIVE CLAUSES *

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1. Introduction

Well attested since Jackendoff (1971), English permits so-called 'N'-ellipsis', reformulated as 'NP-ellipsis' under the DP hypothesis (Abney 1987). Accordingly, not only (1a) but also (1b) is grammatical.

(1) a. Jiro criticized Taro's attitude, but Yoshio criticized Hanako's attitude.

b. Jiro criticized Taro's attitude, but Yoshio criticized Hanako's.

However, an NP cannot always be elided in DP. For example, (2b) is ungrammatical, in contrast to (2a):

(2) a. Jiroo criticized the attitude, but Yoshio criticized the attitude.

b. *Jiroo criticized the attitude, but Yoshio criticized the.

Lobeck (1990) as well as Saito and Murasugi (1990) (henceforth S&M) argue that the contrast between (1b) and (2b) follows from which positions *Hanako's* and *the* occupy within the DP. The structure of the word sequence *Hanako's attitude* in (1a) is as in (3):

(3) $[_{DP}$ Hanako's $[_{NP}$ attitude]]

Here, *Hanako's* occupies DP SPEC. This structure contrasts with that of the DP *the attitude*, where *the* is located in D, not in DP SPEC, as shown in (4):

(4) $[_{DP}$ $[_{D'}$ the $[_{NP}$ attitude]]]

* A previous version of this paper was presented at the 17th Workshop of the International Research Project on Comparative Syntax and Acquisition (Nanzan University) on February 16, 2013. I am indebted to the participants at this occasion; in particular, Keiko Murasugi, Koichi Otaki, Mamoru Saito, Koji Sugisaki, Hiroaki Tada, Daiko Takahashi, and Kensuke Takita. I am also thankful to Jon Clenton and Jonah T.-H. Lin for invaluable comments and suggestions, and to Masako Maeda and her friends for data from Kyushu dialects. This research was supported in part by the grant from the Japanese Ministry of Education and Science to the Center for Linguistics at Nanzan University for establishment of centers for advanced research (International Collaborative Research Project on Comparative Syntax and Language Acquisition) as well as the grant-in-aid for scientific research (No.22520397) awarded to the author. Usual disclaimers apply.

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The fact that (2b), in contrast to (1b), is ungrammatical, leads to the generalization that only when DP SPEC is filled, can NP be elided.

S&M show that this "DP SPEC" requirement on NP-ellipsis is also operative in Japanese; consider that in (5), parallel to (1b), the NP *taido* 'attitude' can be elided:[1]

(5) Jiroo-wa [$_{DP}$ Taroo-no [$_{NP}$ taido]]-o hihanshita ga, Yoshio-wa
-TOP -GEN attitude-ACC criticized though -TOP
[$_{DP}$ Hanako-no ([$_{NP}$ taido])]-o hihanshita.
-GEN attitude-ACC criticized

'Jiro criticized Taro's attitude, but Yoshio criticized Hanako's.'

According to S&M, the NP *taido* can be deleted because *Hanako-no* occupies DP SPEC, parallel to (1a).

This DP SPEC requirement leads to the prediction that NP-ellipsis should not be permitted if DP SPEC is not filled. This expectation is fulfilled. Given the assumption that relative clauses are adjoined to NP, thus not in DP SPEC, Saito, Lin and Murasugi (2008) (henceforth SL&M) propose that Japanese relative clauses cannot trigger NP-ellipsis, as exemplified in (6):

(6) [[Taroo-ga kinoo atta] hito]-wa yasashii ga, **[[Hanako-ga**
-NOM yesterday saw person-TOP kind though -NOM
kinoo atta] *(hito)]-wa kowai.
yesterday saw person-TOP scary

'The person Taro saw yesterday is kind, but the person Hanako saw yesterday is scary.' (SL&M 2008: 263)

In this example, the NP *hito* 'person' cannot be elided because the relative clause is not in DP SPEC. In essence, for S&M and SL&M, the contrast between (5) and (6) shows that only arguments can trigger NP-ellipsis: There is an argument/adjunct asymmetry with respect to the availability of NP-ellipsis.

However, following Abe (2006) and Kadowaki (2005), Takahashi (2011) claims that Japanese relative clauses do allow NP-ellipsis. For instance, in (7a) *syujyutsu* 'operation' can be absent in the second conjunct, as shown in (7b):[2]

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[1] Abbreviations used in this paper are as follows:
ACC = accusative, CL = classifier, DIST = distributive affix, GEN = genitive, NOM = nominative, PASS = passive, RC = relative clause, TOP = topic.

[2] Mihara's (1994: 212) example, given (i), which involves the abstract noun *syujyutsu* 'operation', shows that Kamio's (1983) condition that the pronominal *no* can only replace concrete nouns is too restrictive:

(7) a. [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru] syujyutsu]-wa kanari muzukashii.
is planned operation-TOP very difficult

'(lit.) The operation that was done yesterday was simple, but the operation that is planned today is very difficult.'

b. [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru]-no]-wa kanari muzukashii.
is planned-NO-TOP very difficult

Likewise, *kankei* 'relation' can be missing in the second conjunct, as shown in (8b):[3]

(i) [kinoo-no syujyutsu]-wa kantan datta ga, [kyoo-no]-wa muzukashisoo da.
yesterday-GEN operation-TOP simple was though today-one-TOP difficult-seem is

'(lit.) Yesterday's operation was simple, but today's one seems difficult.'

See Section 6 for relevant discussion on Kamio's (1983) condition on the pronominal *no*.

[3] Takahashi's (2011: 139) original example with *kankei* 'relation' is given in (i):

(i) [[[aisatsu-suru]-dake]-no kankei]-wa yoi ga, [[[okane-o
greeting-do-only-GEN relation-TOP good though money-ACC
kashikari-suru]-dake]-no]-wa yokunai.
borrowing・lending-do-only-NO-TOP not good

'(lit.) The relation in which they only greet is good, but the relation in which they only borrow and lend money is not good.'

In (i), the relative clause is accompanied by *dake* 'only.' In order to avoid any potential intervening factors with *dake*, this paper deals with examples without the element under question. Notice that if *dake* is omitted in (i), as shown in (ii), the meaning of the second conjunct changes; it means that borrowing and lending money is not good.

(ii) [[aisatsu-suru] kankei]-wa yoi ga, [[okane-o kashikari-suru]-no]-wa
greeting-do relation-TOP good though money-ACC lending・borrowing-do-NO-TOP
yokunai.
not good

'The relation that they greet is good, but to lead and borrow money is not good.'

(8) a. [[amerika-ga nihon-to kizuita] kankei]-wa ryookoo da ga,
America-NOM Japan-with built relation-TOP good is though
[[*pro* tyuugoku-to kizukoo-to shiteiru] kankei]-wa saki-ga
China-with trying to build relation-TOP future-NOM
futoomei da.
unclear is

'The relation that the United States built with Japan has been good, but the relation that she is trying to build with China is unclear about its future.'

b. ?[[amerika-ga nihon-to kizuita] kankei]-wa ryookoo da ga,
America-NOM Japan-with built relation-TOP good is though
[[*pro* tyuugoku-to kizukoo-to-shiteiru]-no]-wa saki-ga
China-with trying to build-NO-TOP future-NOM
futoomei da.
not obvious is

On the surface, these examples appear to show that Japanese relative clauses can trigger NP-ellipsis, contrary to SL&M's claim. Accordingly, the grammatical contrast between (6) on the one hand, and (7b) and (8b) on the other, clearly calls for further research examining the nature of relative clauses in Japanese. This paper, as a consequence, investigates whether Japanese relative clauses allow NP-ellipsis. In addition, there appears to be one difference between the former example and the latter examples. Only in (7b) and (8b), the relative clauses are accompanied by *no*. These two issues are clearly interrelated, and this paper addresses the status of the *no* attached to a relative clause in studying the availability of NP-ellipsis with a relative clause.

The paper is organized as follows: following this introduction, Section 2 clarifies the two questions to be raised in this paper; (1) whether Japanese permits NP-ellipsis triggered by relative clauses, and (2) whether the *no* attached to a relative clause, as in (7b) and (8b), is the Genitive Case marker or the pronominal *no*. Section 3 summarizes SL&M's (2008) and Takahashi's (2011) mechanisms of NP-ellipsis, resulting in different answers to these two questions. SL&M deny the existence of the NP-ellipsis in question and *no* is the pronominal *no*. Takahashi, on the other hand, argues for such an NP-ellipsis, and *no* is the Genitive Case marker. In Section 4 to Section 6, we turn to provide three arguments for SL&M's stance that Japanese relative clauses cannot trigger NP-ellipsis and show that what appears to be an instance of NP-ellipsis, in fact, involves the pronominal *no*. Section 4 shows that split and non-linguistic antecedents are acceptable in cases where NP-ellipsis with a relative clause appears to have taken place. This section also shows that sloppy interpretation is unavailable in some cases where a relative clause appears to have triggered NP-ellipsis in Japanese, while its Chinese counterpart does allow sloppy interpretation in the same context. The fact that Chinese, but not Japanese, relative clauses easily yield sloppy interpretation is naturally accommodated under the hypothesis made by SL&M, and further supported by Miyamoto (2010), that Chinese relative clauses, but not their Japanese counterparts, make use of

Kaynean (1994) relative clause formation. Section 5 discusses the nominal-internal distributive interpretation of numeral quantifiers (NQs) with the distributive affix *zutsu* (Miyamoto 2009). Miyamoto argues that NQs with *zutsu* form a relative clause under the nominal-internal distributive reading. Miyamoto's proposal then enables us to use the availability of nominal-internal distributive interpretation as a test to see whether an NQ+*zutsu* behaves as a relative clause. We show that there is a case where NP-ellipsis by the relative clause formed by an NQ with *zutsu* would incorrectly create a configuration that should permit the reading in question. This over-generation is shown not to arise if NP-ellipsis is not available with Japanese relative clauses. Section 6 discusses Kamio's (1983) claim that abstract nouns cannot be replaced by the pronominal *no*. It will be concluded that in examples such as (7b) and (8b), which appear to involve NP-ellipsis, the possibility of the pronominal *no* is not fully excluded. Thereby, we maintain SL&M's proposal on NP-ellipsis based on Kamio's condition. Finally, Section 7 contains concluding remarks.

2. Where to Start: Murasugi (1991)

As highlighted in Section 1, we believe that the examination of the status of the *no* attached to a relative clause, as boldfaced in (9), provides an indication of whether a relative clause can trigger NP-ellipsis:

(9) [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru]-**no**]-wa kanari muzukashii.
is planned-NO-TOP very difficult

'The operation that was done yesterday was simple, but the operation that is planned today is very difficult.'

Here, four possibilities illustrated in (10a-c), are considered for the structure of the subject, [$_{RC}$ *kyoo yoteisareteiru*]-*no*, of the second conjunct:

(10) a. [[$_{CP}$[$_{TP}$… Relative Clause …]-no] *e*] (no = C)

b. [[… Relative Clause …] no] (no = Pronominal Relative Head)

c. [[… Relative Clause …]-no *e*] (no = Genitive Case Marker)

(i) The gap *e* is created by NP-ellipsis.

(ii) The gap *e* is the base-generated empty pronoun *pro*.

Among these four possibilities, Murasugi (1991) excludes the possibilities given in (10a) and (10cii).

Notice first that long-distance dependency is not possible in Japanese adjunct relative

clauses. In (11), *riyuu* 'reason' cannot refer to the reason why Taro swam.

(11) [$_{NP}$ [$_{RC}$ Hanako-ga [[Taroo-ga oyoida]-to] omotteiru] riyuu]
-NOM -NOM swam-that think reason

'the reason Hanako thinks that Taro swam'

This suggests that relative clauses cannot make use of Op-movement, making the intended long-distance interpretation available. Based, in part on this fact, Saito (1985) and later Murasugi (1991) argue that Japanese relative clauses are TP in category. Under the TP hypothesis of relative clauses, the fact that the interpretation under question is unavailable in (11) is naturally expected because there is no CP SPEC available for the Op to be raised to. Since Japanese relative clauses lack CP, there is also no C position the complementizer *no* can occupy. Thus, (10a) is not an available option.

There is also a reason to cast doubt on (10cii) (Kadowaki 2005; Kitagawa and Ross 1982). It has been observed that the relative clause accompanied by *no* yields derogatory connotation (Kuroda 1976-1977). Notice, for example, that the second conjunct of (12) connotes that the person whom Hanako saw yesterday is not someone who deserves respect, and therefore, a conflict results between the derogatory connotation arising from the presence of *no* and the honorific form of the verb.

(12) #[[Taroo-ga kinoo atta] sensei]-wa suugaku-o oshieteirassyaru ga,
-NOM yesterday saw teacher-TOP math-ACC teach though
[[Hanako-ga kinoo atta]-**no**]-wa rika-o oshieteirassyaru.
-NOM yesterday saw-NO-TOP science-ACC teach

'The person Taro saw yesterday teaches math, but ~~the person~~ Hanako saw yesterday teaches science.'

Importantly, the covert pronoun *pro* does not exhibit this derogatory connotation, as shown in (13):

(13) Tanaka-sensei-ga suugaku-o oshieteirassyaru.
-NOM math-ACC teach
pro rika-mo oshieteirassyaru.
science-also teach

'Prof. Tanaka teaches math. He also teaches science.'

The presence of the derogatory connotation in (12) thus leads to the exclusion of (10cii) as well.

Murasugi's (1991) contribution to our argument is essential, that NP-ellipsis is not available with Japanese relative clauses, and allows us to assume that (10a) and (10cii) are not options available with Japanese relative clauses, leaving us with (10b) and (10ci).

SL&M's proposal leads to (10b) since NP-ellipsis is not available with adjuncts in general, thus with relative clauses. Alternatively, Takahashi (2011) argues for (10ci).

3. Can Relative Clauses Trigger NP-ellipsis?

Having explored the foundations of this paper, we are now ready to illustrate SL&M's and Takahashi's, two competing proposals, and provide the theoretical basis for NP-ellipsis. This section focuses on cases where NP-ellipsis appears to be triggered by a relative clause.

3.1. Saito, Lin and Murasugi (2008)

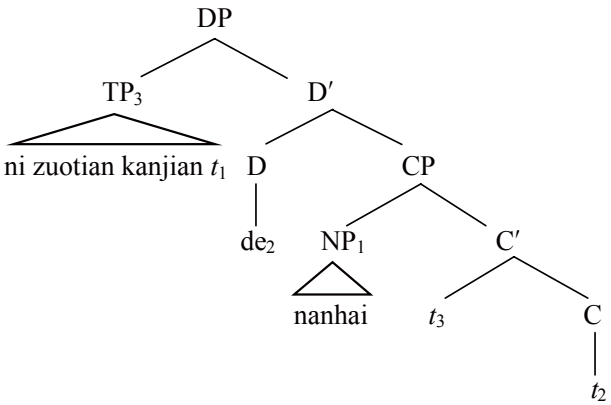
Based on the comparative study of Chinese and Japanese relative clauses, Simpson (2002) and SL&M claim that Chinese relative clauses are of Kaynean (1994) type. The essence of their proposal is illustrated by the example in (14).[2]

(14) [[Wo zuotian kanjian] de nanhai] bi **[[ni zuotian kanjian] de**
I yesterday see DE boy than you yesterday see DE
(nanhai)] geng youqian.
boy more rich

'The boy I saw yesterday is richer than the boy you saw yesterday.'
(SL&M: 263)

Under the Simpson–SL&M proposal, the boldfaced DP has the structure given in (15).

(15)



In (15), first, the relative head NP *nanhai* 'boy' is raised out of the relative clause TP to CP SPEC, as shown in (16a). Second, *de*, which is generated in C, is raised to D, which makes the SPEC's of DP and CP "equidistant" from the CP complement position (Lin, Murasugi, and Saito 2001).[3] The head-movement in point is illustrated in (16b). Finally, the relative clause TP is raised to DP SPEC, as shown in (16c).

(16) a. $[_{DP}\ [_{CP}\mathbf{[_{NP}\ nanhai]_1}[_C[_{TP}$ ni zuotian kanjian $\boldsymbol{t_1}$] de]]]

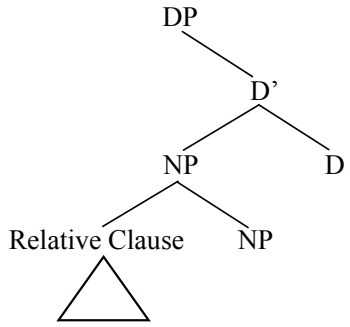
b. $[_{DP}\ [_{D'}\ \mathbf{de_2}\ [_{CP}[_{NP}\text{nanhai}]_1[_{C'}\ [_{TP}\text{ni zuotian kanjian}\ t_1]\ \boldsymbol{t_2}]]]]$

c. $[_{DP}\mathbf{[_{TP}\ ni\ zuotian\ kanjian}\ \boldsymbol{t_1}\mathbf{]_3}\ [_{D'}\ \text{de}_2\ [_{CP}[_{NP}\ \text{nanhai}]_1[_{C'}\ \boldsymbol{t_3}\ t_2]]]]$

Notice that Chinese relative clauses can trigger NP-ellipsis (see also Aoun and Li 2003; Huang, Li, and Li 2009). For example, the boldfaced NP *nanhai* 'boy' can be elided in (14). Under this Kaynean approach to Chinese relative clauses, the NP-ellipsis in question does not pose any problem for the argument/adjunct asymmetry introduced in Section 1, since TP is in fact a complement of C in (15).

SL&M argue that Japanese relative clauses, on the other hand, are base-generated in an NP-adjoined position, as illustrated in (17):[4]

(17)



Accordingly, an NP-adjoined relative clause cannot move to DP SPEC due to the prohibition against A'-to-A movement (Chomsky 1973; May 1979; Fukui 1993, among others). Thus, Japanese relative clauses cannot satisfy the DP SPEC requirement. As a result, NP-ellipsis is not available with relative clauses in Japanese, as shown in (6), repeated here as (18):

(18) [[Taroo-ga kinoo atta] hito]-wa yasashii ga, **[[Hanako-ga**
-NOM yesterday saw person-TOP kind though -NOM
kinoo atta] *(hito)]-wa kowai.
yesterday saw person-TOP scary

'The person Taro saw yesterday is kind, but the person Hanako saw yesterday is scary.' (SL&M 2008: 263)

If SL&M's proposal is accurate, the remaining task is to account for the grammaticality of examples such as (7b), repeated here as (19), which appear to support the hypothesis that relative clauses do license NP-ellipsis in Japanese:

[4] See also Murasugi (2000a, b).

(19) [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru]-**no**]-wa kanari muzukashii.
is planned-NO-TOP very difficult

'(lit.) The operation that was done yesterday was simple, but ~~the operation~~ that is planned today is very difficult.'

Between the two remaining possibilities; (10b) and (10ci), highlighted in Section 2, we are led to choose the former under SL&M; no NP-ellipsis is possible with Japanese relative clauses, and thus, the *no* attached to a relative clause must be the pronominal *no*.

Notice that the pronominal *no* requires the NP-modifier, as shown in the contrast between (20a, b):[5]

(20) a. Taroo-ga [$_{NP}$ [$_{AP}$ takai] no]-o katta.
-NOM expensive one-ACC bought

'Taro bought an expensive one.'

b. *Taroo-ga [$_{NP}$ no]-o katta.
-NOM one-ACC bought

'(lit.) Taro bought an one.'

If Japanese relative clauses are adjoined to NP, it comes as no surprise that they can also license the pronominal *no*. Thus, the licensing of the pronominal *no* is also naturally accommodated under SL&M's proposal.

3.2. Takahashi (2011)

Takahashi (2011) argues that Japanese relative clauses do, however, license NP-ellipsis; examples of which are repeated here as (21a, b):

(21) a. [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru]-no]-wa kanari muzukashii.
is planned-NO-TOP very difficult

'(lit.) The operation that was done yesterday was simple, but ~~the operation~~ that is planned today is very difficult.'

[5] See Murasugi (1991) for relevant discussion.

b. ?[[amerika-ga nihon-to kizuita] kankei]-wa ryookoo da ga,
America-NOM Japan-with built relation-TOP good is though
[[*pro* tyuugoku-to kizukoo-to-shiteiru]-no]-wa saki-ga
China-with trying to build-NO-TOP future-NOM
futoomei da.
not obvious is

'The relation that the United States built with Japan has been good, but ~~the relation~~ that she is trying to build with China is unclear about its future.'

As indicated with the brackets, *syujyutsu* 'operation' and *kankei* 'relation' can be absent. Here, in order to exclude the possibility in (10b), Takahashi, following SL&M, uses the abstract nouns in his examples, assuming Kamio's (1983) condition that abstract nouns cannot be replaced by the pronominal *no*.[6] Accordingly, for Takahashi, (21a, b), having the abstract nouns as the target of the ellipsis operation, necessarily involve NP-ellipsis.

Takahashi accounts for the availability of NP-ellipsis with Japanese relative clauses, based on three assumptions:

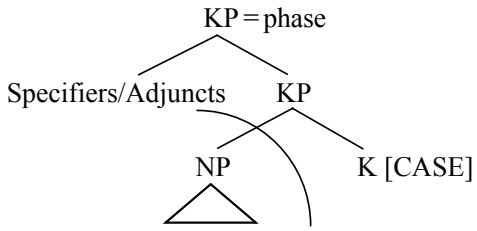
(22) a. A head with a Case-feature is a phase head.

b. Only complements of phase heads can undergo ellipsis.

c. Phase heads require edges when phase head complements undergo ellipsis.
(Takahashi 2011: 158)

How Takahashi's proposal works is illustrated in (23):

(23)



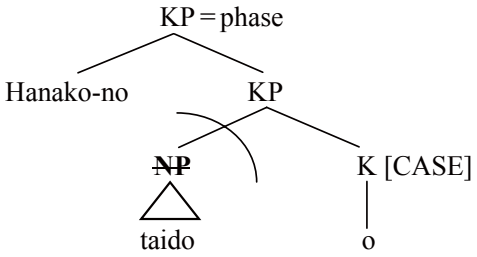
First, Takahashi assumes that Kase Phrase (KP) is the highest nominal projection headed by a Case marker with a Case feature, [CASE], which needs to be valued. Second, some element must be adjoined to KP when NP-ellipsis is intended. If these two conditions are met, the NP complement can be elided. For instance, in (24a), the word sequence *Hanako-no taido-o* is assumed to have the structure given in (24b):

[6] But see Section 6.

(24) a. Jiroo-wa [Taroo-no [taido]]-o hihanshita ga, Yoshio-wa
-TOP -GEN attitude-ACC criticized though -TOP
[Hanako-no [$_{NP}$ ~~taido~~]]-o hihanshita.
-GEN attitude-ACC criticized

'Jiro criticized Taro's attitude, but Yoshio criticized Hanako's.'

b.



In (24b), the ACC Case marker projects KP with [CASE], and *Hanako-no* is adjoined to KP. As a result, the NP *taido* can be elided.[7]

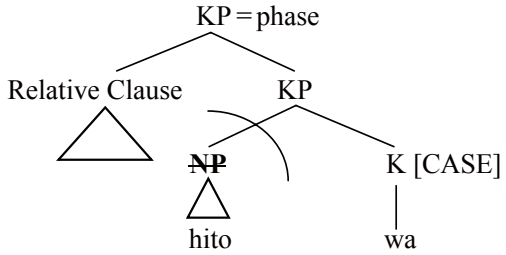
Importantly, Takahashi proposes that not only arguments but also adjuncts can act as a KP-adjoined element that licenses NP-ellipsis, and therefore, relative clauses should also license NP-ellipsis. According to Takahashi, this expectation is fulfilled, as already shown in (7b) and (8b). However, as the ungrammaticality of (25) shows, the prediction is not quite so straightforward:

(25) *[[Taroo-ga kinoo atta] hito]-wa yasashii ga,
-NOM yesterday saw person-TOP kind though
[[Hanako-ga kinoo atta] ~~hito~~]-wa kowai.
-NOM yesterday saw person-TOP scary

'The person Taro saw yesterday is kind, but ~~the person~~ Hanako saw yesterday is scary.'

Notice the lack of an obvious difference between (24b) and (26) below:

(26)



[7] Takahashi (2011) also provides an alternative account for the availability of NP-ellipsis under the assumption that Genitive Case is structural. Although this alternative may have important implications for the framework he assumes, this revision is not crucial for the purpose of this paper.

Observing the ungrammaticality of (25), Takahashi proposes that relative clauses (when they are not followed by *no*) cannot license NP-ellipsis (Takahashi 2011: 188). In short, for Takahashi, (25) is ungrammatical not because Japanese relative clauses cannot trigger NP-ellipsis, but because the Genitive Case marker *no* is not attached to the relative clause. As expected, (25) drastically improves if *no* is attached to the relative clause, as shown in (27):

(27) [[Taroo-ga kinoo atta] hito]-wa yasashii ga,
-NOM yesterday saw person-TOP kind though
[[Hanako-ga kinoo atta]**-no**]-wa kowai.
-NOM yesterday saw-NO-TOP scary

'The person Taro saw yesterday is kind, but ~~the person~~ Hanako saw yesterday is scary.'

Accordingly, Takahashi suggests a curious restriction on NP-ellipsis: KP-adjoined elements must bear Genitive Case 'only' when they license NP-ellipsis. A question naturally arises as to why Genitive Case is required when the NP is elided, and it is prohibited when the NP remains overt, as shown in (28).

(28) *[[Taroo-ga kinoo atta] hito]-wa yasashii ga,
-NOM yesterday saw person-TOP kind though
[[Hanako-ga kinoo atta]**-no** hito]-wa kowai.
-NOM yesterday saw-NO person-TOP scary

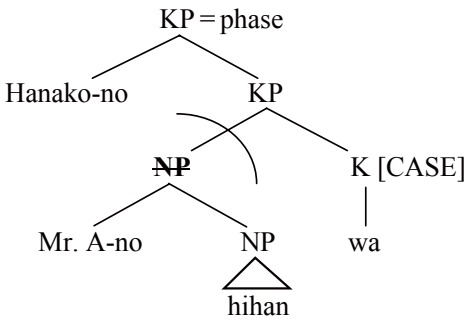
'The person Taro saw yesterday is kind, but the person Hanako saw yesterday is scary.'

Another curious condition Takahashi proposes is that when two or more elements which can be adjoined to KP, are present, the lower one can be adjoined to NP. For instance, in (29a), *A-san-no* 'Mr. A's' must be located within NP, as shown in (29b), so that it can be deleted with the rest of the material in NP.

(29) a. [Hanako-no A-san-no hihan]-wa ii ga, [Taroo-no ~~A-san-no~~
-GEN Mr. A-GEN criticism-TOP good though -GEN Mr. A-GEN
~~hihan~~]-wa yoku-na-i.
criticism-TOP not good

'Hanako's criticisms of Mr. A is good, but Taro's ~~criticisms of Mr. A~~ is not.'
(Takahashi 2011: 161)

b.



Under Takahashi's proposal, we are therefore left with another question of why such a condition holds.

3.3. Summary

SL&M propose that only arguments can trigger NP-ellipsis while Takahashi argues that not only arguments but also adjuncts license NP-ellipsis. Accordingly, the *no* attached to the relative clause receives different analyses; it must be the pronominal *no* under SL&M's proposal whereas it is the Genitive Case marker under Takahashi's proposal. In the next three sections, we present three arguments supporting SL&M's proposal that NP-ellipsis cannot be executed with a relative clause as its trigger.

4. Antecedents

In this section, we focus on how the antecedent is determined in cases where NP-ellipsis appears to have taken place. Specifically, we examine whether split and non-linguistic antecedents are acceptable and whether sloppy interpretation is available in the cases under question.

4.1. Split and Non-Linguistic Antecedents

The first argument in favor of SL&M's proposal comes from the availability of split and non-linguistic antecedents.[8] Notice that VP-ellipsis in English, for example, does not allow split antecedents, as shown in (30):

(30) Taro can swim fast, and Hanako can run fast. *Jiro can [$_{VP}$ *e*], too.

[8] The two tests that are used in this section are owed to Kadowaki (2005). Kadowaki's purpose was to show that Japanese NP-ellipsis in general makes use of the schematic structure given in (10cii), repeated here as (i):

(i) [[$_{RC}$ …]-no *pro*] (no = Genitive Case marker)

We, however, do not share his conclusion, and instead, assume with Murasugi (1991) that (10cii) is not tenable in Japanese NP-ellipsis. (see also Section 2)

The elided VP cannot mean that Jiro can both swim and run fast. By the same token, NP-ellipsis also does not allow split antecedents, as shown in (31):

(31) Taro's book of physics was very expensive, and Hanako's book of chemistry was also very expensive. *Jiro's [$_{NP}$ *e*] were both rather cheap, too.

The elided NP cannot be interpreted as Jiro's book of physics and his book of chemistry. These examples show that the unavailability of split antecedents is an indication that ellipsis takes place.

Now, if what appears to be Japanese NP-ellipsis with a relative clause is a genuine instance of NP-ellipsis, we predict that split antecedents are not acceptable. This prediction, however, is not borne out, as shown in (32):

(32) [(sensei-ga taihen oisogashii-node,) [[raisyuu-no Tanaka-sensei-no
Prof. -NOM very busy-because next week-GEN -Prof.-GEN
kooen]-wa ichi-ji-kan-o yoteishiteiru]]. [sono ato-no
lecture-TOP one-hour-period-ACC has scheduled that after-GEN
kyoodoo kenkyuu-nikansuru uchiawase]-mo ichi-ji-kan-o yoteishiteiru.
joint research- concerning meeting-also one-hour-period-ACC has scheduled

ippoo, [[Satoo-sensei-ga ohikiuke-ni natta]**-no**]-wa
on the other hand -Prof.-NOM accepted -NO-TOP
ni-ji-kan-zutsu-ga yoteisareteiru.
two-hour-period-DIST-NOM is scheduled

'(lit.) Because Prof. Tanaka has been very busy, his lecture next week is scheduled to be (just) one hour long. The meeting concerning their joint research after that is also scheduled to be one hour long. On the other hand, ~~the lecture and the meeting concerning their joint research~~ that Prof. Sato has accepted to be responsible for are both scheduled to be two hour long.'

Importantly, the sentence concerning Prof. Sato contains the distributive affix *zutsu*, which requires a plural element to distribute over; accordingly, as given in the English translation, this sentence means that Prof. Sato is planning to give a two-hour lecture and a two-hour meeting regarding the joint research project. This example therefore shows that what appears to be a case with NP-ellipsis with a relative clause permits split antecedents. It is not clear how this fact can be accommodated under Takahashi's NP-ellipsis-based proposal. Notice that the parallelism requirement for ellipsis cannot be met in (32), and the entities under question must be identified contextually.

There are even cases where no linguistic antecedent is present, and the sentences remain grammatical, as exemplified in (33):

(33) (Context)
It was the day for a meeting to decide a topic for the joint research project. After the meeting, one student asked his friends:

[[Kita-san-ga teianshita]**-no**]-wa doo omotta. muzukashi-sugiru-yo-na.
-Mr.-NOM proposed-NO-TOP how thought difficult-too

'What did you think about ~~the topic~~ that Mr. Kita proposed? It's too difficult, isn't it?'

In (33), what Mr. Kita proposed is a possible topic for the joint research project. No obvious linguistic antecedent is present here, and the sentence is still fully acceptable. This example thus constitutes further support for the view that the interpretation of what appears to be NP-ellipsis triggered by a relative clause is context-dependent, and the antecedent does not have to be linguistically present.

In short, the fact that the availability of split and non-linguistic antecedents in examples with what appears to be NP-ellipsis triggered by a relative clause shows that independent of whether a genuine NP-ellipsis is available with Japanese relative clauses, the option of the pronominal *no*, that is, (10b) in Section 2, must be available.

4.2. Strict/sloppy Interpretation

The claim that the antecedent is determined contextually is also supported by the fact that there are cases where sloppy interpretation is difficult to obtain with the cases under question.

Notice first that typical NP-ellipsis examples are ambiguous between strict and sloppy interpretation, although one interpretation is favored over the other depending on context. For example, (34) is ambiguous between the two readings under question.

(34) [Taroo-no [[jibun-no otooto]-no hihan]]-wa ii ga,
-GEN self-GEN younger brother-GEN criticism-TOP good though
[Jiroo-no *e*]-wa yoku-na-i.
-GEN -TOP not good

'Taro's criticisms of his own younger brother is good, but Jiro's is not.'

In (34), the second conjunct can describe the situation in which Jiro also criticized Taro's younger brother; this is an instance of strict interpretation, but can also mean that Jiro also criticized his own younger brother, and represents sloppy interpretation.

The ambiguity in (34) is reminiscent of the strict/sloppy ambiguity that we observe in VP-deletion. For example, (35b), which follows (35a), is ambiguous between the same two types of interpretation:

(35) a. Hanako criticized her idea.

b. Kazuko did [$_{VP}$ *e*], too.

(35b) can mean that Kazuko also criticized Hanako's idea (strict reading). Alternatively, it can also refer to the situation that Kazuko also criticized her own idea (sloppy reading). Thus, the parallelism between (34) and (35b) constitutes evidence for the hypothesis that NP-ellipsis is involved in (34).

Provided that the presence of the sloppy interpretation indicates that ellipsis has taken place, we predict that if Japanese relative clauses can trigger NP-ellipsis, sloppy interpretation be present, parallel to (35b). With this prediction in mind, we are now ready to examine the availability of sloppy reading in cases of what appears to be NP-ellipsis triggered by a relative clause.

4.2.1. Japanese Relative Clauses

(36) is a case in point:[9]

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[9] (i) represents the case where a phrase containing *jibun* 'self' precedes a relative clause:

(i) Taroo-wa [[[jibun-no ani]-no [[LI-ni saitaku-sareta] ronbun]]-ga ichiban da]-to omotteiru.
-TOP self-GEN elder brother-GEN -by was accepted paper-NOM best is-that think

'Taro thinks that his own elder brother's paper that was accepted by LI is the best.'

The reflexive necessarily refers to Taro here. Of our interest is which example in (ii) can follow (i) describing the situation in which Jiro also thinks that his own elder brother's paper in L(inguistic) I(nquiry) is the best. (iia, b) clearly allow this sloppy interpretation. (iic) is a case in point.

(ii) a. Jiroo-mo [[[jibun-no ani]-no [[LI-ni saitaku-sareta] ronbun]]-ga
-also self-GEN elder brother-GEN -by was accepted paper-NOM
ichiban da]-to omotteiru.
best is-that think

'Jiro also thinks that his own elder brother's paper that was accepted by LI is the best.'

b. Jiroo-mo [[[jibun-no ani]-no [[LI-ni saitaku-sareta]-no]]-ga
-also self-GEN elder brother-GEN -by was accepted-NO-NOM
ichiban da]-to omotteiru.
best is-that think

c. Jiroo-mo [[[LI-ni saitaku-sareta]-no]-ga ichiban da]-to omotteiru.
-also -by was accepted-NO-NOM best is-that think

The interpretation that the native speakers of Japanese reported is that Jiro also thinks that someone's paper in LI is the best. The most salient interpretation is the strict interpretation. However, in the context in which Jiro believes his own elder brother the best linguist, (iic) could be about Jiro's own

elder brother's paper in LI. In other words, (iic) can be about the paper in LI written by someone salient in the given context. Also, (iiia, b) refer to Jiro's own elder brother's paper in JEAL whereas (iiic) is about the paper in JEAL written by someone under discussion.

(iii) a. Jiroo-wa [[[jibun-no ani]-no [[JEAL-ni saitaku-sareta] ronbun]]-ga
-TOP self-GEN elder brother-GEN -by was accepted paper-NOM
ichiban da]-to omotteiru.
best is-that think

'Jiro thinks that his own elder brother's paper that was accepted by JEAL is the best.'

b. Jiroo-wa [[[jibun-no ani]-no [[JEAL-ni saitaku-sareta]-no]]-ga
-TOP self-GEN elder brother-GEN -by was accepted-NO-NOM
ichiban da]-to omotteiru.
best is-that think

c. Jiroo-wa [[[JEAL-ni saitaku-sareta]-no]-ga ichiban da]-to omotteiru.
-TOP -by was accepted-NO-NOM best is-that think

Suppose that (iva, b) were the structure of (iic) and (iiic). Then, under the hypothesis that Japanese relative clauses can trigger NP-ellipsis, we are forced to assume that these two examples must involve "deletion" of discontinuous elements:

(iv) a. Jiroo-mo [[~~jibun-no ani-no~~ [[LI-ni saitaku-sareta]-no ~~ronbun~~]]-ga
-also self-GEN elder brother-GEN -by was accepted-NO paper-NOM
ichiban da]-to omotteiru.
best is-that think

b. Jiroo-wa [[~~jibun-no ani-no~~ [[JEAL-ni saitaku-sareta]-no ~~ronbun~~]]-ga
-TOP self-GEN elder brother-GEN -by was accepted-NO paper-NOM
ichiban da]-to omotteiru.
best is-that think

Given the reasonable assumption that discontinuous elements cannot be the target of an ellipsis operation, (iva, b) cannot be the structure of (iic) and (iiic). Rather, we have to assume that the reflexive is not present in (iic) and (iiic), as shown in (va, b):

(v) a. Jiroo-mo [[[LI-ni saitaku-sareta]-no]-ga ichiban da]-to omotteiru.
-also -by was accepted-NO-NOM best is-that think

b. Jiroo-wa [[[JEAL-ni saitaku-sareta]-no]-ga ichiban da]-to omotteiru.
-TOP -by was accepted-NO-NOM best is-that think

Accordingly, the NP *ronbun* may be deleted. If (va,b) are correct structures for (iic) and (iiic), it is not surprising that the paper in LI or JEAL could be written by someone salient in the context, consistent with the judgments of the subjects.

Under the SL&M's proposal, on the other hand, we assume that (iic) and (iiic) are instances of the pronominal *-no*. Consequently, the author of the paper in LI or JEAL must also be given contextually. Thus, The word sequence with *jibun* 'self' preceding a relative clause does not provide any evidence for either of the proposals.

(36) Taroo-wa [[[LI-ni saitaku-sareta] [[jibun-no ani]-no ronbun]]-ga
-TOP -by was accepted self-GEN elder brother-GEN paper-NOM
ichiban da]-to omotteiru.
best is-that think

'Taro thinks that his own elder brother's paper that was accepted by LI is the best.'

As a continuation to (36), (37a-c) and (38a-c) are all natural:

(37) a. Jiroo-mo [[[LI-ni saitaku-sareta] [[jibun-no ani]-no ronbun]]-ga
-also -in was accepted self-GEN elder brother-GEN paper-NOM
ichiban da]-to omotteiru.
best is-that think

'Jiro also thinks that his own elder brother's paper that was accepted by LI is the best.'

b. Jiroo-mo [[[LI-ni saitaku-sareta] [[jibun-no ani]-no]]-ga
-also -by was accepted self-GEN elder brother-NO-NOM
ichiban da]-to omotteiru.
best is-that think

c. Jiroo-mo [[[LI-ni saitaku-sareta]-no]-ga ichiban da]-to omotteiru.
-also -by was accepted-NO-NOM best is-that think

(38) a. Jiroo-wa [[[JEAL-ni saitaku-sareta] [[jibun-no ani]-no
-TOP -by was accepted self-GEN elder brother-GEN
ronbun]]-ga ichiban da]-to omotteiru.
paper-NOM best is-that think

'Jiro thinks that his own elder brother's paper that was accepted by JEAL is the best.'

b. Jiroo-wa [[[JEAL-ni saitaku-sareta] [[jibun-no ani]-no]]-ga
-TOP -by was accepted self-GEN elder brother-NO-NOM
ichiban da]-to omotteiru.
best is-that think

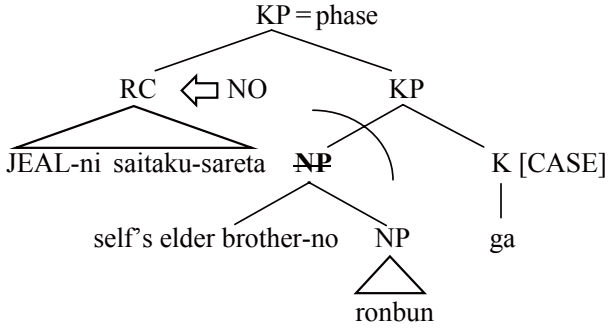
c. Jiroo-wa [[[JEAL-ni saitaku-sareta]-no]-ga ichiban da]-to omotteiru.
-TOP -by was accepted-NO-NOM best is-that think

However, there is a difference between (37a, b) and (38a, b) on the one hand, and (37c) and (38c) on the other. The former only allow sloppy interpretation due to the presence of the reflexive *jibun*; Jiro refers to his own elder brother's paper, accepted by LI or JEAL. In contrast, according to the informants, the latter refer to someone's paper in LI or JEAL. The most likely interpretation as a continuation of (36) is that Jiro is also thinking about Taro's

elder brother's paper. Of significance is the fact that it is very difficult to understand these sentences as Jiro referring to his own elder brother's paper. That is, (37c) and (38c) do not allow sloppy interpretation as easily as the typical NP-ellipsis example in (34) does.

The fact that the sloppy interpretation is difficult to obtain in (37c) and (38c) is surprising under Takahashi's NP-ellipsis-based proposal. For example, Takahashi would assign the structure in (39) to the embedded subject of (38c):

(39)



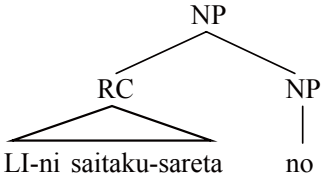
As highlighted in Section 3.2, Takahashi assumes that when NP-ellipsis is intended, KP-specifiers/adjuncts can be inside NP, being a target of the ellipsis operation. Thus, in (39), it is of no surprise that *jibun-no ani-no* 'self-GEN elder brother-GEN' can also be elided. Consequently, the unavailability of the sloppy reading in (37c) and (38c) constitutes evidence against his approach.

In contrast, under SL&M's proposal, (37c) and (38c) are instances of the pronominal *no*. Thus, the embedded subject of (37c), repeated here as (40a), for example, should have the structure given in (40b):

(40) a. Jiroo-mo **[[LI-ni saitaku-sareta]-no]**-ga ichiban da]-to omotteiru.
-also -by was accepted-NO-NOM best is-that think

'Jiro also thinks that the one that was accepted by LI is the best.'

b.



c. the one that was accepted by LI

Given that (40b) is the Japanese counterpart of (40c), it comes as no surprise that the author of the paper must be identified from the context. In the above examples, (36) introduces Taro's elder brother's paper into the context, and accordingly, the most salient interpretation of the examples in (37c) and (38c) would be about Taro's elder brother's paper(s). At the

same time, if the right context is conceived of, the pseudo sloppy interpretation, which a few of our informants allowed, may also be anticipated.

It is worth noting at this point that the clear-cut sloppy interpretation is not available in (37c) and (38c) suggests that Japanese relative clauses do not make use of Kaynean relative-clause formation (see Section 3.1). In the following section, we would like to develop our interpretations by comparing the behavior of Japanese relative clauses with their Chinese counterparts. Of importance here is the proposal made by SL&M and supported by Miyamoto (2010) that Chinese relative clauses do trigger NP-ellipsis, making use of Kaynean head raising. If this is accurate, we predict that the Chinese counterparts of (37c) and (38c) permit the sloppy interpretation, in contrast to these Japanese examples.

4.2.2. Chinese Relative Clauses

Cases in point are given in (42a, b) and (43a, b), which follow (41): (42a) is the Chinese counterpart of (37a) whereas (42b) is the Chinese counterpart of (38a):[10]

(41) Zhangsan renwei [[[bei LI jieshou de] ziji-de gege-de lunwun]
think PASS LI accept DE self-GEN elder brother-DE paper
shi zui-hao-de].
be best

'Zhangsan thinks that his elder brother's paper which is accepted by LI is the best.'

(42) a. Lisi ye renwei [[[bei LI jieshou de] ziji-de gege-de
too think PASS LI accept DE self-GEN elder brother-DE
lunwun] shi zui-hao-de].
paper be best

'Lisi also thinks that his elder brother's paper which is accepted by LI is the best.'

b. Lisi renwei [[[bei JEAL jieshou de] ziji-de gege-de
think PASS JEAL accept DE self-GEN elder brother-DE
lunwun] shi zui-hao-de].
paper be best

'Lisi thinks that his elder brother's paper which is accepted by JEAL is the best.'

Here, all the examples contain the reflexive *ziji* 'self' without NP-ellipsis, accordingly, sloppy interpretation is forced in these examples.

Of importance is the fact that sloppy interpretation is also available in (43a, b), the Chinese counterparts of (37c) and (38c):

[10] I thank J. Lin for Chinese data and their grammatical judgments.

(43) a. ?Lisi ye renwei [[bei LI jieshou de] shi zui-hao-de].
too think PASS LI accept DE be best

'Lisi also thinks that ~~his own elder brother's paper~~ which is accepted by LI is the best.'

b. ?Lisi renwei [[bei JEAL jieshou de] shi zui-hao-de].
think PASS JEAL accept DE be best

'Lisi thinks that ~~his own elder brother's paper~~ which is accepted by JEAL is the best.'

We take the contrast between Japanese and Chinese relative clauses with respect to the availability of sloppy interpretation to be further support for SL&M's hypothesis that there is a structural difference in relative clauses between these two languages. For our purpose, this cross-linguistic contrast with respect to the availability of sloppy interpretation provides additional support for the hypothesis that Japanese relative clauses do not trigger NP-ellipsis.

4.3. Summary

We have provided evidence that split and non-linguistic antecedents are allowed in cases with what appears to involve NP-ellipsis with Japanese relative clauses. We have also shown that Japanese relative clauses do not readily allow sloppy interpretation in some cases where NP-ellipsis appears to have taken place. By way of contrast, Chinese relative clauses do permit the interpretation under question in exactly the same context. We therefore conclude that Japanese relative clause do not license NP-ellipsis while their Chinese counterparts can do so. This contrast is straightforwardly accounted for under Simpson/SL&M's proposal.

5. Nominal-Internal Distributive Interpretation

We turn to another argument to support the hypothesis that Japanese relative clauses do not license NP-ellipsis. This time, the argument comes from the availability of nominal-internal distributive interpretation, discussed in Miyamoto (2009).

5.1. Relative Clause-based Analysis of Nominal-Internal Distributive Interpretation

This section begins with an explanation of what nominal-internal distributive interpretation is, along with Miyamoto's (2009) analysis. As with cases with NQs, NQs with *zutsu* can appear in three different positions, as shown in (44):

(44) a. Taroo-ga ni-satsu-zutsu-no hon-o katta (-koto)
-NOM two-CL-DIST-GEN book-ACC bought (-fact)

'Taro and Hanako bought two books each.'

b. Taroo-ga hon ni-satsu-zutsu-o katta (-koto)
-NOM book two-CL-DIST-ACC bought (-fact)

c. Taroo-ga hon-o ni-satsu-zutsu katta (-koto)
-NOM book-ACC two-CL-DIST bought (-fact)

These examples permit various interpretations including (45a) and (45b). Of significance is the fact that (45c) is available only in (44a). Miyamoto names the interpretation in (41c) 'the nominal-internal distributive interpretation.'

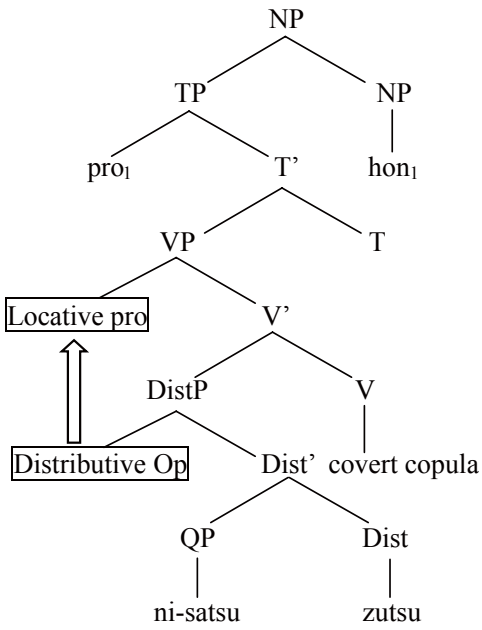
(45) a. Taro bought two books each three weeks ago and last week.

b. Taro bought two books each at the bookstore in New York and the bookstore in Boston.

c. Taro bought the books in twos.

Given the assumption that the distributive affix always requires an element to distribute over in syntax, the nominal-internal distributive interpretation, too, necessitates such an element. Miyamoto claims that, under the interpretation in (45c), the distribution over the covert locative *pro* takes place within the object NP. Given the assumption that locative *pro* is an argument of Tense (with an eventive verb), the presence of locative *pro* requires the presence of TP. This amounts to saying that *ni-satsu-zutsu* 'two-CL-DIST' is a relative clause. Accordingly, the structure of the object NP is as shown in (46):

(46)



Within the relative clause TP, the distributive operator is raised and adjoined to the locative *pro*, which enables the distribution of sets of two books over the locations to be possible.

Miyamoto argues that this relative clause realizes the nominal-internal distributive interpretation in the same way that distributive interpretation is possible in (47) in spite of the fact that there is no overt NP over which distribution of sets of two books can take place.

(47) hon-ga ni-satsu-zutsu da.
book-NOM two-CL-DIST is

'The books are in twos.'

5.2. Over-Generation of Nominal-Internal Distributive Interpretation

Considering that the presence of nominal-internal distributive reading indicates that the NQ-*zutsu* forms a relative clause, we examine (48):

(48) zenzen ure-nai-node, sono-mise-wa, (san-bon-zutsu-no enpitsu-de-wa naku,)
at all sell-not-because that-store-TOP three-CL-DIST-NO pencil-for-TOP not
go-hon-zutsu-no enpitsu-no henkyaku-o kimeta.
five-CL-DIST-NO pencil-GEN return-ACC decided

'That store decided to return the pencils in fives(, not the pencils in threes) because they did not sell well.'

In (48), the intended nominal-internal distributive interpretation is clearly available. This means that *san-bon-zutsu-no* and *go-hon-zutsu-no* form a relative clause in this example.

Now, compare (48) with (49) below:

(49) zenzen ure-nai-node, sono-mise-wa, (san-bon-zutsu-no enpitsu-de-wa naku,)
at all sell-not-because that-store-TOP three-CL-DIST-NO pencil-for-TOP not
go-hon-zutsu-no henkyaku-o kimeta.
five-CL-DIST-NO return-ACC decided

'(intended) That store decided to return the pencils in fives(, not the pencils in threes) because they did not sell well.'

Of significance is the fact that (49) does not allow the intended nominal-internal distributive interpretation. The interpretation salient in this example is that the store decided to return five pencils a time. The question to be raised here is why the intended nominal-internal distributive interpretation is prohibited in this example. This question is particularly important since under the NP-ellipsis-based account, i.e., Takahashi's proposal, we could interpret (49) as having the NP *enpitsu* deleted in (50):

(50) zenzen ure-nai-node, sono-mise-wa, (san-bon-zutsu-no enpitsu-de-wa naku,)
at all sell-not-because that-store-TOP three-CL-DIST-NO pencil-for-TOP not
[go-hon-zutsu-no ~~enpitsu~~] henkyaku-o kimeta.
five-CL-DIST-NO pencil return-ACC decided

The following determines how such an interpretation might be possible.

What needs clarifying in (50) is the status of the *no* attached to *go-hon-zutsu*. Given Takahashi's condition on NP-ellipsis that KP adjuncts must bear Genitive Case when they survive ellipsis, *go-hon-zutsu*, being a relative clause, must receive Genitive Case. Thus, under his proposal, *no* must be an instance of the Genitive Case marker. This is in accordance with Watanabe's (2010) suggestion that the appearance of *no* is regulated by the morphological properties. As acknowledged in SL&M's note 1, cited by Watanabe, *No*-Insertion Rule, shown in (51), is morphological in nature: (-tense) means no overt realization of tense. Accordingly, this results in the contrast between (52a) and (52b):

(51) $[_{NP} \ldots XP(\text{-tense})\ N^{\alpha}]$ $[_{NP} \ldots XP(\text{-tense})\ Mod\ N^{\alpha}]$, where Mod = no

(52) a. Taroo-ga syujinkoo-no monogatari
-NOM protagonist-NO story

'a story in which Taro is the protogonist'

b. Taroo-ga syujinkoo dearu(*-no) monogatari
-NOM protagonist is -NO story

(SL&M: 250)

The same contrast obtains with NQ+*zutsu*, as shown in (53a, b):

(53) a. go-hon-zutsu-no enpitsu
five-CL-DIST-NO pencil

'the pencils in fives'

b. go-hon-zutsu dearu(*-no) enpitsu
five-CL-DIST are -NO pencil

We might then assume that *go-hon-zutsu* is subject to (51) and the Genitive Case marker, *no*, is attached to this relative clause.

Furthermore, provided that the overt/covert distinction plays a crucial role in (51), if the NP *enpitsu* is elided, there seems no reason to supply *no* to this deleted NP. This is parallel to the fact that (54b), but not (54c), can follow (54a):[11]

[11] Based on the contrast between (ia) and (ib), Watanabe (2010) suggests that when two linking elements exist, one of them must be deleted.

(i) a. go-nin-no mendoo-o mi-nakerebanaranai.
five-CL-NO care-ACC see-must

'I have to take care of five (students)'

(54) a. Taroo-wa Hanako-no sankoosyo-o karita.
-TOP -NO reference book-ACC borrowed

'Taro borrowed Hanako's reference book.'

b. Taroo-wa (kanojyo-no) nooto-mo karita.
-TOP her -NO notebook-also borrowed

'Taro borrowed her notebook.'

c. * Taroo-wa-no nooto-mo karita.
-TOP-NO notebook-also borrowed

Accordingly, under the NP-ellipsis-based account, (48) should be changed to (49) with the relative head elided, as shown in (50). Since *go-hon-zutsu-no* constitutes a relative clause, we now incorrectly predict that the nominal-internal distributive interpretation be available with the word order sequence given in (49) as well as in (48). Accordingly, the fact that the intended distributive reading is absent in (49) provides another argument against Takahashi's NP-ellipsis-based account.[12]

---

b. *go-nin-no-no mendoo-o mi-nakerebanaranai.
five-CL-NO-NO care-ACC see-must

[12] Notice that the intended nominal-internal distributive interpretation is available in (i):

(i) zenzen ure-nai-node, sono-mise-wa, (san-bon-zutsu-no-de-wa naku,)
at all sell-not-because that-store-TOP three-CL-DIST-one-for-TOP not
go-hon-zutsu-no-no henkyaku-o kimeta.
five-CL-DIST-one-GEN return-ACC decided

'That store decided to return the ones in fives(, not the ones in threes) because they did not sell well.'

It is not clear from Takahashi's discussion whether he allows the pronoun *no* to appear in this particular example. Conversely, under SL&M, a relative clause, being adjoined to NP, should be able to license pronoun *no*, as noted in Section 3.1: accordingly, *go-hon-zutsu* can form a relative clause in (i) with the structure in (ii) below, and this example permits the nominal-internal distributive interpretation.

(ii) [$_{NP}$ [$_{NP}$ [$_{RC}$ go-hon-zutsu]-no]-no henkyaku]
five-CL-DIST-NO-NO return

The *no* that attaches to the relative clauses is an instance of pronominal *no*. Here the *NO*-reduction rule (Kamio 1983) deletes the Genitive *no*, attached to the relative clause, as illustrated in (iii):

(iii) [$_{NP}$ [$_{RC}$ go-hon-zutsu]-~~no~~ no]

Then, the Genitive Case marker *no* is attached to this NP, due to the *NO*-Insertion Rule in (51). In (i), in contrast to (49), therefore, *go-hon-zutsu* can behave as a relative clause; accordingly, the intended interpretation is correctly expected.

Under SL&M, by way of comparison, since NP-ellipsis is not possible with relative clauses, thus with *go-hon-zutsu*, (49) cannot be understood to involve the elision of the NP *enpitsu*. In addition, the floating quantifier option is also excluded in this particular context, given the fact that numeral floating quantifiers in general cannot appear inside the nominal projection. For instance, (55b) is ungrammatical, in contrast to (55a):

(55) a. Taroo-wa sankoosyo-o san-satsu katta.
-TOP reference book-ACC three-CL bought

'Taro borrowed Hanako's reference book.'

b. *Taroo-wa sankoosyo-no (san-satsu(-no)) henkyaku-o shita.
-TOP reference book-NO three-CL (-NO) return-ACC did

'Taro returned three reference books.'

Consequently, among the three positions for an NQ with *zutsu* in (44), (49) must be understood as (56) under SL&M:

(56) zenzen ure-nai-node, sono-mise-wa, (san-bon-zutsu-no enpitsu-de-wa naku,)
at all sell-not-because that-store-TOP three-CL-DIST-NO pencil-for-TOP not
[*pro* go-hon-zutsu]-no henkyaku-o kimeta.
five-CL-DIST-NO return-ACC decided

'(intended) That store decided to return the pencils in fives(, not the pencils in threes) because they did not sell well.'

(56) enables a variety of interpretations, but not the nominal-internal distributive interpretation. One possible interpretation is of the distribution of sets of five pencils over times. Crucially, SL&M's proposal correctly predicts the absence of the nominal-internal distributive interpretation in (49).

5.3. Summary

This section has shown that if relative clauses could trigger NP-ellipsis, the nominal-internal distributive interpretation would be over-generated in sentences such as (49). Under SL&M, what appears to be a case with NP-ellipsis is a case with the schematic structure given in (57):

(57) [$_{DistP}$ Distributive Op [$_{Dist'}$ [$_{QP}$ *pro* NQ]-zutsu]]-Case Marker

Under Miyamoto (2009), this structure correctly predicts the absence of the nominal-internal distributive interpretation.

The fact that the positions available for NQs-*zutsu* are equated to those of NQs implies that what appears to involve NP-ellipsis triggered by a NQ is also an instance of the schematic structure given in (58a) in examples like (58b):

(58) a. [$_{QP}$ [$_{Q'}$ *pro* NQ]]-Case Marker

b. [go-nin-no five-CL-GEN mendoo]-o care-ACC mi-nakerebanaranai. see-must

'I have to take care of five.'

(Watanabe 2010: 65)

However, the detailed examination of such cases is beyond the scope of this paper, and leaves issues relating to the possibility of QP-triggered NP-ellipsis for future research.[13]

6. Kamio's (1983) Condition on Pronominal *NO*

The arguments presented in the previous two sections lead to the conclusion that relative clauses cannot trigger NP-ellipsis and the *no* attached to the relative clause in Takahashi's examples must be analyzed as the pronominal *no*. However, and importantly, Takahashi uses abstract nouns for the target of NP-ellipsis, assuming Kamio's (1983) condition that states that an abstract noun cannot be replaced by the pronominal *no*. According to Takahashi, therefore, his examples must have involved NP-ellipsis. The purpose of the current section is to reexamine the properties of nouns Takahashi assumes are abstract nouns, and suggests that nothing prevents the pronominal *no* from appearing in Takahashi-type examples.

Kamio (1983) proposes that the pronominal *no* can stand for concrete nouns, but not for abstract nouns. Kamio gives the following examples to illustrate this generalization:

(59) a. [$_{RC}$ katai firm sinnen-o conviction-ACC motta] had hito person

'the person with a firm conviction'

b. *[$_{RC}$ katai firm no-o one-ACC motta] have hito person

'(intended) the one with a firm conviction'

In (59b), the abstract noun *sinnen* 'conviction' is replaced by the pronominal *no*, and this NP/DP is ungrammatical.

Based on Kamio's (1983) restriction on the pronominal *no*, S&M provide examples with an abstract noun for the target of ellipsis. They thus ensure that their examples are genuine instances of NP-ellipsis. One instance in (30), repeated here as (60), is where the abstract noun *hihan* 'criticism' is used.

[13] See Ochi (2012), S&M, SL&M, Takahashi (2011), and Watanabe (2010) for discussion on the availability of NP-ellipsis to be triggered by numeral quantifiers.

(60) [Taroo-no [jibun-no shinyuu]-no hihan]-wa ii ga,
-GEN self-GEN close friend-GEN criticism-TOP is good though
[Jiroo-no *e*]-wa yoku-na-i.
-GEN -TOP is not good

'Taro's criticisms of his own close friend is good, but Jiro's is not.'

Given Kamio's condition, *no* of *Jiroo-no* must be understood as the Genitive Case marker, not the pronominal *no*; NP-ellipsis must have taken place in (60).

In contrast, since relative clauses cannot trigger NP-ellipsis, the pronominal *no* is the only option available in (61b), derived from (61a):

(61) a. [[Hanako-ga sensei-ni miseta] taido]-wa ii ga,
-NOM teacher-to showed attitude-TOP good though
[[Taroo-ga (sensei-ni) miseta] taido]-wa yoku nai.
-NOM (teacher-to) showed attitude-TOP good not

'The attitude with which Hanako showed to her teacher is good, but the attitude with which Taro showed to his teacher is not good.'

b. *[[Hanako-ga sensei-ni miseta] taido]-wa ii ga,
-NOM teacher-to attend attitude-TOP good though
[[Taroo-ga (sensei-ni) miseta]-no]-wa yoku nai.
-NOM (teacher-to) attend-NO-TOP good not

However, the abstract noun *taido* 'attitude' cannot be replaced by the pronominal *no* in this example, due to Kamio's condition. As a result, (61b) is ungrammatical.

Now, the question is why (7b) and (8b), repeated here as (62b) and (63b), are grammatical in spite of the fact that the abstract nouns *syujyutsu* 'operation' and *kankei* 'relation' are used.

(62) a. [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru] syujyutsu]-wa kanari muzukashii.
is planned operation-TOP very difficult

'(lit.) The operation that was done yesterday was simple, but the operation that is planned today is very difficult.'

b. [[kinoo okonawareta] syujyutsu]-wa kantan datta ga, [[kyoo
yesterday was done operation-TOP simple was though today
yoteisareteiru]-no]-wa kanari muzukashii.
is planned-NO-TOP very difficult

(63) a. [[amerika-ga nihon-to kizuita] kankei]-wa ryookoo da ga,
America-NOM Japan-with built relation-TOP good is though
[[*pro* tyuugoku-to kizukoo-to shiteiru] kankei]-wa saki-ga
China-with relation-with trying to build relation-TOP future-NOM
futoomei da.
unclear is

'The relation that the United States built with Japan has been good, but the relation that she is trying to build with China is unclear about its future.'

b. ?[[amerika-ga nihon-to kizuita] kankei]-wa ryookoo da ga,
America-NOM Japan-with built relation-TOP good is though
[[*pro* tyuugoku-to kizukoo-to-shiteiru]-no]-wa saki-ga
China -with trying to build-NO-TOP future-NOM
futoomei da.
not obvious is

In this regard, Quirk, Greenbaum, Leech, and Svartvik's (1985: 299) view that " But some [abstract non-count nouns] can be reclassified as count nouns where they refer to an instance of a given abstract phenomenon." appears most relevant; consider, for example, Franklin D. Roosevelt's 1941 Sate of the Union Address, proposing 'four freedoms.' Similarly, (64) can follow (62b) or (63b):

(64) [sono futa-tsu-no syujyutsu/kankei]-wa seishitsu-ga mattaku
this two-CL-GEN operation/relation-TOP characteristics-NOM quite
kotonaru-kara da.
different-because is

'This is because these two operations/relations are quite different in nature.'

(64) shows that *syujyutsu* and *kankei* are counted, and thus, it is quite reasonable that these nouns represent instances. (63b), for instance, refers to two particular instances of relation between nations, and these two instances are compared (Kinsui 1994). Roosevelt's address and (64), therefore, confirm that when an abstract noun refers to a particular instance of the property under question, the noun no longer behaves as a typical abstract noun. In short, examples such as (62b) and (63b) may not serve as typical examples involving an abstract noun. If so, it is perhaps unsurprising that the pronominal *no* can appear in these examples; if true, these examples do not constitute counter-evidence to SL&M's proposal

Notice that in (61b), *taido* 'attitude' does not refer to particular 'instances' associated with this particular concept; accordingly, in contrast to (64), (65) is unacceptable, following (61b):

(65) *[sono futa-tsu-no taido]-wa seishitsu-ga mattaku
this two-CL-GEN attitude-TOP characteristics-NOM quite
kotonaru-kara da.
different-because is

'(lit.) This is because these two attitudes are quite different in nature.'

We therefore consider *taido* in (61b) as a genuine instance of abstract nouns. As a result, given Kamio's condition, the pronominal *no* is not allowed in this example, as shown above.

Importantly, the contrast between (61b) on the one hand, and (62b) and (63b) on the other poses a problem for Takahashi's NP-ellipsis account. For Takahashi, since all the examples contain 'abstract' nouns, there is no obvious reason why the intended NP-ellipsis cannot take place in (61b); the ellipsis under question should be uniformly permitted in all three examples, contrary to fact. Accordingly, the ungrammaticality of (61b) constitutes our third argument supporting SL&M's proposal based on Kamio's condition on concrete/abstract distinction of nouns. Within the hypothesis that the *no* attached to a relative clause is the pronominal *no*, there is a means to understand Takahashi's examples as well as examples containing a genuine abstract noun, although the question of how to account for the notion of 'instances' remains open for future research (see, for example, Givon 1993; Guillemin-Flescher 1999).

7. Concluding Remarks

This paper provides three arguments in support of SL&M's proposal on NP-ellipsis in Japanese: (i) the availability of split and non-linguistic antecedents, and the difficulty of obtaining the sloppy interpretation in some cases; (ii) the over-generation of the nominal-internal distributive interpretation in a certain context; and (iii) the relevance of the concrete/abstract distinction on the pronominal *no*. First, in addition to the availability of split and non-linguistic antecedents, Japanese relative clauses, in contrast to their Chinese counterparts, do not easily permit sloppy readings that should be available if NP-ellipsis is involved. This fact is naturally accounted for, given SL&M's proposal under which Chinese, but not Japanese, relative clauses are of the Kaynean type. Second, in a particular context, the nominal-internal distributive interpretation, which requires the NQ+*zutsu* to form a relative clause, is not available without an overt relative head. Under Takahashi's proposal, this fact is very difficult, if not impossible, to explain since the NQ+*zutsu*, being a relative clause, can trigger NP-ellipsis and the relative head can be elided. Third, in Takahashi's examples that he claims involve an abstract noun as the target of NP-ellipsis, the noun under question is not a typical instance of abstract nouns. This paper, accordingly, suggests that Takahashi does not succeed in excluding the possibility that the *no* involved in his examples is the pronominal *no*. In addition, in cases where a 'pure' abstract noun is used, the relative clause, in fact, cannot be accompanied by *no*, as predicted under Kamio's condition. SL&M's proposal, again, correctly captures this contrast between pure abstract nouns and abstract nouns in disguise.

One issue, left for future research, is on the contrasts between Tokyo dialect and dialects spoken in western Japan. In some of Kyushu dialects, the Genitive Case marker *no* is realized as *n(o)*, whereas the pronominal *no* appears as *to*. Given the conclusion that *-no* attached to the relative clause is the pronominal *no*, we expect that relative clauses should be accompanied with *to*, but not *n(o)*. This prediction seems to be borne out, as shown in the contrast between (66), Tokyo dialect, and (67), Nagasaki dialect:

(66) a. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no otooto]-no
-TOP -in was published self-GEN young brother-GEN
ronbun]]-ga ichiban da]-to omotteiru.
paper-NOM best is-that think

'Jiro thinks that his own younger brother's paper that was published in JEAL is the best.'

b. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no otooto]-no]]-ga
-TOP -in was published self-GEN young brother-NO-NOM
ichiban da]-to omotteiru.
best is-that think

c. Jiroo-wa [[[JEAL-ni keisai-sareta]-no]-ga ichiban da]-to omotteiru.
-TOP -in was published-NO-NOM best is-that think

(67) a. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no otooto]-n
-TOP -in was published self-GEN young brother-GEN
ronbun]]-ga ichiban ya]-to omottoru.
paper-NOM best is-that think

'Jiro thinks that his own younger brother's paper that was published in JEAL is the best.'

b. Jiroo-wa [[[JEAL-ni keisai-sareta] [[jibun-no otooto]-n**-to**]]-ga
-TOP -in was published self-GEN young brother-NO-one-NOM
ichiban ya]-to omottoru.
best is-that think

c. Jiroo-wa [[[JEAL-ni keisai-sareta]**-to**]-ga ichiban ya]-to omottoru.
-TOP -by was published-one-NOM best is-that think

(67c) certainly suggests that the direction we pursued in this paper is promising. However, we admit that there are some dialectal or idiolectal differences among native speakers of these dialects. Therefore, any decisive conclusion must wait for further study.

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ARGUMENT ELLIPSIS IN ACQUISITION *

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1. Introduction

Japanese is a language that allows productive use of null arguments in finite clauses. In (2), which constitutes replies to the question in (1), either the matrix subject or the matrix object is not overtly expressed. Similarly, in (3), both the subject and the object of the embedded clause are phonologically empty.

(1) Taroo-wa doo shimashita ka?
Taroo-TOP how did Q

'What happened to Taroo?'

(2) a. *e* ano kaisya-ni syuusyoku shimashita.
that company-DAT employment did

'He got employed by that company.'

b. Ano kaisya-ga *e* saiyou shimashita.
that company-NOM recruitment did

'That company recruited him.'

(3) Hanako-ga Taroo-ni [*e* *e* saiyou suru to] yakusokusita.
Hanako-NOM Taroo-DAT recruitment do that promised

'Hanako promised Taroo that she will recruit him.'

It has been observed at least since Otani and Whitman (1991) that null objects in Japanese allow sloppy-identity interpretation when their antecedent contains the anaphor *zibun* 'self'. For example, the sentence with an empty object in (4b) is ambiguous: It means either that Ken respects Taroo's mother (strict-identity interpretation) or that Ken respects his

* I would like to thank Ayaka Kashitani, Yusuke Suzuki, Hajime Takeyasu, and Etsuko Yoshida for their help in conducting the experiments reported in this study. I am grateful to Keiko Murasugi, Koichi Otaki, Mamoru Saito, Daiko Takahashi, and Kensuke Takita for valuable comments. The usual disclaimers apply. This study was supported in part by the grant from the Japanese Ministry of Education and Science to the Center for Linguistics at Nanzan University for establishment of centers for advanced research in private universities (International Collaborative Research Project on Comparative Syntax and Language Acquisition), as well as by the Grant-in-Aid for Young Scientists (B) (#23720248) awarded to the author.

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own mother (sloppy-identity interpretation). Oku (1998) observes that the same is true with null subjects: The missing embedded subject in (5b) can be construed either as Taroo's child or as Ken's own child.[1]

(4) a. Taroo-wa zibun-no hahaoya-o sonkeisiteiru.
Taroo-TOP self-GEN mother-ACC respect

'Taroo$_1$ respects his$_1$ mother.'

b. Ken-mo *e* sonkeisiteiru.
Ken-also respect

Lit. 'Ken respects *e* , too.'

(5) a. Taroo-wa [zibun-no kodomo-ga eigo-o hanasu to]
Taroo-TOP self-GEN child-NOM English-ACC speak that
omotteiru.
think

'Taroo$_1$ thinks that his$_1$ child speaks English.'

b. Ken-wa [*e* furansugo-o hanasu to] omotteiru.
Ken-TOP French-ACC speak that think

Lit. 'Ken thinks that *e* speaks French.'

In order to account for the availability of sloppy interpretation, a number of syntactic studies have proposed that Japanese permits ellipsis of argument DPs (e.g. Oku 1998; Saito 2003, 2007; Takahashi 2008). According to this 'Argument Ellipsis' analysis, the sloppy interpretations for (4b) and (5b) stem from the structures containing full-fledged DPs, and these argument DPs are elided under identity with their antecedent DPs, as shown in (6b) and (7b).

(6) a. Taroo-wa zibun-no hahaoya-o sonkeisiteiru.
Taroo-TOP self-GEN mother-ACC respect

b. Ken-mo ~~zibun-no hahaoya-o~~ sonkeisiteiru.
Ken-also self-GEN mother-ACC respect

(7) a. Taroo-wa [zibun-no kodomo-ga eigo-o hanasu to]
Taroo-TOP self-GEN child-NOM English-ACC speak that
omotteiru.
think

[1] The same observation holds for null subjects and null objects in Korean. See Kim (1999) and Saito and An (2010) for a detailed discussion.

b. Ken-wa [~~zibun-no kodomo-ga~~ furansugo-o hanasu to]
Ken-TOP self-GEN child-NOM French-ACC speak that
omotteiru.
think

This study demonstrates experimentally that Japanese-speaking preschool children permit the sloppy-identity interpretation both for null subjects and null objects, thereby suggesting that the knowledge of Argument Ellipsis is already in their grammar. This finding will be further corroborated by the experimental observation that, in contrast to arguments, children do not permit ellipsis of adjuncts. In addition, it will also be demonstrated experimentally that children do not allow *wh*-phrases to undergo Argument Ellipsis. These findings together point to the conclusion that Japanese-speaking preschool children already have completely adult-like knowledge of Argument Ellipsis, which is consistent with the view that the availability of Argument Ellipsis and its constraints directly follows from the properties of biologically-determined Universal Grammar (UG).

This paper is organized as follows. In Section 2, we overview evidence for postulating Argument Ellipsis in Japanese, and in Section 3, we summarize two major approaches to the cross-linguistic variation in Argument Ellipsis. In Section 4, we draw a certain prediction from these parametric proposals for the acquisition of Argument Ellipsis, and in Section 5 and 6, we evaluate this prediction by conducting an experiment. Section 7 reports results of an experiment investigating children's knowledge of the constraint that adjuncts cannot undergo ellipsis, and Section 8 is dedicated to the experiment examining children's knowledge of the ban on eliding *wh*-phrases. Section 9 briefly concludes the discussion.

2. Argument Ellipsis in Japanese

The availability of sloppy interpretation for an empty object is unexpected if the object position is occupied by a null pronoun *pro*, since pronouns typically do not permit sloppy-identity interpretation, as exemplified in (8b).

(8) a. Taroo-ga zibun-no konpyuutaa-o kowasita.
Taroo-NOM self-GEN computer-ACC destroyed

'Taroo$_1$ destroyed his$_1$ computer.'

b. Hanako-mo sore-o kowasita.
Hanako-also it-ACC destroyed

'Hanako$_2$ also destroyed his$_1$ computer.' /
* 'Hanako$_2$ also destroyed her$_2$ computer.'

In order to account for the availability of sloppy interpretation for null objects in Japanese, Otani and Whitman (1991) built on Huang's (1991) study on Chinese null objects, and put forth the analysis in which the relevant interpretation of (8b) stems from VP-ellipsis. One of

the fundamental assumptions of their analysis is that Japanese has overt V-to-T raising, and hence the sentences in (8) are represented as in (9) in overt syntax.[2] In the LF component, the antecedent VP is copied onto the empty VP, yielding (10b), which contains an anaphor in its object position as well. The LF representation in (10b) accounts for the sloppy interpretation of the sentence involving a null object in (8b).

(9) *In Overt Syntax:*

a. [$_{TP}$ John-ga [$_{T'}$ [$_{VP}$ zibun-no konpyuutaa-o t_V] [$_{T}$ kowasi$_V$-ta$_T$]]]
John-NOM self-GEN computer-ACC destroyed

b. [$_{TP}$ Mary-mo [$_{T'}$ [$_{VP}$ *e*] [$_{T}$ kowasi$_V$-ta$_T$]]]
Mary-also destroyed

(10) *In the LF Component:*

a. [$_{TP}$ John-ga [$_{T'}$ [$_{VP}$ zibun-no konpyuutaa-o t_V] [$_{T}$ kowasi$_V$-ta$_T$]]]
John-NOM self-GEN computer-ACC destroyed

b. [$_{TP}$ Mary-mo [$_{T'}$ **[$_{VP}$ zibun-no konpyuutaa-o t_V]** [$_{T}$ kowasi$_V$-ta$_T$]]]
Mary-also self-GEN computer-ACC destroyed

Even though the VP-ellipsis analysis successfully explains why null objects in Japanese permit sloppy interpretations, it faces a variety of problems (see Hoji 1998, Oku 1998, Saito 2007, and Takahashi 2008). Most notable is the observation by Oku (1998) that even null subjects allow the sloppy-identity reading, as already illustrated in (5) and repeated here as (11). Given that subjects arguably stay outside of VP in overt syntax and in LF, the VP-ellipsis analysis by Otani and Whitman (1991) would predict that the sloppy interpretation should not be possible with null subjects, contrary to facts.

(11) a. Taroo-wa [zibun-no kodomo-ga eigo-o hanasu to]
Taroo-TOP self-GEN child-NOM English-ACC speak that
omotteiru.
think

'Taroo$_1$ thinks that his$_1$ child speaks English.'

b. Ken-wa [*e* furansugo-o hanasu to] omotteiru.
Ken-TOP French-ACC speak that think

'Ken$_2$ thinks that his$_1$ child / his$_2$ child speaks French.'

In order to accommodate both the null-object examples as in (4) and the null-subject examples as in (5), Oku (1998), Saito (2003, 2007) and Takahashi (2008) (among others) put

[2] For a detailed discussion of why some languages permit ellipsis of such 'headless' phrases but others don't, see Funakoshi (2012).

forth an alternative analysis in which only the relevant argument DP (not the VP) is elided. Under their Argument Ellipsis analysis, the sentences in (11) have the representations in (12) in overt syntax. After the derivation enters into LF, the antecedent DP, namely the anaphoric subject in (12a), is copied onto the empty subject position in (12b), resulting in the LF representation in (13b), which successfully yields the sloppy interpretation of the null subject.

(12) *In Overt Syntax:*

a. Taroo-wa [$_{CP}$ [$_{DP}$ zibun-no kodomo-ga] [$_{T'}$ eigo-o hanasu]
Taroo-TOP self-GEN child-NOM English-ACC speak
to] omotteiru.
that think

b. Ken-wa [$_{CP}$ [$_{DP}$ *e*] [$_{T'}$ furansugo -o hanasu]
Ken-TOP French-ACC speak
to] omotteiru.
that think

(13) *In the LF Component:*

a. Taroo-wa [$_{CP}$ [$_{DP}$ zibun-no kodomo-ga] [$_{T'}$ eigo-o hanasu]
Taroo-TOP self-GEN child-NOM English-ACC speak
to] omotteiru.
that think

b. Ken-wa [$_{CP}$ **[$_{DP}$ zibun-no kodomo-ga]** [$_{T'}$ furansugo -o hanasu]
Ken-TOP self-GEN child-NOM French-ACC speak
to] omotteiru.
that think

3. Approaches to the Parametric Variation in Argument Ellipsis

Oku (1998) observes that the availability of Argument Ellipsis is subject to cross-linguistic variation: Argument Ellipsis is permitted in Japanese but is not allowed in languages like Spanish or English.[3] As illustrated in (14b), Spanish permits null subjects, but these null subjects do not have sloppy interpretation: (14b) only means that Juan believes that Maria's proposal will be accepted, and it never means that Juan believes that Juan's proposal will be accepted. In the English example (15), which contains a verb that optionally allow an empty object, the second clause simply means that John did some eating activity, and never permits sloppy reading.

[3] See also Takahashi (2007) for a detailed cross-linguistic survey concerning the availability of Argument Ellipsis.

(14) Spanish (Oku 1998:305):

a. Maria cree [que su propuesta será aceptada] y
Maria believes that her proposal will-be accepted and

'Maria$_1$ believes that her$_1$ proposal will be accepted and …'

b. Juan también cree [que _____ será aceptada].
Juan too believes that will-be accepted

'Juan$_2$ also believes that her$_1$ proposal will be accepted.'
* 'Juan$_2$ also believes that his$_2$ proposal will be accepted.'

(15) English (Oku 1998:311):
Bill$_1$ ate his$_1$ shoe, and John ate, too.

To account for the cross-linguistic difference between Japanese (and Korean) on one hand and English and Spanish on the other, Oku (1998) and Takahashi (2008) proposed that the availability of Argument Ellipsis in a given language is tightly connected to the availability of (Japanese-type) scrambling.[4] According to this "scrambling approach", both of these properties stem from the parameter proposed by Bošković and Takahashi (1998), which can be called the Parameter of θ-feature Strength.

(16) The Parameter of θ-feature Strength: θ-features are {strong, weak}.

Bošković and Takahashi (1998) argue that θ-features of a verb are weak in Japanese, while they are strong in non-scrambling languages like English and Spanish. Given their weak nature, θ-features of Japanese verbs need not be checked in overt syntax. This property of Japanese makes it possible for an argument to be base-generated in a 'scrambled' position, as shown in (17a). In the LF component, the 'scrambled' object undergoes a lowering operation and merges with the predicate, in order to check the selectional features of the verb.

(17) a. *In Overt Syntax:*

[$_{TP}$ Ken-o [$_{TP}$ Taroo-ga [$_{CP}$ Hanako-ga [$_{VP}$ sikatta] to] itta]]
Ken-ACC Taroo-NOM Hanako-NOM scolded that said
Lit. 'Ken, Taroo said that Hanako scolded.'

b. *In the LF Component:*

[$_{TP}$ ___ [$_{TP}$ Taroo-ga [$_{CP}$ Hanako-ga [$_{VP}$ **Ken-o** sikatta] to] itta]]
Taroo-NOM Hanako-NOM Ken-ACC scolded that said

Such a derivation is not available in English or Spanish, since θ-features in these languages are strong and hence they must be checked in overt syntax soon after verbs are introduced into the derivation.

[4] See also Saito (2003) for a related proposal.

Building on Bošković and Takahashi's LF analysis of scrambling, Oku (1998) and Takahashi (2008) argue that the possibility of Argument Ellipsis in Japanese also follows from the weakness of θ-features. Since θ-features of Japanese verbs need not undergo checking in overt syntax, an argument position can be literally absent in Japanese, as shown in (18). In the LF component, the sentence in (18b) comes to have a licit transitive configuration through the LF-copying of an antecedent DP, as shown in (19b).

(18) *In Overt Syntax:*

a.	Taroo-ga	[$_{VP}$ [$_{DP}$	zibun-no	konpyuutaa-o]	kowasita.	]
	Taroo-NOM		self-GEN	computer-ACC	destroyed	

'Taroo$_1$ destroyed his$_1$ computer.'

b.	Hanako-mo	[$_{VP}$ [$_{DP}$	*e*	]	kowasita.	]
	Hanako-also				destroyed	

(19) *In the LF Component:*

a.	Taroo-ga	[$_{VP}$ [$_{DP}$	zibun-no	konpyuutaa-o]	kowasita.	]
	Taroo-NOM		self-GEN	computer-ACC	destroyed	

LF Copy

b.	Hanako-mo	[$_{VP}$ [$_{DP}$	**zibun-no**	**konpyuutaa-o**]	kowasita.	]
	Hanako-also		self-GEN	computer-ACC	destroyed	

This way, Oku (1998) and Takahashi (2008) attribute both the availability of scrambling and that of Argument Ellipsis to a single parametric property of Japanese: the property that θ-features are weak.

In contrast, building on Kuroda's (1988) proposal that the main source of the various differences between English and Japanese is the presence vs. absence of obligatory agreement, Saito (2007) claims that Argument Ellipsis in Japanese stems from the absence of overt agreement in this language. This "anti-agreement approach" adopts Chomsky's (2000) system of agreement, in which agreement is a probe-goal relation induced by a set of uninterpretable φ-features on the functional heads of T and *v*. In the case of object agreement illustrated in (20), the uninterpretable φ-features of *v* agree with the matching, interpretable φ-set of the object DP. The object satisfies the condition that the goal must have an uninterpretable Case feature (the Activation Condition), and hence qualifies as a goal. The agreement relation results in the deletion of the uninterpretable φ-features on *v* and the uninterpretable Case feature of the DP.

(20) a. … [$_{vP}$ $v_{\{u\varphi\}}$ [$_{VP}$ V $DP_{\{i\varphi,\ uCase\}}$]]

b. … [$_{vP}$ $v_{\{\sout{u\varphi}\}}$ [$_{VP}$ V $DP_{\{i\varphi,\ \sout{uCase}\}}$]]

Saito (2007) argues that the agreement relation illustrated above is obligatory in languages like English and Spanish, and that this obligatory nature of agreement excludes Argument Ellipsis from these languages. For example, the derivation of the English examples in (21) proceeds as shown in (22). The object DP *his friend* in (21a) must be copied into the object position of (21b) for the latter sentence to be properly interpreted. If we assume that only LF objects can be employed in LF-copying, the DP *his friend* must be copied into (21b) from the LF representation of (21a).[5] However, this DP has already agreed with its *v* in (21a) and hence, the uninterpretable Case feature that rendered this DP active has already been deleted. Then, given the Activation Condition, it does not qualify as a goal in the required Agree relation in (21b), and consequently, the derivation crashes due to the remaining uninterpretable φ-features of *v*.

(21) a. John brought [$_{DP}$ his friend].

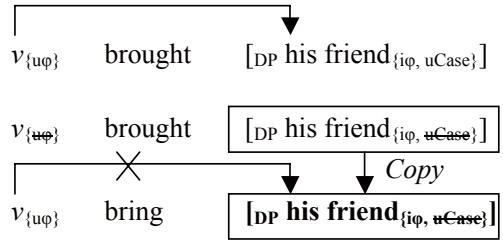
b.* But Bill did not bring _____.

(22) Derivation:

a. *In Overt Syntax:* John [$_{vP}$ $v_{\{u\varphi\}}$ brought [$_{DP}$ his friend$_{\{i\varphi,\ uCase\}}$]].

b. *At LF*: John [$_{vP}$ $v_{\{u\varphi\}}$ brought [$_{DP}$ his friend$_{\{i\varphi,\ \sout{uCase}\}}$]].

c. *In Overt Syntax:* Bill did not [$_{vP}$ $v_{\{u\varphi\}}$ bring **[$_{DP}$ his friend$_{\{i\varphi,\ \sout{uCase}\}}$]**].



The corresponding derivation converges in Japanese, however, given that Japanese lacks overt agreement, which, according to Saito (2007), indicates that the uninterpretable φ-features on T and *v* are optional in this language. The derivation of the Japanese examples in (23) proceeds as shown in (24). In (23), the object DP *zibun-no tomodati* 'self's friend' is copied from the LF representation of (23a) into the object position of (23b), as in (24c). Since φ-features on a functional head are optional, *v* in (23b) need not have uninterpretable φ-features. Thus, the object DP in (23a) can be successfully copied into (23b) even though its uninterpretable Case feature has already been deleted, and the derivation converges.

(23) a. John-wa [$_{DP}$ zibun-no tomodati-o] tureteki ta.
John-TOP self-GEN friend-ACC brought

'John$_1$ brought his$_1$ friend.'

b. Demo Mary-wa _____ tureteko-nakatta.
but Mary-TOP brought-not

'But Mary$_2$ did not bring her$_2$ friend.'

[5] See Saito (2007) for evidence that only LF objects can be employed in the LF-copying operation involved in Argument Ellipsis.

(24) Derivation:

a. *In Overt Syntax:* *Agree*

John-wa [vP [DP zibun-no tomodati-o$_{\{i\varphi,\ uCase\}}$] turetekita $v_{\{u\varphi\}}$].
John-TOP self-GEN friend-ACC brought

b. *At LF:*

John-wa [vP [DP zibun-no tomodati-o$_{\{i\varphi,\ \sout{uCase}\}}$] turetekita $v_{\{\sout{u\varphi}\}}$].
John-TOP self-GEN friend-ACC brought

c. *In Overt Syntax:* *Copy*

Mary-wa [vP **[DP zibun-no tomodati-o$_{\{i\varphi,\ \sout{uCase}\}}$]** tureteko-nakatta $v_{\{\ldots\}}$].
Mary-TOP **self-GEN friend-ACC** brought-not

To summarize this section, we have reviewed two major proposals concerning the parametric variation in Argument Ellipsis. The scrambling approach, adopted by Oku (1998) and Takahashi (2008), proposed that the existence of Argument Ellipsis in Japanese and its absence in English and Spanish are correlated with the availability of (Japanese-type) scrambling. In contrast, developing the idea of Kuroda (1998), Saito (2007) proposed the anti-agreement approach, which claimed that the possibility of Argument Ellipsis in Japanese is closely tied to the absence of overt agreement in this language.[6] Even though these proposals significantly differ in their details, they share the fundamental assumption that a parameter of UG establishes a tight connection between the availability of Argument Ellipsis and other prominent properties of Japanese.[7] The experiments to be discussed in Section 5 and 6 attempt to evaluate this basic insight of their proposals, by investigating the acquisition of Japanese.

4. Prediction for Child Japanese

As we have seen in the previous section, theoretical studies on Japanese syntax suggest that Argument Ellipsis is closely tied to other prominent characteristics of Japanese, such as

[6] Şener and Takahashi (2010) provide further support for Saito's (2007) anti-agreement approach by showing that in Turkish, only subjects (but not objects) resist Argument Ellipsis, which is expected in light of the observation that only subjects agree with predicates in finite clauses. Otaki et al. (in press) also confirm the validity of this approach by demonstrating that in a Mayan language called Kaqchikel, which exhibits overt subject and object agreements, neither null subjects nor null objects permit sloppy interpretation.

In contrast, null subjects in languages like Javanese, Bangla, and Hindi seem to disallow sloppy interpretation, despite the absence of overt agreement between the subject DPs and the predicates. See Sato (2012) and Simpson et al. (under review) for a detailed discussion.

See also Kitahara (2011) for conceptual problems of Saito's (2007) anti-agreement approach, and an alternative, agreement-based approach to the cross-linguistic variation in Argument Ellipsis.

[7] See Otaki (2012) for an approach that relates the availability of Argument Ellipsis to the absence of fusional case morphology.

scrambling or the lack of overt agreement. Previous acquisition literature reports that both scrambling and agreement are acquired fairly early, at least by the age of three. For example, using an act-out task, Otsu (1994) investigated whether Japanese-speaking three- and four-year-olds can correctly interpret scrambled sentences as in (25b). The results showed that young children had virtually no difficulty in understanding scrambled sentences, once the discourse context was provided by adding a sentence as in (25a).[8]

(25) a. Kooen-ni ahirusan-ga imashita.
park-in duck-NOM was

'There was a duck in the park.'

b. Sono ahirusan-o kamesan-ga osimashita.
the duck-ACC turtle-NOM pushed

'A turtle pushed the duck.'

Hyams (2002) summarizes the results of various acquisition studies, and observes that children acquiring "rich" agreement languages such as Italian and Catalan obey subject-verb agreement requirements from the earliest stage (before or around the age of two), even before they produce all the forms in a paradigm. For example, singular verb morphology is typically acquired before plural morphology, and first- and third-person forms appear earlier than second-person forms. Nevertheless, agreement is almost always correct for those forms that are used. According to Hyams (2002), across children and languages, agreement errors are under 4%, as shown in Table 1. Given the finding that agreement errors are extremely rare in the acquisition of "rich" agreement languages, we can reasonably speculate that children acquiring agreementless languages like Japanese would also be sensitive to the absence of overt agreement from the early stages of acquisition.

Given that we have reasons to believe that the properties that are allegedly connected to Argument Ellipsis are acquired before the age of three, both of the approaches to the parameter of Argument Ellipsis discussed in the previous section should make the following prediction:

(26) Prediction for Child Japanese:
Japanese-speaking preschool children have knowledge of Argument Ellipsis.

The next two sections report results of experiments which evaluate the validity of this prediction: Section 5 investigates whether children permit sloppy interpretation for null objects, and Section 6 examines whether children allow this type of interpretation for embedded null subjects.

[8] See also Murasugi and Kawamura (2005) and Sano (2007) for early acquisition of scrambling in Japanese.

Child	*Language*	*Age*	*n*	*% error*	*Source*
Simone	German	1;07-2;08	1732	1	Clahsen and Penke 1992
Martina	Italian	1;08-2;07	478	1.6	Guasti 1994
Diana	Italian	1;10-2;06	610	1.5	Guasti 1994
Guglielmo	Italian	2;02-2;07	201	3.3	Guasti 1994
Claudia	Italian	1;04-2;04	1410	3	Pizzuto and Caselli 1992
Francesco	Italian	1;05-2;10	1264	2	Pizzuto and Caselli 1992
Marco	Italian	1;05-3;00	415	4	Pizzuto and Caselli 1992
Marti	Catalan/Spanish	1;09-2;05	178	0.56	Torrens 1992
Josep	Catalan/Spanish	1;09-2;06	136	3	Torrens 1992
Gisela	Catalan	1;10-2;06	81	1.2	Torrens 1992
Guillem	Catalan	1;09-2;06	129	2.3	Torrens 1992

Table 1: Percentage of Subject-Verb Agreement Errors in Child Language (Hyams 2002:231)

5. Experiment 1: Ellipsis of Object DPs

5.1. Subjects and Method

In order to determine whether Japanese-speaking preschool children permit sloppy interpretation as a consequence of Argument Ellipsis, an experiment was conducted with 10 Japanese-speaking children, ranging in age from 3(years);01(month) to 5;07 (mean age 4;05).[9] The experiment employed a modified version of the Truth-Value Judgment Task (Crain and Thornton 1998). In this task, each child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet described verbally what he thought had happened in the story. The task for the child was to judge whether the puppet's description was true or false, by feeding him either a nice strawberry or a horrible green pepper. The experiment contained (i) two sentences with null objects, and (ii) two sentences with overt pronouns, in order to determine whether children allow the sloppy interpretation for null objects while disallowing that interpretation for overt pronouns. A sample story and the test sentences that followed this story are presented in (27) and (28).

(27) *Sample Story:*
Today, Panda and Pig enjoyed riding on their favorite tricycles. Now they decided to wash them. Panda said, "Oh! My tricycle is very dirty." Pig said, "Shall I help you wash your tricycle?" Panda replied, "No, thanks. I will try to do it by myself, so you can work on your own." They started washing their favorite tricycles.

[9] The experiment reported in this section is based on Sugisaki (2007).

(28) *Sample Test Sentences:*

a. Pandasan-ga zibun-no sanrinsya-o aratteru yo.
panda-NOM self-GEN tricycle-ACC washing PRT

'A panda$_1$ is washing his$_1$ tricycle.'

b. Butasan-mo *e* / sore-o aratteru yo.
pig-also it-ACC washing PRT

'A pig is also washing *e* / it.'

5.2. Results and Discussion

The results are summarized in Table 2.

Sloppy-identity Interpretation of Null Objects	90% acceptance (18/20)
Sloppy-identity Interpretation of Overt Pronouns	85% rejection (17/20)

Table 2: Summary of the Results of Experiment 1

The obtained results clearly indicate that Japanese-speaking preschool children permit the sloppy-identity interpretation for null-object sentences, while disallowing that interpretation for overt pronouns.[10] These results are in conformity with the prediction in (26), and suggest that the knowledge of Argument Ellipsis is already in the grammar of Japanese-speaking preschool children.

However, given that this experiment used sentences involving null objects, there remains a possibility that children may have employed VP-ellipsis, not Argument Ellipsis, to derive the sloppy interpretation. This possibility gains more plausibility in light of the proposal by Takahashi (2008) that Chinese has VP-ellipsis but does not have Argument Ellipsis. As observed by Huang (1991) and Otani and Whitman (1991), null objects in Chinese exhibit the sloppy interpretation: The null object in (29b) can mean either rumors about Zhangsan (strict interpretation) or rumors about Mali (sloppy interpretation). In sharp contrast, according to Takahashi (2008), null subjects in Chinese do not permit sloppy interpretation: The missing

[10] See Matsuo (2007) for a related study which also investigated children's interpretation of null-object sentences. Otaki and Yusa (2012) confirmed that Japanese-speaking children permit ellipsis of object DPs, by demonstrating that children have access to quantificational interpretation of null objects.

embedded subject in (30b) may refer to Zhangsan's child but cannot refer to Lisi's child.

(29) a. Zhangsan bu xihuan guany ziji de yaoyan.
Zhangsan not like about self GEN rumor

'Zhangsan$_1$ does not like rumors about himself$_1$.'

b. Mali ye bu xihuan *e* .
Mali also not like

Lit. 'Mali does not like *e* either.'

(30) a. Zhangsan shuo ziji de haizi mei na qian.
Zhangsan say self GEN child take not money

'Zhangsan$_1$ said that his$_1$ child did not take money.'

b. Lisi ye shuo *e* mei na qian.
Lisi too say take not money

Lit. 'Lisi also said that *e* did not take money.' (Takahashi 2008:415)

This observation suggests that UG may permit two options to derive the sloppy interpretation of null objects: VP-ellipsis (preceded by overt V-to-T raising) as in Chinese, and Argument Ellipsis as in Japanese (and Korean). In order to make sure that child Japanese is not like adult Chinese and that it indeed has Argument Ellipsis, the experiment reported in the next section makes use of sentences that contain an empty argument in the embedded subject position.

6. Experiment 2: Ellipsis of Subject DPs

6.1. Subjects and Method

In order to re-evaluate the validity of the prediction in (26), an experiment was conducted with 24 Japanese-speaking children, ranging in age from 4;11 to 6;07 (mean age 5;10).[11] These children were divided into two groups. One group of children (Experimental Group) was presented test sentences involving an embedded clause with a null subject, as in (31). The other group of children (Control Group) was presented test sentences involving an overt pronoun in the embedded subject position, as in (32). Both types of sentences were accompanied by exactly the same stories.

[11] The results of a small-scale pilot experiment suggested that three-year-olds tend to have difficulty in interpreting a sequence of two sentences both of which involve an embedded clause as in (31) and (32) (irrespective of whether the sentence contains a null subject or an overt subject), presumably due to memory limitations. Thus, this experiment focuses on relatively old children. Some refinements of experimental methodology would be necessary to address the question of whether three-year-olds permit the sloppy interpretation of null subjects, which I have to leave for future research.

(31) *Test Sentence with a Null Subject:*

a. Zousan-wa [zibun-no e-ga ichiban jyouzuda
elephant-TOP self-GEN picture-NOM the-first good
to] omotteru yo.
that think PRT

'The elephant$_1$ thinks that his$_1$ picture is the best.'

b. Raionsan-mo [*e* ichiban jyouzuda to] omotteru yo.
lion-also the-first good that think PRT

'The lion also thinks that *e* is the best."

(32) *Test Sentence with an Overt Pronominal Subject:*

a. Zousan-wa [zibun-no e-ga ichiban jyouzuda
elephant-TOP self-GEN picture-NOM the-first good
to] omotteru yo.
that think PRT

'The elephant$_1$ thinks that his$_1$ picture is the best.'

b. Raionsan-mo [sore-ga ichiban jyouzuda to] omotteru yo.
lion-also it-NOM the-first good that think PRT

'The lion also thinks that it is the best."

Each child was presented with four target trials and two filler trials. Among the four target trails, two of them were aimed at investigating whether children allow sloppy interpretation for null subjects or overt pronouns, and the other two of them were aimed at investigating whether children allow strict interpretation for null subjects or overt pronouns. The task was a modified version of the Truth-Value Judgment Task (Crain and Thornton 1998). In each trial, a child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet described verbally what he thought had happened in the story, using sentences as in (31) or (32). The task for the child was to judge whether the puppet's description was correct or wrong, by pointing at one of the cards the puppet had in his hands: ○ (circle, which means 'correct') or × (cross, which means 'wrong'). Sample stories and the test sentences that followed these stories are given in (33) - (36).

(33) *Sample Story 1* (which investigates the availability of sloppy reading):
Elephant, Lion, and Monkey are drawing their portraits. Elephant said to Lion, "Hey, look at this! I think my portrait is the best." Looking at Elephant's portrait, Lion replied, "Your portrait looks very good, but I think mine is the best."



(34) *Puppet:*

a. Zousan-wa [zibun-no e-ga ichiban jyouzuda
elephant-TOP self-GEN picture-NOM the-first good
to] omotteru yo.
that think PRT

'The elephant$_1$ thinks that his$_1$ picture is the best.'

b. Raionsan-mo [*e* / sore-ga ichiban jyouzuda to]
lion-also it-NOM the-first good that
omotteru yo.
think PRT

'The lion also thinks that *e* / it is the best."

(35) *Sample Story 2* (which investigates the availability of strict reading):
Rabbit, Squirrel, and Dog are reading their picture books. Rabbit said to Squirrel, "Hey, look at this! I think my picture book is the most amusing." Looking at Rabbit's picture book, Squirrel replied, "Yes, I agree. My picture book is very good, but I think yours is the most amusing."



(36) *Puppet:*

a. Usagisan-wa [zibun-no ehon-ga ichiban omosiroi
rabbit-TOP self-GEN picture book-NOM the-first amusing
to] omotteru yo.
that think PRT

'The rabbit$_1$ thinks that her$_1$ picture book is the most amusing.'

b. Risusan-mo [*e* / sore-ga ichiban omosiroi to]
squirrel-also it-NOM the-first amusing that
omotteru yo.
think PRT

'The squirrel also thinks that *e* / it is the most amusing."

6.2. Results and Discussion

The results are summarized in Table 3. Children permitted a strict-identity interpretation both for the sentences with a null subject and the sentences with an overt pronominal subject. In contrast, children showed a strong tendency to allow sloppy-identity interpretation only when the sentence contains a null subject, and to disallow this reading when the sentence involves an overt pronominal subject. These results are in conformity with the prediction in (26), and suggest that the knowledge of Argument Ellipsis is already in the grammar of Japanese-speaking preschool children. The evidence presented in this section would be more convincing than the one presented in the previous section, given that the experiment reported in this section made use of sentences involving null subjects, and hence that the sloppy interpretation children provided for these empty arguments cannot be attributed to VP-ellipsis.

	strict-identity interpretation		*sloppy-identity interpretation*	
	# of acceptance	% of acceptance	# of acceptance	% of acceptance
Sentences involving a null subject	23/24	96%	20/24	83%
Sentences involving an overt pronoun	23/24	96%	4/24	17%

Table 3: Summary of the Results of Experiment 2

7. Experiment 3: The Ban on Adjunct Ellipsis

7.1. A Remaining Question

In the previous two sections, we have obtained evidence that Japanese-speaking preschool children allow the sloppy interpretation for null arguments. Still, a significant question remains as to the exact source for this interpretation. Two possibilities are immediately available. It may be the case that children already have knowledge of Argument Ellipsis, and that the sloppy interpretation stems from this knowledge in an adult-like way. Alternatively, it may be the case that Japanese-speaking children are simply allowing any phrase to be elided, and that the ellipsis of argument DPs is just an instance of that knowledge. In adult Japanese, the latter possibility can be ruled out based on the observation that adjuncts do not undergo ellipsis. The relevant example is provided in (37).

(37) a. Taroo-wa teineini kuruma-o aratta.
Taroo-TOP carefully car-ACC washed

'Taroo washed a car carefully.'

b. Demo, Hanako-wa _____ kuruma-o arawa-nakat-ta.
but Hanako-TOP car-ACC wash-not-PAST

'But Hanako did not wash a car.' / *'But Hanako did not wash a car carefully.'

While the sentence in (37a) contains the adjunct corresponding to *carefully*, the interpretation of (37b) excludes this adjunct: The sentence in (37b) just means that Hanako did not wash a car, and never means that Hanako didn't wash it carefully (that is, Hanako washed a car but not in a careful manner).

Then, in order to verify that Japanese-speaking children indeed have knowledge of Argument Ellipsis (and not the knowledge that any phrase can be elided), it has to be demonstrated that they are also adult-like in disallowing the ellipsis of adjuncts.

7.2. Subjects and Method

In order to determine whether Japanese-speaking preschool children are sensitive to the ban on adjunct ellipsis, an experiment was conducted with 14 Japanese-speaking children, ranging in age from 3;09 to 5;08 (mean age 5;01).[12] As in the previous experiments, the task was a modified version of the Truth-Value Judgment (Crain and Thornton 1998). In this task, each child was told a story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet described verbally what he thought had happened in the story. The task for the child was to judge whether the puppet's description was true or false, by pointing at one of the cards the puppet had in his hands: ○ (circle, which means 'correct') or × (cross, which means 'wrong'). The experiment consisted of 2 sentences with adjuncts, 2 sentences without adjuncts, 1 filler and 1 practice item. A sample story and the test sentences that followed this story are presented in (38) and (39). In this story, if children indeed exclude ellipsis of adjuncts, the test sentence without an adjunct should be judged as false, since Squirrel actually ate his apples even though it was not in a quick manner.

(38) *Sample Story:*
When Frog and Squirrel were about to go out to play soccer, Frog's mother came out from the house and brought them some nice apples. Frog wanted to play soccer now, so he ate his apple very quickly. Squirrel also wanted to play soccer now, but he was not good at eating fast, so he decided to go out without eating his apple. Looking at it, Frog said to Squirrel, "I can wait for you, so you can take your time to finish up your apple." Squirrel ate his apple slowly, and then they went out to play soccer.

[12] The experiment reported in this section is based on Sugisaki (in press).

(39) *Sample Test Sentences:*

a. Test Sentence with an Adjunct

Kaerusan-wa	ringo-o	isoide	tabeta	kedo,
frog-TOP	apple-ACC	quickly	ate	but
Risusan-wa	ringo-o	isoide	tabe-nakat-ta	yo.
squirrel-TOP	apple-ACC	quickly	eat-not-PAST	PRT

'Frog ate an apple quickly, but Squirrel did not eat an apple quickly.'

b. Test Sentence without an Adjunct

Kaerusan-wa	ringo-o	isoide	tabeta	kedo,
frog-TOP	apple-ACC	quickly	ate	but
Risusan-wa	ringo-o	_____	tabe-nakat-ta	yo.
squirrel-TOP	apple-ACC		eat-not-PAST	PRT

'Frog ate an apple quickly, but Squirrel did not eat an apple.'

All the test questions were pre-recorded and came from the laptop computer. In order to make sure that there should be no crucial intonational difference between the sentences with an adjunct and those without (other than the presence of an adjunct itself), the latter were created from the former by deleting the sound corresponding to the adjunct phrase, using Praat (Boersma and Weenink 2010).

7.3. Results and Discussion

The results are summarized in Table 4. When presented with a context as in (38), children rejected sentences without an adjunct more than 85% of the time, while they accepted sentences with an adjunct more than 90% of the time. These results succinctly demonstrate that Japanese-speaking four- and five-year-olds do not permit ellipsis of adjuncts, even though experiments reported in the previous sections revealed that Japanese-speaking children allow arguments to be elided. The findings from this experiment, together with the findings from the previous two experiments, suggest that children are sensitive to the argument-adjunct asymmetry in the possibility of ellipsis, and hence corroborate the claim made in the previous sections that Japanese-speaking preschoolers indeed have knowledge of Argument Ellipsis.

Sentences with an Adjunct	92.9% acceptance (26/28)
Sentences without an Adjunct	85.7% rejection (24/28)

Table 4: Summary of the Results of Experiment 3

8. Experiment 4: The Ban on Eliding *Wh*-phrases

8.1. A Consequence of the Anti-agreement Approach to Argument Ellipsis

As we have seen in Section 3, there are two major parametric approaches to the cross-linguistic variation in Argument Ellipsis: the scrambling approach, which argues that Argument Ellipsis is available only in those languages with (Japanese-type) scrambling, and the anti-agreement approach, which claims that Argument Ellipsis is permitted only in those languages that lack overt agreement. In this section, we focus on the latter approach, and explore a certain consequence of that approach. We further confirm Japanese-speaking children's knowledge of Argument Ellipsis, by demonstrating experimentally that children are also sensitive to that consequence of the anti-agreement approach.[13]

An immediate consequence of the anti-agreement approach proposed by Saito (2007) and adopted by Şener and Takahashi (2010) is that, if a certain type of phrases must undergo obligatory agreement, then that type of phrases cannot be elliptic even in Japanese. I argue that this expectation is indeed borne out by *wh*-phrases.[14]

Chomsky (2000) analyzes overt *wh*-movement as in English as follows. A *wh*-phrase has an uninterpretable feature {u*Wh*} and an interpretable feature {iQ}. The former activates the *wh*-phrase for agreement and movement, and the latter matches and agrees with the uninterpretable feature {uQ} of an interrogative complementizer.

(40) John knows [$_{CP}$ C$_{\{uQ\}}$ [$_{TP}$ Mary bought what$_{\{iQ,\ uWh\}}$]]

Agree (C$_{\{uQ\}}$ ↔ what$_{\{iQ,\ uWh\}}$)

Move (what$_{\{iQ,\ uWh\}}$ → [Spec, CP])

Developing the proposals by Watanabe (1992) and Hagstrom (1998), Chomsky suggests the possibility that *wh*-in-situ constructions also involve an agreement relation as illustrated in (41): The difference between *wh*-movement and *wh*-in-situ languages lies in whether the entire *wh*-phrase is moved (as in English), or only the head undergoes movement overtly or covertly (as in Japanese).[15]

Agree (nani-o$_{\{iQ,\ uWh\}}$ ↔ ka$_{\{uQ\}}$)

(41)	John-wa	[$_{CP}$ Mary-ga	nani-o$_{\{iQ,\ uWh\}}$	katta	ka$_{\{uQ\}}$]	sitteiru.
	John-TOP	Mary-NOM	what-ACC	bought	Q	know

'John knows what Mary bought.'

[13] The experiment reported in this section is based on Sugisaki (2012).

[14] See also Ikawa (in press) for the discussion of why *wh*-phrases are not amenable to Argument Ellipsis.

[15] Watanabe (1992) argues that a null operator undergoes overt movement in Japanese *wh*-in-situ constructions, while Hagstrom (1998) claims that it is the question particle (*ka*) that undergoes syntactic movement from a clause-internal position (by the *wh*-word) to the clause periphery.

The obligatory agreement relation between a *wh*-phrase and an interrogative complementizer provides a very simple account for the observation that Argument Ellipsis of *wh*-phrases is not permitted, as illustrated in (42).

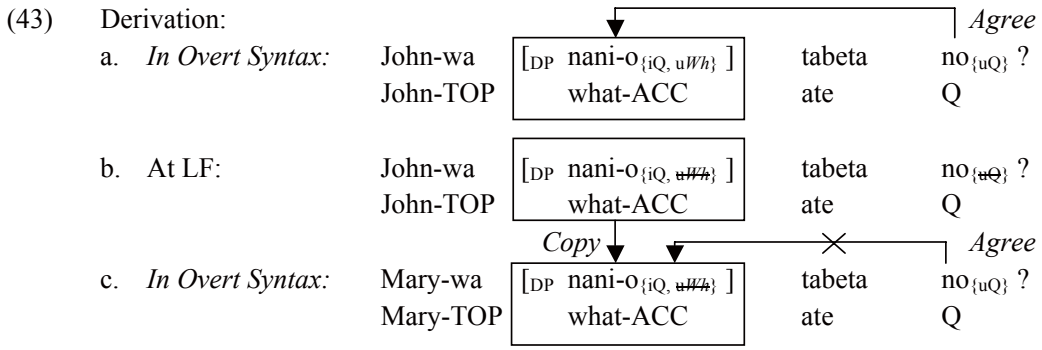
(42) a. Speaker A: John-wa nani-o tabeta no? Speaker B: Ringo.
John-TOP what-ACC ate Q apple
'What did John eat?' 'An apple.'

b. Speaker A: Dewa, Mary-wa _____ tabeta no?
then Mary-TOP ate Q

'Then, did Mary eat something/that?' / *'Then, what did Mary eat?'

The relevant derivation proceeds as shown in (43). The object *wh*-phrase *nani-o* 'what' is copied from the LF representation of (42a) into the object position of (42b), as in (43c). However, this *wh*-phrase has already agreed with the Complementizer in (42a) and hence, the uninterpretable feature {u*Wh*} that rendered this *wh*-phrase active has already been deleted. Then, given the Activation Condition, the copied *wh*-phrase does not qualify as a goal in the required agreement relation, and consequently, the derivation involving LF-copying of a *wh*-phrase does not converge due to the remaining uninterpretable feature {uQ} of the Complementizer.

(43) Derivation:



What the above discussion shows is that the absence of *wh*-phrase ellipsis follows from Saito's (2007) anti-agreement approach *without any additional cost*, if we adopt Chomsky's (2000) assumption that *wh*-phrases must undergo agreement with the Complementizer even in *wh*-in-situ languages like Japanese. I must hasten to add the following: I do *not* claim that the derivation in (43) would be the *only* source for the lack of *wh*-phrase ellipsis. Another possible (and plausible) account for this observation is easily available: A *wh*-phrase is inherently focused, and a focused material cannot be subject to ellipsis. What I argue here is that the anti-agreement approach provides an additional way to exclude ellipsis of *wh*-phrases in Japanese, and that the relevant mechanisms automatically follow from (independently motivated) properties of UG. A virtue of deriving the ban on eliding *wh*-phrases from the anti-agreement approach is that we can obtain a clear prediction for children's knowledge about this constraint: Since the obligatory agreement relation between a *wh*-phrase and an

interrogative complementizer directly follows from UG, it is predicted that those Japanese-speaking preschool children who already have the knowledge about Argument Ellipsis should also have the knowledge that *wh*-phrases cannot undergo this ellipsis. Since we have already established in the experiments discussed in the previous sections that Japanese-speaking preschool children have knowledge of Argument Ellipsis, we can expect that children are also sensitive to the ban on eliding *wh*-phrases. The experiment reported below addresses the question of whether this is actually the case.

8.2. Subjects and Method

An experiment was conducted with 16 Japanese-speaking preschool children, ranging in age from 3;09 to 4;07 (mean age 4;01). The task for children was Question-after-Story. In this task, each child was told a short story, which was accompanied by a series of pictures presented on a laptop computer. At the end of each story, a puppet appeared on the screen and asked the child two questions with respect to what had happened in the story. The task for the child was to answer these questions. All the test questions were pre-recorded and came out from the laptop computer.

A sample story is presented in (44).

(44) *Sample Story:*
Duck and Squirrel are playing with their favorite toys. Duck now starts to draw his favorite airplane. Since Squirrel is not good at drawing, he thinks of just taking a look at how well Duck draws the airplane. However, by looking at Duck's drawing, Squirrel now wants to give a try. So Squirrel also starts to draw his favorite train.



Each story was followed by two questions. The first question was always a *wh*-question like (45). The second question, which was posed after a child had answered the first one, had three types: (i) a *wh*-question as in (46a), (ii) a question involving a null object as in (46b), and (iii) a truncated question as in (46c). In adult Japanese, the questions in (46a) and (46c) are interpreted as a *wh*-question (and hence requires a short answer "A train"), while the question with a null object in (26b) is interpreted as a yes/no question.[16]

[16] The truncated question in (46c) is interpreted as a *wh*-question since the preceding question in (45) is also a *wh*-question: It can be interpreted as a yes/no question when the preceding question is also a yes/no question.

(45) The First Question:

Ahirusan-wa	nani-o	kaita	kana?
duck-TOP	what-ACC	draw	Q

'What did the duck draw?'

(46) The Second Question:

a. *Wh*-question:

Jyaa,	risusan-wa	nani-o	kaita	kana?
then	squirrel-TOP	what-ACC	draw	Q

'Then, what did the squirrel draw?'

b. Question with a null object:

Jyaa,	risusan-wa	_____	kaita	kana?
then	squirrel-TOP		draw	Q

'Then, did the squirrel draw (something)?'

c. Truncated question:

Jyaa,	risusan-wa?
then	squirrel-TOP

'Then, the squirrel?'

One might worry that some intonational difference between a null-object question like (46b) and a *wh*-question as in (46a) may play a role for children to conclude that the former is not a *wh*-question but a yes/no question. In order to make sure that there should be no crucial intonational difference between these two types of questions (other than the presence of a *wh*-phrase), the null-object questions were created from the corresponding *wh*-questions by deleting the sound corresponding the *wh*-phrase, using Praat (Boersma and Weenink 2010).

Truncated questions like (46c) were added to exclude the possibility that children always provide a yes/no answer to questions without an overt *wh*-phrase: If it can be shown that children interpret questions with a null object like (46b) as a yes/no question despite the fact that they interpret truncated questions like (46c) as a *wh*-question, then this would allow us to conclude that children do not rely on a strategy which determines the interpretation of a question based on the presence or the absence of a *wh*-phrase.

The experiment consisted of two trials with a *wh*-question as in (46a), two trials with a null-object question as in (46b), and two trials with a truncated question as in (46c). The order of presentation was pseudo-randomized.

8.3. Results and Discussion

The results are summarized in Table 5. Except for the responses from a single child (4;04), all the answers to null-object questions were yes/no answers (more specifically, *yes* answers). In contrast, virtually all the answers to truncated questions were short answers such as "A train", which suggests that children interpreted these sentences as *wh*-questions. This finding suggests that Japanese-speaking children do not have a strategy to interpret questions without a *wh*-phrase as yes/no questions. The sharp contrast between responses to questions involving a null object and responses to truncated questions suggests that children do not

interpret null-object questions as object *wh*-questions. Thus, the obtained results clearly indicate that Japanese-speaking preschool children already have the knowledge that *wh*-phrases are not allowed to undergo Argument Ellipsis.

	Interpreted as a *wh*-question	Interpreted as a yes/no question
Wh-questions as in (46a)	100% (32/32)	0% (0/32)
Questions with a null object as in (46b)	6.25% (2/32)	93.75% (30/32)
Truncated questions as in (46c)	96.88% (31/32)	0% (0/32)

Table 5: Summary of the Results of Experiment 4

9. Concluding Remarks

This study reported results of four experiments to demonstrate that Japanese-speaking preschool children have fully adult-like knowledge of Argument Ellipsis. The results of Experiment 1 and 2 revealed that children permit sloppy-identity interpretation both for null objects and for null subjects. Experiment 3 verified that the source of this interpretation is indeed knowledge of Argument Ellipsis (and not the knowledge that any phrase can be elided), by showing that children are also adult-like in disallowing the ellipsis of adjuncts. In light of the observation that (Japanese-type) scrambling and agreement are acquired at least before the age of three, these findings lend support to the fundamental part of the parametric proposals by Oku (1998), Saito (2007), and Takahashi (2008) that the availability of Argument Ellipsis in Japanese is closely tied to other prominent characteristics of this language, such as scrambling or the absence of overt agreement.

Experiment 4 focused on the constraint that Argument Ellipsis does not apply to *wh*-phrases, which immediately follows from the anti-agreement approach. The results of this experiment, combined with the results of Experiment 1-3, suggest that not only the knowledge about Argument Ellipsis but also the knowledge about its constraints are in children's grammar from the earliest observable stages. These findings are consistent with the view that the availability of Argument Ellipsis and its constraints directly follow from the principles and parameters of UG, which in turn demonstrates that the acquisition of Argument Ellipsis is a very fruitful area to deepen our understanding about the nature of innate language faculty.

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Chapter 2: Case

(文法格の性質と習得段階に見られる「誤用」)

CASE, TENSE, AND SUBJECT RAISING IN JAPANESE *

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1. Introduction

One long-standing issue in Japanese generative grammar concerns the question of where subjects are located in clause structure. Since the introduction of the predicate-internal subject hypothesis (see Koopman and Sportiche 1991, Sportiche 1988, Fukui 1986, Kitagawa 1986, Kuroda 1988, McCloskey 1996, 1997), this issue has figured prominently. This is precisely because the predicate-internal subject hypothesis makes two subject positions available—one is a vP-internal position, where a subject receives its theta role from the verb, and the other, Spec-TP, which is the landing site of a subject (when it undergoes subject raising).

Theoretically subjects can appear in either Spec-vP or Spec-TP, but in Japanese, no general consensus has been reached as to which position subjects should occupy. Some researchers, such as Fukui (1986, 1995) and Kuroda (1988), hold that subjects appear in vP-internal position without subject raising.

(1) $[_{TP}$ $[_{vP}$ SUBJ $[_{VP}$ V] v] T]

On the other hand, it is held by other researchers, such as Miyagawa (1989a, 1989b) and Kishimoto (2001), that subjects are raised to Spec-TP by virtue of the EPP requirement imposed on T.

(2) $[_{TP}$ SUBJ $[_{vP}$ ~~SUBJ~~ $[_{VP}$ V] v] T]

The discussion of the structural position of subjects is often confined to cases involving nominative subjects, but more recently, a different claim has been advanced in Kishimoto (2012) to the effect that the structural position that subjects occupy varies depending on their marking; that is, nominative subjects are raised to Spec-TP, whereas source subjects marked with ablative case—the oblique *kara* 'from'—remain within vP (cf. Ueda 2003).

In Japanese, there is at least one way of measuring whether or not a subject undergoes raising to Spec-TP. In this paper, it is shown that one species of raising construction where the main predicate is combined with the aspectual verb *iru* 'be' allows us to confirm the

* Part of the material in this paper was presented at 2nd York Workshop on East Asian Syntax (August, 2012). I would like to thank Mamoru Saito, Keiko Murasugi, Hidekazu Tanaka, Mika Kizu, Peter Sells, Ryosuke Shibagaki, John Whitman, and the audience at the workshop for comments and discussions. Needless to say, the author is solely responsible for any remaining errors and inadequacies.

Nanzan Linguistics 9, 21–50
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constituent position of subjects.

In the raising construction formed with the aspectual verb *iru*, a negator may either precede or follow the aspectual verb. As I will discuss at length below, when the negator precedes the aspectual verb, negative scope does not extend over the matrix TP, but is limited to the embedded TP: the limited extent of negative scope allows us to assess whether a subject is raised to Spec-TP or not. A close inspection of the data reveals that the possibility of subject raising is determined by the property of tense. It is suggested that when T bears a case feature to license a nominative argument, it carries an EPP feature, and hence, subject raising is instantiated.

The discussion proceeds as follows. In section 2, I first discuss the structure of the aspectual construction. It is shown then that crucial evidence that allows us to diagnose the presence or absence of subject raising can be drawn from the aspectual construction. In section 3, I argue that when tense bears a case feature to value the case feature of a nominative argument, the EPP requirement is imposed on the clause. In section 4, the nominative-case constraint is seen to emerge when tense has an uninterpretable case feature. A conclusion is presented in section 5.

2. Subject Raising in the Aspectual Construction

The grammatical requirement for filling Spec-TP—the EPP requirement—motivates the raising of subjects to TP from the base-generated position within vP. Since the EPP was formulated by Chomsky (1982), a number of different theoretical implementations have been proposed (see Landau 2007), but it is commonly held that whether or not subject raising to Spec-TP takes place is determined by the property of T.[1]

The EPP requirement is often taken to work in tandem with, or closely to, some grammatical features such as case and agreement. Researchers such as Bošković (2002) and Martin (1999) propose that the EPP should be motivated by case. In contrast, Kuroda (1988), Pesetsky and Torrego (2001), and Miyagawa (2010) provide a view to the effect that agreement dictates the EPP requirement, and hence, the possibility of subject raising.[2] The non-raising view of subjects in Japanese is often motivated by the fact that the language lacks agreement, as discussed by Fukui (1986, 1995) and Kuroda (1988). For Kuroda (1988), for

[1] There are a number of different grammatical views for the EPP: Alexiadou and Anagnostopoulou (1988) claim that the EPP holds universally, and this requirement could be met via XP or X^0 movement; McCloskey (1996) argues that the EPP holds in some languages, but not in others, or that languages may differ in the specifier requirement on T. While I assume that the EPP is a grammatical requirement (imposed on T), some proposals attempt to reduce the EPP requirement to a phonological constraint, stating that T needs its specifier (subject) for phonological reasons (e.g. Holmberg 2000). There are also views taking this requirement to be semantic in nature (see, e.g., Rothstein 2001).

[2] In Miyagawa's analysis, topic/focus features are construed as counterparts of agreement in languages like Japanese.

instance, subjects remain in vP-internal position, due to the absence of agreement. If the EPP works in tandem with agreement, this view might be plausible. Nevertheless, as I will discuss below, there is good reason to believe that in Japanese, the EPP requirement is conditioned by case rather than agreement.

In the following discussion, I will argue that, at least in Japanese, the EPP is correlated with the question of whether T licenses the most prominent structural case of the clause—i.e. nominative case. Data from the subject-raising construction with the aspectual verb *iru* suggest that the specifier requirement (i.e. the EPP requirement) of T is derived when tense carries an uninterpretable case feature to value the case feature of a nominative argument.

2.1. The Raising Constructions

Prior to going into the illustration of how subject raising is implemented in Japanese, let us discuss some notable properties of the aspectual construction (3) where the main verb is combined with the aspectual verb *iru* 'be', which plays a key role in the discussion of subject raising.

(3) John-ga hon-o yon-de ir-u.
John-Nom book-Acc read be-Pres

'John is reading the book.'

First, in the aspectual construction headed by the aspectual verb *iru* 'be', a negator *nai* 'not' can appear in two different syntactic positions. As shown in (4), *nai* can either precede or follow the aspectual verb (but must always follow the main verb).

(4) a. John-ga hon-o yon-de i-na-i.
John-Nom book-Acc read be-Neg-Pres

'John is not reading the book.' V-BE-NOT

b. John-ga hon-o yoma-nai-de ir-u.
John-Nom book-Acc read-Neg be-Pres

'John is not reading the book.' V-NEG-BE

The aspectual verb *iru* occurring with the main verb expresses an aspectual meaning, and constructs a raising construction. This can be confirmed by restoring to two heuristics standardly used for distinguishing raising from control structures.

To be concrete, the fact that inanimate subjects are allowed, as well as the fact that clausal idioms can be embedded with no loss of their idiomatic meanings, confirms that the construction formed with the aspectual verb *iru* 'be' has a raising structure. The examples in (5) represent a case where the negator occurs to the right of the main verb.

(5) a. Sora-ga mada hare-te i-na-i.
sky-Nom still clear be-Pres

'The sky is not clearing yet.' (Inanimate subject)

b. Kono mise-de-wa mada kankodori-ga nai-te i-na-i.
this shop-at-Top still cuckoo-Nom sing be-Neg-Pres

'There are still almost no customers shopping at this shop.' (Clausal idiom)

The same fact that is observed for (5) obtains in cases where the negator follows the aspectual verb, as in (6).

(6) a. Sora-ga mada hare-nai-de i-ru.
sky-Nom still clear-Neg be-Pres

'The sky has not cleared yet.' (Inanimate subject)

b. Kono mise-de-wa mada kankodori-ga naka-nai-de i-ru.
this shop-at-Top still cuckoo-Nom sing-Neg be-Pres

'There are still almost no customers shopping at this shop.' (Clausal idiom)

The data illustrate that the aspectual verb *iru* does not impose any selectional restriction on the subject, which is characteristic of raising verbs, and thus, any type of subject is allowed in the aspectual construction as long as it satisfies the sectional requirement of the main verb.

This pattern of distribution is not found in control constructions. The aspectual verb *oku* 'put' selects a *te*-clause as its complement, just like the aspectual verb *iru* 'be'. Nevertheless, the verb *oku* takes a control complement. This is readily confirmed by the fact that neither inanimate subjects nor clausal idioms can be embedded under *oku*, as shown in (7).

(7) a. *Sora-ga hare-te oka-nakat-ta.
sky-Nom clear put-Neg-Past

'The sky was not cleared.' (Inanimate subject)

b. *Kono mise-de-wa kankodori-ga nai-te oka-nakat-ta.
this shop-at-Top cuckoo-Nom sing put-Neg-Past

'There were almost no customers shopping at this shop.' (Clausal idiom)

The data (5) through (7) suggest therefore that the aspectual construction where the verb *iru* is used should have a raising structure.[3] The variant of the aspectual construction in (4b), where

[3] To be more precise, the raising construction is formed when the subject is raised to Spec-TP. If it does not undergo raising, the resulting structure only involves embedding. As I will discuss below, the subject is moved to Spec-TP when T bears a feature [+Nom] to value the case feature of a nominative argument. In such a case, the aspectual construction involves raising rather than control. Japanese has

nai precedes the aspectual verb *iru*, has an agentive implication semantically, on the basis of which Takezawa (2004) argues that it should have a control structure. Nevertheless, the pattern of distribution observed above suggests that (4b), as well as (4a), should be counted as a raising construction.

2.2. Clause Structure and Negative Scope

In this section, I first delineate some assumptions about clause structure in Japanese. I postulate that Japanese has a clause structure like (8b), where a tense head *-ru* or *-ta* occupies the Fin-head position of FinP—projected in a higher position than TP.

(8) a. [$_{FinP}$ [$_{TP}$ SUBJ [$_{vP}$ ….. V-v] *-ru/-ta*] Fin]

b. [$_{FinP}$ [$_{TP}$ SUBJ [$_{vP}$ ….. V-v] ~~*-ru/-ta*~~] *-ru/-ta*]

I assume that in Japanese, a tense element is merged in the T-head position, as in (8a), but is head-raised to Fin, as in (8b), for the purpose of identifying the finiteness of the clause (see Rizzi 1997, Radford 2009). As a consequence of head raising, which places tense in the Fin-head position, the structure where tense takes scope over TP is created in overt syntax.

In this connection, note that in Romance and Germanic languages, complementizers often have the morphological manifestation of finiteness/infiniteness, suggesting that FinP is associated with the C-system, as discussed by Rizzi (1977). This applies to English as well, since the finiteness of an embedded clause is signalled by the type of complementizer.

Rizzi (1997) suggests that the two sorts of complementizers *di* and *che* in Italian should occupy distinct head positions, on the basis of the facts given in (9) and (10).

(9) a. Credo che il tuo libro, loro lo apprezzerebbero molto.

‘I believe that your book, they would appreciate it a lot.’

b. *Credo, il tuo libro, che loro lo apprezzerebbero molto.

‘I believe, your book, that they would appreciate it a lot.’ Rizzi (1997:218)

(10) a. *Credo di il tuo libro, apprezzarlo molto.

‘I believe ‘of’ your book, to appreciate it a lot.’

b. Credo, il tuo libro, di apprezzarlo molto.

‘I believe, your book, ‘of’ to appreciate it a lot.’ Rizzi (1997: 218)

The complementizer *di* is construed as the non-finite counterpart of the finite complementizer

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a number of auxiliary verbs taking *te*-complements. These verbs are divided into two classes; while verbs like *kuru* ‘come’ and *iku* ‘go’ take raising structures, verbs like *ageru* ‘give’ and *miru* ‘try’ take control structures.

che. On the basis of the fact that *che* precedes, and *di* follows, a left-dislocated phrase appearing in TopP in Italian, as in (9) and (10), Rizzi claims that *che* appears in the head position of ForceP and *di* the head position of FinP.

The fact regarding the complementizers *that* and *for* in English is comparable to what is observed for the two complementizers *che* 'that' and *di* 'of' in Italian. Rizzi (1997) in fact argues that in English, the two types of complementizers *that* and *for* occur in distinct head positions above TP, in the light of the contrast observed in (11) and (12).

(11) a. He is anxious that John will leave tomorrow.

b. He is anxious that, tomorrow, John will leave. Radford (2009: 335)

(12) a. He is anxious for John to leave tomorrow.

b. *He is anxious for, tomorrow, John to leave. Radford (2009: 335)

The finite complementizer *that* fills in the head position of ForceP, so that a topic accommodated in TopP can follow it.[4] This ordering is impossible with *for*, because it occurs in the head position of FinP. The data suggest that in English (and Italian), FinP is associated with a non-finite complementizer rather than tense itself.

In Japanese, by contrast, no distinction between finite versus non-finite clauses is drawn by the kind of complementizer, i.e. finiteness is not signalled by a complementizer morphologically, and tense can be distinguished only by way of its morphology. In the light of this fact, I surmise that in Japanese, unlike English/Italian, the T-head is associated with finiteness, and that since T is located below Fin, head raising of tense to Fin is instantiated. Under the view held here, FinP plays a different role in English/Italian and Japanese.

Let us now turn to the question of how negative scope is determined. It is well-observed that in Japanese, the scope of negation extends over TP in a simple clause (see Kato 1985, and many others), so that no subject-object asymmetry is observed in licensing NPIs, as illustrated in (13).

(13) a. John-ga *hon-sika* yoma-na-i.
John-Nom book-only read-Neg-Pres

'John reads only books.'

[4] In Rizzi's (1997) analysis, the C-system is comprised of several distinct projections, as in (i).

(i) Force … (Topic)…(Focus)… Fin

The crucial point is that ForceP is projected above the Topic-Focus field, but FinP is located below it, so that a topic appearing in the left periphery is ordered differently, depending on what type of complementizer appears in the clause.

b. *John-sika* hon-o yoma-na-i.
John-only book-Acc read-Neg-Pres

'Only John reads books.'

The NPI *sika* (attached to DP/PP) is licensed by falling under the scope of negation (see Aoyagi and Ishii 1994). In (13), both subject and object NPIs are licensed, on the grounds that the scope of *nai* extends over the entire clause. Needless to say, DP/PP-*sika* is not licensed if it does not appear in the negative context.

(14) a. *John-ga *hon-sika* yom-u.
John-Nom book-only read-Pres

'John reads only books.'

b. **John-sika* hon-o yom-u.
John-only book-Acc read-Pres

'Only John reads books.'

c. **John-sika* [Mary-ga naka-nakat-ta to] it-ta.
John-only Mary-Nom cry-Neg-Past that say-Past

'Only John said that Mary did not cry.'

In both (14a) and (14b), the NPI *sika* is not licensed due to the absence of a negator, i.e. negative scope is not projected which can license an NPI. In (14c), the NPI *sika* appears in the matrix clause, but the negator is located in the embedded clause. Thus, (14c) is ruled out on the grounds that the NPI falls outside the scope domain of the negator.

Negative scope can be assumed to be fixed structurally. The clause-wide scope of negation can be attributed to the presence of Neg-raising, which raises a Neg-head to T (and further to Fin), as depicted in (15).

(15) [$_{FinP}$ [$_{TP}$ SUBJ [$_{NegP}$ [$_{vP}$ [$_{VP}$ OBJ V] v] ~~Neg~~] ~~Neg-T~~] Neg-T-Fin]

In Japanese, T attracts a Neg-head to form a complex head, and further, since the finiteness of T needs to be licensed via head-raising to Fin, the entire head complex including Neg occurs in the Fin-head position. The complex head has TP in its c-commanding domain, and the scope of negation extends over TP accordingly.

In English, the negator *not* takes narrower scope, and a subject-object asymmetry obtains with regard to NPI licensing, as exemplified in (16).

(16) a. John did not read *anything*.

b. **Anyone* did not read the book.

This shows that the extent of negative scope differs between Japanese and English.[5] Arguably, no Neg-raising takes place in English.

(17) $[_{FinP}\ [_{TP}$ SUBJ T $[_{NegP}$ *not* $[_{vP}$ v-V $[_{VP}$ OBJ]]]]]

In English, the negator resides in NegP, as illustrated in (16), and as such, negative scope does not extend over TP.

Japanese is similar to English, in that a negator looks like occupying a lower position than tense (at least morphologically). Nevertheless, Japanese, unlike English, takes clause-wide negative scope. In Japanese, T is combined with Neg to form a complex head, and this complex head is raised to Fin, with the result that Neg takes scope over TP.[6] TP falls under the scope of *nai*, as a result of head raising, so the negative *nai* can license both subject and object (even if the subject undergoes raising to the clause-subject position of Spec-TP).

The existence of Neg-raising in Japanese, which leads to the formation of a complex head, is evidenced by (18).

(18) *John-ga hasit-te i-naku-**mo** ar-u.
John-Nom run be-Neg-also be-Pres
'John is also not running.'

The example in (18) illustrates that the negative *nai* resists the suffixation of an adverbial particle on its right. As discussed by Kishimoto (2007, 2008), this is indicative of the fact that *nai* and the tense form a complex head syntactically.

When tense is separated from the adjectivally-inflecting negator by virtue of an emphatic particle, the supportive verb *aru* 'be' is inserted to the left of the stranded tense, in the same way that the supportive verb *aru* is inserted when tense is separated from its host adjective, as in (19).

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[5] In English, the negator *not* takes scope over subjects (located in Spec-TP) if it is raised to a higher position. Thus, an asymmetry in NPI interpretation obtains in the sentences in (i).

(i) a. What did anyone not buy?

b. What didn't anyone buy?

In (ia), *anyone* has a free-choice interpretation, and does not serve as an NPI. This is due to the fact that the subject is located in the position which falls outside the scope of *not*. In (ib), in contrast, *anyone* can serve as an NPI. The difference accrues from the fact in (ia), but not in (ib), *not* is located in a position where its scope extends over the subject.

[6] The peculiarity of negation in Japanese lies in the fact that the sentential negator *nai* is combined with tense to form a complex head. In English, and also in other European languages, sentential negators, even if they are realized as heads, function as elements independent of tense, and normally do not interact with it (see Haegeman 1995, Zanuttini 1997, and others).

(19) John-wa kanasiku-**mo** ar-u.
John-Top sad-also be-Pres

'John is also sad.'

In (18), in opposition to (19), the predicative sequence is not well-formed even with this morphological adjustment, i.e., (18) is not acceptable even if an appropriate supportive verb is inserted to the left of the stranded tense, which suggests that the negative *nai* be raised and adjoined to the tense to form a complex head syntactically.

This analysis is based on the assumption that a complex head cannot comprise a particle inside even if there is a morphological boundary. This view gains support from the examples in (20).

(20) a. *kaigai-**mo** ryokoo
overseas-also travel
'overseas as well travel'

b. kaigai-ryokoo-**mo**
overseas-travel-also
'overseas travel as well'

The entire sequence of a compound noun like *kaigai ryokoo* 'overseas travel' forms a complex head, despite the fact that it consists of two elements *kaigai* 'overseas' and *ryokoo* 'travel' morphologically. With this compound noun, a particle can be added to the right of the entire complex, as in (20b), but cannot intervene between the morphological boundary of the two elements, as in (20a). Since an adverbial particle cannot be inserted unless there is a syntactic break, it is reasonable to state that the impossibility of inserting a particle to the right of the negative *nai* in (18) gives us a sign that the head *nai* is raised to a higher head to derive a complex head.

While a particle is prevented from occurring to the right of a negator, as in (18), a particle can be added to the right of the aspectual verb *iru*.

(21) John-ga hasit-te i-**mo** si-na-i.
John-Nom run be-also do-Neg-Pres

'John is also not running.'

When a bound element is separated from the verb, as in (21), the supportive verb *suru* 'do' is used for morphological support. The acceptability of (21) shows that the aspectual verb does not form a syntactically tight unit with a higher predicative head, i.e. no head raising takes place.

Given the facts noted above, the verbal sequences in (22) can be posited for the two variants of the aspectual construction; (22a) represents a case where the negator appears in the matrix clause, and (22b) is a case where the negator is in the complement clause.

(22) a. [$_{FinP}$ [$_{TP}$ [$_{NegP}$ [[$_{FinP}$ [$_{TP}$ [$_{vP}$ V-v] ~~T~~] T-Fin] Be] ~~Neg~~] ~~Neg-T~~] **NEG**-T-Fin]

b. [$_{FinP}$ [$_{TP}$ [[$_{FinP}$ [$_{TP}$ [$_{NegP}$ [$_{vP}$ V-v] ~~Neg~~] ~~Neg-T~~] **NEG**-T-Fin] Be] ~~T~~] T-FIN]

In the aspectual construction, the morpheme *-te*, which occurs with the main verb, has an infinitival (or gerundive) character semantically, and occurs in the head position where a finite tense is placed. In view of this fact, it is reasonable to assume that *-te* heads a TP projection that constitutes a non-finite complement (Kishimoto 2012).

Under the view taking the finiteness of a clause to be determined by Fin, which is placed just above T, head raising of a tense head to Fin takes place even in the complement clause, because the non-finite nature of *-te* needs to be determined within the projection of FinP. Therefore, when a negator is embedded inside the aspectual verb, it should undergo Neg-raising to T filled by the affix *-te* (or *-de*), and subsequently to the embedded Fin. In effect, the examples in (23) suggest that Neg-head raising takes place in the complement clause of the aspectual construction.

(23) a. *John-ga hasira-naku-**mo** at-te i-ru.
John-Nom run-Neg-also be be-Pres

'John is also not running.'

b. John-ga hasira-nai-de-**mo** i-ru.
John-Nom run-Neg-also be-Pres

'John is also not running.'

The unacceptability of (23a) shows that the negative head is raised to *-te* to derive a complex head. On the other hand, (23b) shows that *-te* is not syntactically combined with a higher head by head raising. This being the case, it can be stated that a complex head comprised of Neg and T (*-te/-de*) resides in the embedded Fin-head position, as (22b) illustrates.

The aspectual construction has a bi-clausal structure, and thus, the extent to which the scope of the negative *nai* extends should differ depending on where it appears. This is in fact the case. To be concrete, when *nai* intervenes between the main and the aspectual verbs, a difference in the possibility of NPI licensing is observed, as seen in (24).

(24) a. Zutto John-ga *hon-sika* yoma-nai-de i-ru.
all.the.time John-Nom book-only read-Neg be-Pres

'John has been reading only books all the time.'

b. *Zutto *John-sika* hon-o yoma-nai-de i-ru.
all.the.time John-only book-Acc read-Neg be-Pres

'Only John has been reading books all the time.'

While the NPI object in (24b) is licensed, the NPI subject in (24a) is not, showing that the

negative scope does not extend over the matrix clause.[7] If the negative *nai* is placed in the matrix clause, it takes scope over the matrix clause, and there is no subject-object asymmetry found in NPI licensing, as shown in (25).

(25) a. Saikin John-ga *hon-sika* yon-de i-na-i.
Recently John-Nom book-only read be-Neg-Pres

'Recently, John has been reading only books.'

b. Saikin *John-sika* hon-o yon-de i-na-i.
Recently John-only book-Acc read be-Neg-Pres

'Recently, only John has been reading books.'

Importantly, the difference in acceptability observed between (24) and (25) suggests that the nominative subject is moved to Spec-TP from within vP by virtue of the EPP requirement imposed on T, as illustrated in (26).

(26) a. $[_{FinP}\ [_{TP}$ SUBJ $[_{NegP}\ [[_{FinP}\ [_{TP}\ [_{vP}$ OBJ V-v]]T-Fin]Be]]] **NEG**-T-Fin]

b. $[_{FinP}\ [_{TP}$ SUBJ $[[_{FinP}\ [_{TP}\ [_{NegP}\ [_{vP}$ OBJ V-v]]]**NEG**-T-Fin]Be]]T-Fin]

In (26a), where *nai* follows the aspectual verb *iru*, *nai* is raised to the matrix Fin, and thus, its scope domain extends over the entire clause. Consequently, the subject as well as the object of the main verb falls under the scope of negation. (In (26a), the subject has undergone raising to the matrix Spec-TP, and yet it falls under scope of negation.) On the other hand, in (26b), where *nai* precedes the aspectual verb, its scope extends only over the embedded clause. In this case, the object falls under scope of negation, which is placed in the embedded clause, but the subject does not. In (24), a subject-object asymmetry is observed in regard to NPI licensing, since the subject is extracted from the scope domain of *nai*. (Note that in the aspectual construction, two TP projections are present, but the lower non-finite TP is not relevant for the present discussion of the EPP.)

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[7] An NPI object scrambled across the subject is not licensed by the negator *nai* that precedes the aspectual verb, as shown in (ia).

(i) a.??? Zutto *hon-sika*$_i$ John-ga t_i yoma-nai-de ir-u.
all.the.time book-only John-Nom read-Neg be-Pres

'John has been reading only books all the time.'

b. *Zutto hon-o$_i$ *John-sika* t_i yoma-nai-de ir-u.
all.the.time book-Acc John-only read-Neg be-Pres

'Only John has been reading books all the time.'

In (ia) both subject and object are located in the matrix clause, and thus, the subject NPI is not licensed by *nai*, either, as shown in (ib). Miyagawa (2001) claims that the subject may remain in vP-position when an object is scrambled across it, but the examples in (i) suggest that this is not case.

It is worth noting at this point that a similar pattern of distribution is found in (27), which involve adjunct NPIs.

(27) a. *John-wa *kinoo-made-sika* hataraka-nai-de i-ta.
John-Top yesterday-until-only work-Neg be-Past

'John was working only until yesterday.'

b. Zutto John-wa *koko-de-sika* hataraka-nai-de i-ta.
all.the.time John-Top here-in-only work-Neg be-Past

'John was working only here all the time.'

The temporal adverb in (27a) should be located in the matrix clause, because it is associated with the matrix tense. On the other hand, the locative PP in (27b) specifies the place where the event described by the main verb takes place, which suggests that it is located in the embedded clause. The contrast in acceptability between (27a) and (27b) shows that the temporal adjunct appears in the matrix clause, which is outside the scope of *nai* embedded under *iru*, but the locative adjunct appears in the embedded clause.

Again, no difference in acceptability is observed between the two types of NPI adjuncts with *sika* if the negator follows the aspectual verb, as shown in (28).

(28) a. John-wa *kinoo-made-sika* hatarai-te i-nakat-ta.
John-Top yesterday-until-only work-Neg be-Neg-Past

'John was working only until yesterday.'

b. Zutto John-wa *koko-de-sika* hatarai-te i-nakat-ta.
all.the.time John-Top here-in-only work-Neg be-Neg-Past

'John was working only here all the time.'

When *nai* appears in the matrix clause, as in (28), it takes scope over the entire clause. Consequently, both types of NPI adjuncts in (28) are licensed under the scope of negation. In (27), in contrast, the negator that appears in the complement clause takes scope over the embedded TP, but not beyond, so a difference in acceptability shows up there.

Note also that the subjects of unergative and unaccusative predicates fall outside the scope of negation in the aspectual construction where *nai* precedes the aspectual verb *iru*.

(29) a. *Zutto *John-sika* hasira-nai-de i-ru.
all.the.time John-only run-Neg be-Pres

'Only John has been running all the time.' (Unergative)

b. *Zutto *John-sika* taore-nai-de i-ru.
all.the.time John-only fall-Neg be-Pres

'Only John has been falling down all the time.' (Unaccusative)

The fact shows that not merely unergative predicates but also unaccusative predicates instantiate the raising of their subjects to the matrix Spec-TP. It goes without saying that when the negative *nai* follows the aspectual verb, both types of sentences are acceptable, because the scope of negation extends over the matrix TP.

(30) a. Saikin *John-sika* hasit-te i-na-i.
recently John-only run be-Neg-Pres

'Only John has been running recently.' (Unergative)

b. Saikin *John-sika* taore-te i-na-i.
recently John-only fall be-Neg-Pres

'Only John has been falling down recently.' (Unaccusative)

Some researchers, such as Kageyama (1993) and Nishigauchi (1992), claim that the subjects of unaccusative predicates, as opposed to those of unergative predicates, do not undergo raising. On the contrary, since both the subjects fall outside the scope of negation in (29), where the negator is placed in the complement clause, it must be the case that the subjects undergo raising to Spec-TP regardless of whether the predicates are unergative or unaccusative.

In the aspectual construction where the negator appears to the left of the aspectual verb, the matrix clause falls outside the scope of negation, so that a subject-object asymmetry is observed with regard to NPI licensing. In the next section, I will turn to the discussion of evidence suggesting that the possibility of subject raising in Japanese should be conditioned by case.

3. Canonical and Non-canonical Case Marking of Subjects

In this section, it is shown that when T is specified for [+Nom], the EPP requirement is imposed on it. I argue that nominative and dative subjects undergo subject raising, but obliquely-marked subjects do not (provided that no nominative argument appears in the clause).

3.1. Subject Raising in the Raising Construction

In the literature on Japanese, it is a locus of debate where subjects are located in clause structure (see, e.g., Fukui 1986, 1990, Kuroda 1988, Ueda 1990, Nishigauchi and Ishii 2003). This discussion is often confined to cases where subjects receive nominative case, but subjects can bear some other case markings, e.g. the dative *ni*, ablative *kara* 'from', and

instrumental *de* 'with', as illustrated in (31).

(31) a. John-ga ronbun-o kai-ta.
John-Nom paper-ACC write-Past

'John wrote a paper.' (Nominative subject)

b. John-ni sore-ga mie-ta.
John-Dat that-Nom see-Past

'John saw that.' (Dative subject, mainly for stative predicates)

c. Watasi-kara sono koto-o hanasi-ta.
I-from that fact-Acc speak-Past

'I talked about that matter.' (Ablative subject, marks a source)

d. Kodomo-tati-de atumat-ta.
child-Pl-with get.together-Past

'The children got together.' (Instrumental subject, marks a plural agent)

In Japanese, at least four distinct types of marking are available for subjects.[8] The subject is marked with nominative case in (31a), and dative case in (31b). In (31c), the subject bears the ablative *kara* 'from', since it is thematically conceived as a source, as well as an agent, i.e. the ablative case *kara* can be assigned to the subject which is identified as a source (Kishimoto 2009, 2010).[9] In (31d), the subject is assigned *de* 'with', for it is an agent argument which has a plural referent, i.e. the argument refers to a group of people (Kishimoto 2005, Takubo 2010).

The thematic relations of arguments are uniquely identifiable by *kara* and *de*, which shows that they are construed as inherent (or semantic) cases. On the other hand, nominative and dative cases are structural ones, and hence do not specify the thematic relations of arguments which they occur with.[10] In the following discussion, making crucial use of the aspectual construction, I will show that subject raising is instantiated in (31a-b), where the subjects bear structural case, but not in (31c-d), where the subjects carry inherent case.

[8] The discussion in this paper is limited to cases where subjects appear in main clauses, but it is worth noting that some other markings are available in embedding contexts; for instance, subjects is marked with accusative case when they appear in the embedded clause of the ECM construction, and they can bear genitive case when they appear inside relative or noun complement clauses.

[9] When a DP marked with *kara* specifies ordering, it behaves like an adjunct. Thus, this type of DP is not discussed here (see Kishimoto 2012).

[10] Although there are a number of different views on dative case, I assume that it falls into the class of structural case. See, e.g. Butt (2006) for discussion on this point.

To begin, the underlined arguments bearing different markings in the four clauses in (31) are all counted as subjects syntactically. This can be confirmed by the fact that they can be the antecedents of the subject-oriented *zibun*.

(32) a. John$_i$-ga zibun$_i$-no ronbun-o kai-ta.
John-Nom self-Gen paper-ACC write-Past

'John wrote his own paper.'

b. John$_i$-ni zibun$_i$-no ie-ga mie-ta.
John-Dat self-Gen house-Nom see-Past

'John saw his own house.'

c. John$_i$-kara-wa zibun$_i$-no koto-o hanasa-nakat-ta.
John-from-Top self-Gen fact-Acc speak-Neg-Past

'John did not talk about his own matter.'

d. Kodomo-tati$_i$-de zibun$_i$-no nimotu-o hakon-da.[11]
child-Pl-with self-Gen luggage-Acc carry-Past

'The children carried their own luggage.'

Subject honorification provides another type of corroboration for the adequacy of the present view. The examples in (33) show that the underlined arguments in (31) can be targeted by subject honorification.

(33) a. Sensei-ga ronbun-o o-kaki-ni-nat-ta.
teacher-Nom paper-ACC write-Hon-Past

'The teacher wrote a paper.'

b. Sensei-ni sore-ga o-mie-ni-nat-ta.
teacher-Dat that-Nom see-Hon-Past

'The teacher saw that.'

c. Sensei-kara sono koto-o o-hanasi-ni-nat-ta.
teacher-from that fact-Acc speak-Hon-Past

'The teacher talked about that matter.'

[11] In this example, *zibun* can have either a group or a distributive reading. The two readings are available for *zibun* in cases where a subject refers to more than one individual.

d. Sensei-tati-de o-atumari-ni-nat-ta.
teacher-Pl-with get.together-Hon-Past

'The teachers got together.'

Given that the underlined arguments in (31) can be the targets of subject honorification, and the antecedents of the reflexive *zibun*, both of which have subject orientation, it is safe to state that they serve as subjects.[12]

Next, let us confirm that nominative subjects undergo raising to the matrix Spec-TP in the aspectual construction. This can be seen by the fact that nominative subjects lie outside the scope of negation when *nai* is embedded under *iru*.

(34) a. *Zutto *John-sika* gohan-o tabe-nai-de i-ta.
all.the.time John-only rice-Acc eat-Neg be-Past

'Only John has been eating rice all the time.'

b. Zutto John-ga *gohan-sika* tabe-nai-de i-ta.
all.the.time John-Nom rice-only eat-Neg be-Past

'John has been eating only rice all the time.'

In (34), the subject, but not the object, is allowed to occur with *sika*. Since the negative scope extends over the complement clause, but not the matrix clause, the fact shows that the nominative subject is raised to the matrix Spec-TP.

Similarly, in the dative-subject construction, the dative subject is raised to Spec-TP, whereas an object is not even if it is marked with nominative case. The contrast in acceptability observed between (35a) and (35b) with regard to the licensing of the NPI *sika* provides a confirmation of this fact.

(35) a. *Zutto *John-ni-sika* sonna undoo-ga deki-nai-de i-ru.
all.the.time John-Dat-only that exercise-Nom can.do-Neg be-Pres

'Only John has been able to do that exercise all the time.'

b. Zutto John-ni-wa *sonna undoo-sika* deki-nai-de i-ru.
all.the.time John-Dat-Top that exercise-only can.do-Neg be-Pres

'John has been able to do only that exercise all the time.'

Since the dative subject cannot occur with *sika*, as shown in (35a), it must be located in Spec-TP in the main clause, i.e. the dative subject is moved to the matrix Spec-TP by virtue of subject raising.

[12] Subject honorification is subject-oriented, as often discussed (see e.g. Harada 1976, Hasegawa 2006), but in some cases, speaker variation might arise with regard to its possible targets.

In the dative-subject construction, just like the nominative-subject construction, the subject-object asymmetry in NPI licensing observed in (35a-b) does not obtain when the negator appears in the matrix clause. This is shown in (36).

(36) a. *John-ni-sika* sono undoo-ga deki-te i-na-i.
John-Dat-only that exercise-Nom can.do be-Neg-Pres

'Only John can do that exercise.'

b. John-ni-wa *sono undoo-sika* deki-te i-na-i.
John-Dat-Top that exercise-only can.do be-Neg-Pres

'John can do only that exercise.'

The absence of subject-object asymmetry in NPI licensing is naturally expected: since the negative *nai* that follows the aspectual verb takes scope over the matrix clause, an NPI is licensed regardless of whether it appears in the matrix subject position or in the embedded object position.

Let us continue to consider how NPIs with *sika* behave in cases where the subject is marked with *de* 'with' or *kara* 'from'. First, in the aspectual construction where *nai* is located in the complement clause (37), the NPI subject marked with the oblique *de* 'with', as well as the NPI object, is licensed by *nai*.

(37) a. Zutto *kodomo-tati-de-sika* asobi-no keikaku-o tate-nai-de i-ru.
all.the.time child-Pl-Instr-only play-Gen plan-Acc make-Neg be-Pres

'Only the children have been making plans for their play all the time.'

b. Zutto kodomo-tati-de *asobi-no keikaku-sika* tate-nai-de i-ru.
all.the.time child-Pl-Instr play-Gen plan-only make-Neg be-Pres

'The children have been making only plans for their play all the time.'

In (37), the subject and the object fall under the scope of negation, and therefore, an NPI can appear in either the subject or the object position.[13] Since the negative scope does not extend

[13] In a sentence like (38b), even when the object is scrambled across the *de*-marked subject, the sentence is acceptable, as in (i).

(i) Zutto *asobi-no keikaku-sika*$_i$ kodomo-tati-de t_i tate-nai-de i-ru.
all.the.time play-Gen plan-only child-Pl-Instr make-Neg be-Pres

'The children have been making only plans for their play all the time.'

This is obviously a reflection of the fact that the *de*-marked subject remains in the base position without raising to TP. In (i), since the subject remains in the embedded clause, the scrambled object can appear in the embedded clause, over which the negative *nai* extends its scope. The same fact obtains in a clause where the subject is marked with *kara* 'from'.

over the matrix clause, it must be the case that the obliquely-marked subject remains in situ without raising to the matrix Spec-TP.

In the ablative-subject construction in (38) as well, the oblique NPI subject, alongside an accusative NPI object, is licensed by falling under the scope of *nai* located in the subordinate clause.

(38) a. Zutto *hahaoya-kara-sika* hanasi-o si-nai-de i-ru.
all.the.time mother-from-only talk-Acc do-Neg be-Pres

'Only the mother has been talking all the time.'

b. Zutto hahaoya-kara-wa *sonna* *hanasi-sika* si-nai-de i-ru.
all.the.time mother-from-Top that talk-only do-Neg be-Pres

'The mother has been giving only that kind of talk all the time.'

The fact that both NPI subject and object are licensed suggests that the *kara*-marked subject as well does not undergo raising to the matrix TP.[14]

The data discussed thus far indicate that dative and nominative subjects undergo raising to Spec-TP, while oblique subjects do not. The question to be addressed at this point is why it is that the nominative and the dative subjects undergo raising to Spec-TP. As well observed (see Takezawa 1997, Tada 1992, and many others), the availability or unavailability of nominative case in Japanese is correlated with the question of whether the clause has (finite) tense. In the light of the fact that both nominative-subject and dative-subject constructions comprise nominative arguments, whose case feature is valued by tense, I suggest that when tense carries the uninterpretable case feature [+Nom], the EPP requirement is imposed on T, i.e. an EPP feature is assigned to it.

If subject raising is implemented in cases where tense has [+Nom] to value the case feature of a nominative argument, sentences which do not comprise any nominative arguments are not expected to instantiate subject raising. Note, however, that Japanese has the case requirement that a tensed clause has at least one nominative argument, which is often referred to as the 'nominative-case' constraint (Shibatani 1978). The nominative-case constraint applies fairly persistently, but still, there are a number of syntactic contexts where the nominative-case constraint does not apply. One such context is found in the oblique-subject constructions where the nominative case on the subject, which needs to be licensed by T, is replaced by an oblique marker *kara* or *de*. The data regarding the oblique-subject constructions in (37) and (38) confirm that no subject raising takes place when the clause

[14] It goes without saying that the obliquely-marked NPI subject raised remaining in the base position is licensed by the negator *nai* that follows the aspectual verb.

does not comprise any nominative argument.[15]

Note that the dative-subject construction is subject to the nominative-case constraint. Thus, the variant of the dative-subject clause that marks the object with accusative case in (39) is not acceptable.

(39) John-ni {sore-ga/*sore-o} deki-ru.
John-Dat that-Nom/that-Acc can.do-Pres

'John can do that.'

Owing to the fact that the nominative-case constraint applies to the dative-subject construction, the syntactic construal which does not have a nominative argument cannot be constructed from the dative-subject construction (see section 4).

Under the present analysis taking tense to be responsible for determining the possibility of subject raising, it is further predicted that the raising of an oblique-marked subject to Spec-TP is instantiated if the clause has a nominative argument. This prediction is in fact borne out, since oblique subjects are susceptible to subject raising when they occur in clauses that contain nominative objects, as I will discuss below. (40) is a case where the subject is marked with *kara* 'from'.

(40) a. *Zutto *hahaoya-kara-sika* hanasi-ga deki-nai-de i-ru.
all.the.time mother-from-only talk-Nom can.do-Neg be-Pre

'Only the mother has been able to talk all the time.'

b. Zutto hahaoya-kara-wa *sonna* *hanasi-sika* deki-nai-de i-ru.
all.the.time mother-from-Top that talk-only can.do-Neg be-Pres

'The mother has been able to give only that kind of talk all the time.'

The examples in (40) differ from those in (38) in the choice of predicate. In (40), the object is marked with nominative case, since the predicate is *dekiru* 'can do'. (Note that *dekiru*, which can sanction nominative case on its object, is a suppletive potential form of *suru* 'do'.) The examples in (40) show that while the NPI object, which is marked with nominative case, is licensed by *nai*, the NPI subject does not, owing to its raising to Spec-TP.

The same holds true for the construction whose subject is *de*-marked. As can be seen from (41), the subject marked with *de* is amenable to subject raising if the clause contains a nominative object.

[15] In matrix clauses, the subjects of unaccusative verbs cannot be marked with accusative case, even though they initially appear in object position. It should also be noted that no semantic markers substituting the nominative case on the subjects of unaccusative verbs are available in Japanese.

(41) a. *Zutto *kodomo-tati-de-sika* hanasi-ga deki-nai-de i-ru.
all.the.time child-Pl-with-only talk-Nom can.do-Neg be-Pres

'Only the children have been able to talk all the time.'

b. Zutto kodomo-tati-de-wa *sonna hanasi-sika* deki-nai-de i-ta.
all.the.time child-Pl-with-Top that talk-Nom can.do-Neg be-Past

'The children have been able to give only that kind of talk all the time.'

In (41), the subject marked with *de*, but not the nominative object, falls outside the scope of negation. This stands in contrast with the *de*-marked subject appearing in the clause which has an accusative object, as in (37).

The negative *nai*'s failure to license the oblique subject NPIs in the aspectual construction where the negative takes scope only over its complement clause gives us a clear indication that oblique subjects are raised to the matrix Spec-TP when the EPP requirement is obtained, as illustrated in (42b).

(42) a. [$_{TP}$ [$_{TP}$ [$_{vP}$ SUBJ-kara/de OBJ-ACC Vv]] T]

b. [$_{TP}$ SUBJ-kara/de [$_{TP}$ ~~SUBJ-kara/de~~ [$_{vP}$ ~~SUBJ-kara/de~~ OBJ-NOM Vv]] T]

Subject raising is not implemented when an object is marked with accusative rather than nominative case. Thus, it is reasonable to conclude that subject raising is induced when tense bears a case feature to value the case feature on a nominative argument.

3.2. Control Construction

The raising construction where the negator is located in the complement clause, no subject-object asymmetry in NPI licensing is observed when the subject does not undergo raising to the matrix Spec-TP, as seen above. In the aspectual construction where the main verb is combined with an aspectual verb like *oku* 'put' (see section 2.1), the subject is selected by *oku*, and thus, it is base-generated in the matrix clause, while PRO appears in the complement clause, as (43) illustrates.

(43) [$_{FinP}$ [$_{TP}$ [$_{vP}$ SUBJ [$_{FinP}$ [$_{TP}$ PRO [$_{NegP}$ [$_{vP}$ V-v]]] **NEG**-T-FIN] PUT]] T-FIN]

This leads to another predication. In the control construction where the negator is located to the left of the verb *oku* 'put', as in (43), it is predicated that NPI subjects will not be licensed even in a case where the EPP is not imposed on the clause. This prediction is in fact borne out, as we can see from (44).

(44) a. *Zutto *kodomo-tati-de-sika* asobi-no keikaku-o tate-nai-de oi-ta.
all.the.time child-Pl-Instr-only play-Gen plan-Acc make-Neg put-Past

'Only the children made a plan for their play all the time.'

b. Zutto kodomo-tati-de *asobi-no* *keikaku-sika* tate-nai-de oi-ta.
all.the.time child-Pl-Instr play-Gen plan-only make-Neg put-Past

'The children made a plan only for their play all the time.'

In (44), the subject marked with *de* should not be raised to the matrix Spec-TP in the absence of a nominative argement. Nevertheless, the subject lies outside the scope of negation, since the negative scope extends only over the complement clause. Hence, (44a) is unacceptable. The same fact obtains even when the subject is marked with *kara*, as seen in (45).

(45) a. *Zutto *hahaoya-kara-sika* hanasi-o si-nai-de oi-ta.
all.the.time mother-from-only talk-Acc do-Neg put-Past

'Only the mother talked all the time.'

b. Zutto hahaoya-kara-wa *sonna* *hanasi-sika* si-nai-de oi-ta.
all.the.time mother-from-Top that talk-only do-Neg put-Past

'The mother talked about only that kind of thing all the time.'

The difference in acceptability between (44a) and (45a), on the one hand, versus (44b) and (45b), on the other hand, is naturally expected, given the configuration (43). In (43), the subject remaining in the base-generated position of the matrix clause falls outside the scope of *nai*, which resides in the embedded clause. On the other hand, the object lies inside the scope of negation. Accordingly, a subject-object asymmetry is observed with regard to NPI licensing.[16]

This pattern of distribution is found in a case where the subject is marked with nominative case, as seen in (46).[17]

(46) a. *Zutto *Ken-sika* hanasi-o si-nai-de oi-ta.
all.the.time Ken-only talk-Acc do-Neg put-Past

'Only Ken talked all the time.'

b. Zutto Ken-wa *sonna* *hanasi-sika* si-nai-de oi-ta.
all.the.time Ken-Top that talk-only do-Neg put-Past

'Ken gave only that kind of talk all the time.'

[16] In Hornstein's analysis (1999), which dispenses with PRO, the controller undergoes movement starting from the position where PRO is base-generated. Even if this analysis adopted, no problem arises, because only the overt position of the controller is relevant for NPI licensing.

[17] The dative-subject construction is not discussed here. This is because the aspectual construction with the verb *oku* 'put' is not acceptable when a dative-subject clause, which does not describe an event performed by the subject, is embedded.

The nominative subject in (46), unlike the oblique subjects in (44) and (45), should be moved to the matrix Spec-TP. Nevertheless, these subjects share the property that they are located in the matrix clause, and hence the subject NPIs are not licensed by *nai* regardless of their marking in the control construction where the negator precedes the verb *oku* 'put'.

On the other hand, when the negator follows the verb *oku* 'put', the subject NPIs are licensed under the scope of negation, as shown in (47).

(47) a. *Kodomo-tati-de-sika* asobi-no keikaku-o tate-te oka-nakat-ta.
child-Pl-Instr-only play-Gen plan-Acc make put-Neg-Past

'Only the children made a plan for their play.'

b. *Hahaoya-kara-sika* hanasi-o si-te oka-nakat-ta.
mother-from-only talk-Acc do put-Neg-Past

'Only the mother talked.'

c. *Ken-sika* hanasi-o si-te oka-nakat-ta.
Ken-only talk-Acc do put-Neg-Past

'Only Ken talked.'

What is more, there is an asymmetry in NPI licensing of temporal and locative adjuncts, as shown in (48).

(48) a. *John-wa *kinoo-made-sika* hataraka-nai-de oi-ta.
John-Top yesterday-until-only work-Neg put-Past

'John worked only until yesterday.'

b. Zutto John-wa *koko-de-sika* hataraka-nai-de oi-ta.
all.the.time John-Top here-in-only work-Neg put-Past

'John worked only here all the time.'

This distribution observed in (48) falls into place, if the temporal adjunct appears in the matrix clause, which is outside the scope of *nai* embedded under *iru*, but the locative adjunct does not.

The data indicate that in the control construction with the aspectual verb *oku*, all types of subjects appear in the matrix clause.

3.3. Summary

The overall patterns of subject raising that we have observed for the raising construction headed by the aspectual verb *iru* 'be' are shown in (49).

(49) a. [$_{TP}$ SUBJ-NOM [$_{TP}$ ~~SUBJ-NOM~~ [$_{vP}$ ~~SUBJ-NOM~~ (OBJ-ACC) V-v]]]

b. [$_{TP}$ SUBJ-DAT [$_{TP}$ ~~SUBJ-NOM~~ [$_{vP}$ ~~SUBJ-DAT~~ OBJ-NOM V-v]]]

c. [$_{TP}$ [$_{TP}$ [$_{vP}$ SUBJ-INSTR/-ABL V-v]]] (No Raising)

It should be apparent from (49) that the presence or absence of subject raising is correlated with the question of whether T has the case feature [+Nom], i.e. wherever T enters into a case relation with a nominative argument, i.e. T values the case feature of a nominative argument, subject raising is instantiated.

If the EPP is tied to nominative case, subject raising is instantiated in the nominative-subject construction as well as in the dative-subject construction, due to the fact that they need to contain a nominative argument, by virtue of the nominative-case constraint. The oblique subject constructions offer cases where subject raising may not be applicable, because the nominative case on the subjects can be replaced by oblique markers without affecting their acceptability if certain semantic criteria are met. (In the instrumental-subject construction, the subject needs to represent a plural agent, and in the ablative-subject construction, the subject needs to be construed as a source.)

In essence, the EPP requirement is not always imposed on T in Japanese; in ordinary clauses, subjects undergo A-movement to Spec-TP, because they are associated with the T that values the case feature on a nominative argument. Oblique subjects are not raised to Spec-TP when it is possible for the clause to be exempt from the nominative-case constraint via semantic-case replacement. Nevertheless, when nominative arguments are included elsewhere in the clauses, even the oblique subjects undergo raising to Spec-TP. The fact points to the conclusion that the EPP requirement on T is motivated when tense bears the case feature [+Nom] to value the case feature of a nominative argument. Since the EPP requirement is imposed on the T-head that values case features, the EPP should be tied to case (rather than agreement).

4. What Derives the Nominative-Case Constraint?

In the oblique-subject constructions, subject raising is not implemented if the clauses do not comprise any nominative argument. As noted earlier, Japanese has the nominative-case constraint, and the oblique-subject constructions, where semantic-case replacement takes place, constitute exceptions to this constraint (Inoue 1998, 2007).[18] This might give us the impression that semantic-case replacement always provides a way of voiding the nominative-case constraint. This is not the case, however. In (50a), the nominative case on the locative argument can be replaced by *kara* without affecting acceptability, but in (50b), the same

[18] Inoue (1998, 2007) observes that when subjects are marked with oblique case, the clause is exempt from the nominative-case constraint, but does not provide any explanation as to why this constraint does not apply in this case.

replacement results in unacceptability.

(50) a. Kodomo-ga kono heya-ga/-kara de-rare-nakat-ta.
child-Nom this room-Nom/-Abl leave-can-Neg-Past

'The child was unable to leave this room.'

b. Kodomo-ni kono heya-ga/*-kara de-rare-nakat-ta.
child-Dat this room-Nom/-Abl leave-Past

'The child was unable to leave this room.'

The sole difference between the two examples lies in the fact that whereas the subject is marked with nominative case in (50a), it is marked with dative case in (50b). The grammatical status of (50b) is comparable to that found in (51).

(51) Kodomo-ni kono heya-ga/*-o de-rare-nakat-ta.
child-Dat this room-Nom/-Acc leave-can-Neg-Past

'The child was unable to leave this room.'

Since the oblique *kara* cannot replace the nominative case in (50b), it should be apparent that owing to the nominative-case constraint, the dative-subject construction (50b) is ruled out as ungrammatical.

The data show that clauses with no nominative argument derived by replacing nominative case with a semantic case are not always legitimate (due to the nominative-case constraint). If this is the case, we are faced with a paradox: the nominative-case constraint does not apply when semantic-case replacement takes place on subjects, as demonstrated in section 3, but in (50b) the same semantic-case replacement cannot void the nominative-case constraint. Why is this the case?

The difference emerges depending on the property of tense. The crucial fact is that (50b) falls into a type of dative-subject construction. Since the dative case on the subject is licensed by T when the predicate (or to be more precise, the tense associated with the predicate) is stative (Kuno 1973), I suggest that the nominative-case constraint is enforced when T bears an uninterpretable case feature, but it is not when T does not carry any case feature to be used for deleting case features on arguments. Note that in Japanese, finite T does not always value the case feature on a nominative argument, which suggests that T can optionally bear the case feature [+Nom]. In the light of this fact, I propose that Japanese makes two kinds of T's available, which are distinguished according to whether or not they carry uninterpretable case features, and that when T bears case features, it always includes the most prominent case feature of [+Nom], which I claim is responsible for the nominative-case constraint.

An ordinary type of T is equipped with case features, and in the nominative-subject

construction, T comprises [+Nom], as in $T_{[+NOM]}$.[19] In the nominative-subject construction, the case feature on T is deleted via agreement with the case feature on the nominative subject. If there is an object, its case feature as well as the case feature on v is deleted by agreement. (If all the uninterpretable features are deleted, the derivation converges.)

(52) a. [$SUBJ_{[\text{+NOM}]}$ $OBJ_{[\text{+ACC}]}$ $v_{[\text{+ACC}]}$ $T_{[\text{+NOM}]}$]

b. [SUBJ ABL/INSTR $OBJ_{[\text{+ACC}]}$ $v_{[\text{+ACC}]}$ $T\phi$]

The nominative-case constraint applies to (52a), for T carries a case feature. Thus, the derivation does not converge if the clause does not have a nominative argument. On the other hand, the oblique markers *de* and *kara* do not require an external licenser, and if the nominative case on the subject is replaced by an oblique marker, T can appear without any case feature, as in (52b). In (52b), the derivation is legitimate, because the case feature on v is deleted in agreement with the case feature on the accusative object. Since T does not include any case features that need to be deleted in the derivation, (52b) is exempt from the nominative-case constraint, and hence the sentence is acceptable even if it does not comprise any nominative argument.

The nominative-case constraint cannot be voided in the dative-subject construction, where the subject is marked with dative case. The fact naturally falls out if tense is responsible for case licensing of dative case, as well as nominative case in the dative-subject construction, i.e. T is furnished with [+Dat] alongside [+Nom], as in $T_{[+DAT],\,[+NOM]}$. In (53a), the dative case feature is deleted in agreement with the case feature on the dative subject, and the nominative case feature can be deleted by the case feature on the nominative object.

(53) a. [$SUBJ_{[\text{+DAT}]}$ $OBJ_{[\text{+NOM}]}$ v $T_{[\text{+DAT}]\,[\text{+NOM}]}$]

b. *[$SUBJ_{[\text{+DAT}]}$ $OBJ_{[\text{+ACC}]}$ $v_{[\text{+ACC}]}$ $T_{[\text{+DAT}]\,[+NOM]}$]

c. *[$SUBJ_{[\text{+DAT}]}$ OBJ-ABL v $T_{[\text{+DAT}]\,[+NOM]}$]

Note, however, that even if nominative case on an object is replaced by an oblique marker, as in (53c), T needs to bear the case feature [+Dat] to license the dative subject, which means that T must participate in a case-licensing relation with an argument. In this case, [+Nom] appears on T, which needs to be deleted for the derivation to converge. In (53b-c), the derivation is not legitimate, because [+Nom] on T remains undeleted in the absence of a nominative argument. When T bears [+Nom], a violation of the nominative-case constraint is

[19] Pesetsky and Torrego (2001) suggests nominative case should be an unvalued tense feature on D, so that it is deleted in association with tense. In Chomsky (2000, 2001), manifestation of structural Case depends on the probe, and T values the case feature on an argument as nominative, and v as accusative, etc. But the Japanese facts illustrate that tense does not necessarily value the case feature of a nominative argument. Thus, the present analysis assumes that a case feature contained in the probe determines the case value of an argument, and that T and v contain [+Nom] and [+Acc], respectively.

incurred if nominative case is replaced by accusative case or the ablative *kara*. Thus, sentences where T contains a case feature cannot be well-formed unless they include nominative arguments.

Incidentally, if the dative case is replaced by *kara* in the dative-subject construction, the resulting clause does not result in unacceptability.

(54) Kodomo-ni/-kara kono heya-ga mie-nakat-ta.
child-Dat/-Abl this room-Nom see-Neg-Past

'The child was unable to see this room.'

In (54), when the dative case is replaced by the ablative *kara*, T comprising [+Nom] (but not [+Dat]) is merged. In this case, the sentence is not excluded as unacceptable, due to the presence of a nominative argument.

The present analysis taking tense to be responsible for the nominative-case constraint crucially draws on the assumption that the case feature of the dative subject is valued by T (Chomsky 2001, 2004, 2008). It is sometimes assumed (see e.g. Ura 1999), however, that dative case is construed as inherent case, which does not require the presence of an external licenser. Nevertheless, there is good reason to believe that the case feature on the dative subject is valued by T. To make this point, first consider (55).

(55) a. [PRO_{arb} kodomo-o home-ru] koto-wa ii koto da.
child-Acc praise-Pres fact-Top good thing Cop

'It is a good thing [PRO_{arb} to praise children].'

b. *[John-ga PRO_{arb} home-ru] koko-wa ii koto da.
John-Nom praise-Pres fact-Top good thing Cop

(Lit.) 'It is a good thing [for John to praise PRO_{arb}].'

The examples in (55) show that with a non-stative predicate, its nominative subject, but not an accusative object, can be turned into PRO_{arb}. In contrast, in the dative-subject construction, it is the dative rather than the nominative argument that can serve as PRO_{arb}, as seen in (56).

(56) a. [PRO_{arb} kodomo-ga home-rare-ru] koto-wa ii koto da.
child-Nom praise-can-Pres fact-Top good thing Cop

'It is a good thing [PRO_{arb} to be able to praise children].'

b. *[John-ni PRO_{arb} home-rare-ru] koko-wa ii koto da.
John-Dat praise-can-Pres fact-Top good thing Cop

(Lit.) 'It is a good thing [for John to be able to praise PRO_{arb}].'

According to Chomsky and Lasnik (1993), PRO is licensed by receiving null case from

infinitival T. In Japanese, a verb in the present form can be associated with infinitival T, and thus, (55a) and (56a) can have PRO_{arb} interpretation (see Kuroda 1983).[20] Given that PRO_{arb} occurs by replacing an argument appearing in subject position whose case feature is valued by finite T, it is reasonable to say that T is the case licenser of subjects in the dative-subject construction.[21]

There are cases where a dative argument is valued by the verb, rather than T. When a dative argument does not enter into an agreement relation with T, nominative case can be replaced by an oblique marker without affecting acceptability, as exemplified in (57).

(57) Haha-ga/-kara kodomo-ni hon-o atae-ta.
mother-Nom/-Abl child-Dat book-Acc give-Past

'The mother gave her child a book.'

The ditransitive predicate *ataeru* 'give' allows the nominative case marking of the source subject to be replaced by *kara* even in the presence of the dative argument. When the subject receives the oblique *kara*, no nominative argument shows up in the clause, but still, the sentence is acceptable. This is obviously due to the fact that the dative case of the indirect object in (57) is not valued by T. Empirical evidence in support of this view can be adduced from (58).

(58) a. Hon-ga kodomo-ni atae-rare-ta.
book-Nom child-Nom give-Pass-Past

'The book was given to the child.'

b. Kodomo-ga hon-o atae-rare-ta.
child-Nom book-Acc give-Pass-Past

'The child was given the book.'

The examples in (58) show that the dative object of the verb *ataeru* can be promoted to a passive subject via (direct) passivization, in the same way as the accusative object whose case feature is valued by v.[22] This fact suggests that the case feature of the dative argument

[20] Needless to say, no PRO_{arb} interpretation is available if the verb appears in the past form.

[21] The occurrence of PRO is restricted to a subject position, so that the nominative argument cannot be replaced by PRO even though T values its case feature.

[22] In this case, since the case feature of the dative argument is not valued by T, this argument cannot be turned into PRO_{arb}, as shown in (i).

(i) *[Hahaoya-ga PRO_{arb} hon-o atae-ru] koto-wa ii koto da.
mother-Nom book-Acc give-Pres fact-Top good thing Cop

'It is a good thing [for mothers to give books to PRO_{arb}].'

selected by the verb *ageru* is not valued by T. Thus, when the nominative case on the subject is replaced by *kara*, the T-head without a case feature can be merged. In this case, the nominative-case constraint does not apply to (57).

In a nutshell, the nominative-case constraint emerges from the property of tense. In unmarked cases, T bears [+Nom], and the clause needs at least one nominative argument, which carries a case feature that can delete [+Nom]. The derivation is legitimate when [+Nom] is successfully deleted in agreement with the case feature of a nominative argument. On the other hand, if nominative case on an argument is replaced by a semantic marker, T can appear without [+Nom]. In such a case, the nominative-case constraint is not implemented, as T does not contain [+Nom], and the sentence can be legitimate even without a nominative argument. In the dative-subject construction, T contains [+Dat] to be deleted in agreement with the case feature of the dative subject. Since this kind of T must carry [+Nom] as well, the nominative-case constraint cannot be rendered inapplicable, even if nominative case on a non-subject argument is replaced by an oblique marker.

5. Conclusion

In this paper, on the basis of the aspectual construction where a negator precedes the aspectual verb *iru*, it has been shown that nominative and dative subjects undergo raising to Spec-TP, while obliquely-marked subjects remain in the base position without subject raising (provided no nominative arguments are included in the clause). In Japanese, subject raising to Spec-TP is motivated when tense has an uninterpretable case feature [+Nom] to value the case feature on a nominative argument. Japanese makes two kinds of T available—one with an uninterpretable case feature, and the other without. When tense does not carry any case features, the EPP requirement is suspended, because the T that does not require a specifier can be merged to the clause. This analysis provides a ready account for the fact that even obliquely-marked subjects undergo raising to Spec-TP, in cases where T carries a case feature to value the case feature of a nominative argument. The overall conclusion is that in Japanese, when T has the case feature [+Nom], it carries [+EPP] as well, which suggests that the EPP is tied to case rather than agreement (in Japanese).

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CASE CHECKING/VALUATION IN JAPANESE: MOVE, AGREE OR MERGE?*

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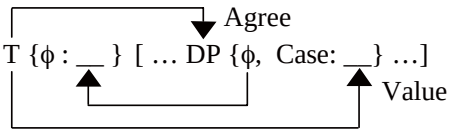
1. Introduction

Case marking in Japanese has been investigated within the generative framework since the 1960's, and various proposals have been made, reflecting the development of syntactic theory. Over a decade, Chomsky (2000, 2008) has been pursuing an approach to associate Case with ϕ-feature agreement. According to this approach, nominative, for example, obtains as in (1).

(1) 

T, with unvalued ϕ-features, probes and enters into Agree relation with a DP with an unvalued Case feature. As a result of this Agree relation, T obtains the values for its ϕ-features from the DP and values the Case of the DP as nominative. This approach, too, has been applied to Japanese with some fruitful results in works such as Ura (1999), Hiraiwa (2001a) and Takahashi (2010).

Particularly noteworthy in the light of this approach is the fact that PPs are Case marked extensively in Japanese. For example, (1) is an example of a "tough-sentence" with a nominative PP subject.

(2) Koko-kara-ga huzi-san-ni nobori-yasu-i
here-from-NOM Mt. Fuji-DAT climb-easy-Pres

'It is easy to climb Mt. Fuji from here.'

PPs are required to have genitive Case within a projection of N, as the examples in (3) show.

* This is a shortened version of the paper presented at the GLOW in Asia Workshop for Young Scholars, held on September 7–9, 2011 at Mie University. The material was presented also in seminars at Keio University, University of Connecticut and University of Maryland, and in a workshop at Nanzan University. I would like to thank the audiences at these places, especially, Hisatsugu Kitahara, Hideki Kishimoto, Norbert Hornstein and Željko Bošković, for helpful comments. The research reported here was supported in part by the Nanzan University Pache Research Grant I-A (2011).

Nanzan Linguistics 8, 109–127
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(3) a. Taroo-no oya-e-no izon
Taroo-GEN parents-to-GEN dependence

'Taroo's dependence on his parents'

b. ziyuu-kara-no toohi
freedom-from-GEN escape

'escape from freedom'

As PPs, as opposed to DPs, apparently lack ϕ-features, it is not obvious how Chomsky's approach can be extended to them.

It should be noted that whether the Case markers on PPs are indeed Case in the usual sense has been controversial. As (4) shows, any DP or PP in a projection of N (and D) accompanies *no* whether it is an argument or an adjunct.

(4) Hanako-no kinoo-no kaze-de-no kesseki
Hanako-GEN yesterday-GEN cold-with-GEN absence

'Hanako's absence yesterday due to a cold'

Okutsu (1974) proposes that the *no* attached to PPs and adjunct DPs is the prenominal form of the copula *da* as opposed to the genitive *no*. Watanabe (2010) assumes a similar distinction, calling the former *no* a 'linker'. On the other hand, An (2009) discusses the Korean counterpart of *no*, *uy*, and proposes that it is a kind of a prenominal inflection in all contexts, and consequently, that Korean does not have genitive Case in the usual sense. The basic idea is that the *uy*/*no* on PPs and adjunct DPs should be accounted for as a prenominal marker, and once this is done, the account should automatically extend to argument DPs as well.

In this paper, I basically follow An's (2009) approach, although I continue to call *no* the genitive Case since I think the issue is merely terminological. This is after all the traditional analysis: Bedell (1972) presents an analysis where *no* is inserted after any prenominal DP and PP. As this approach does not differentiate *no* on argument DPs from that on PPs, it implies that genitive in Japanese is independent of ϕ-feature agreement. In this paper, I extend An's proposal and suggest that Case in Japanese is in general part of the operation, Merge, instead. Just as Case in English is required for Agree and is valued through Agree, I suggest that Case in Japanese is required for Merge and is valued through Merge. For *no*, for example, I propose that Case is required on DPs and PPs for merger with a nominal projection, and is valued as genitive through merger with N-D.

In the following section, I briefly discuss the distribution and interpretation of nominative objects and show that it is desirable to seek an alternative to the Agree-based analysis for this case also. In Section 3, I introduce the Merge-based analysis and illustrate it with some concrete examples. In Section 4, I discuss some consequences of the analysis. I first show that the analysis allows a rather straightforward account of the distribution of

genitive arguments in prenominal sentential modifiers. Then, I argue that it opens up a way to apply Kayne's (1994) LCA to Japanese and derive the head-finality of its phrase structure. Section 5 concludes the paper.

2. A Little Historical Background on the Analysis of Nominative Objects

In Japanese, the object is normally in accusative as in (5a), but carries nominative Case when the predicate is stative. (5b) is a representative example.[1]

(5) a. Taroo-ga wani-o/*-ga tabe-ta (koto)
Taroo-NOM alligator-ACC/-NOM eat-Past fact

'(the fact that) Taroo ate alligator meat'

b. Hanako-ni/-ga bakudai-na syakkin-ga/*-o ar-u (koto)
Hanako-DAT/-NOM immense debt-NOM/-ACC have-Pres fact

'(the fact that) Hanako has a huge debt'

c. Taroo-ga wani-o/-ga tabe-rare-ru (koto)
Taroo-NOM alligator-ACC/-NOM eat-can-Pres fact

'(the fact that) Taroo can eat alligator meat'

As the predicate in (5c) consists of the non-stative *tabe* 'eat' and the stative verbal suffix *(rar)e* 'can', the object can be in either accusative or nominative. The distribution and interpretation of nominative objects as in (5b–c) have been a central topic of research in Japanese syntax, especially in the past twenty years. In this section, I first discuss the movement analysis of Tada (1992) and Koizumi (1999), and then go over Ura's (1999) Agree-based analysis. Both approaches have provided much insight into the phenomenon, but I argue that neither of them is satisfactory.

2.1. Tada and Koizumi's Overt Movement Analysis

Tada's (1992) discussion of the contrast in (6), originally observed in Sano (1985), has renewed interest in Japanese nominative objects among syntacticians.

(6) a. Kiyomi-wa migime-dake-o tumur-e-ru (can > only)
Kiyomi-TOP right.eye-only-ACC close-can-Pres

'Kiyomi can wink with her right eye.'

[1] Some predicates allow the subject to be in dative when the object is in nominative. *Ar* 'be, have' in (5b) is one of them.

b. Kiyomi-wa migime-dake-ga tumur-e-ru (only > can)
Kiyomi-TOP right.eye-only-NOM close-can-Pres

'It is only her right eye that Kiyomi can close.'

It had been assumed that Case on the object has little effect, if any, on interpretation, but these examples indicate that nominative objects take wider scope than accusative objects. The accusative object in (6a) scopes under the higher predicate *e* 'can' but the nominative object in (6b) scopes over it.[2] Tada proposed that this is because accusative is checked within the projection of the verb *tumur* 'close' while the nominative is licensed within the projection of the stative verbal affix *e* 'can'. According to his analysis, the nominative object in (6b) moves as in (7) and hence, takes wide scope over *e* 'can'.[3]

(7) $[_{TP}$ Kiyomi-wa $[_{T'}$ $[_{VP}$ $[_{V'}$ $[_{VP}$ right.eye-only-NOM close]-can]]-Pres.]]

Koizumi (1998), on the other hand, observes that nominative objects take yet higher scope than predicted by Tada's analysis. He shows that nominative objects even scope over negation as in (8).

(8) Kiyomi-ga migime-dake-ga tumur-e-na-i (koto) (only > not > can)
Kiyomi-NOM right-eye-only-NOM close-can-Neg-Pres fact

'(the fact that) it is only her right eye that Kiyomi cannot close'

He then proposes that nominative objects are licensed within the projection of T as in (9).

(9) $[_{TP}$ Kiyomi-wa $[_{T'}$ $[_{T'}$ $[_{NegP}$ $[_{VP}$ $[_{VP}$ right.eye-only-NOM close]-can]-Neg]-Pres.]]]

Koizumi's analysis is attractive as it implies that nominative is licensed uniformly by T whether it is on the subject or on the object. However, it shares a problem with Tada's analysis, to which I now turn.

The problem is that the movement operation illustrated in (7) and (9) does not observe the locality expected of NP-movement.[4] Let us first consider the example of causative in (10) because the point can be best illustrated with this construction.

[2] Nomura (2005) presents some examples in which nominative objects seem to scope under *e* 'can' and questions the Sano-Tada generalization. However, as the pattern in (6) is observed quite generally, I believe it reflects a hierarchical relation in phrase structure as Tada proposed. See Takahashi (2010) for an analysis based on the assumption that nominative objects can take narrow scope.

[3] Tada (1992) assumes the AGR-based Case theory and proposes that the nominative object moves to the Spec position of AGR projected over *e* 'can'. I present a simplified version of his analysis here.

[4] For a more detailed discussion on this point, see Saito (1982) and the references cited there.

(10) Hanako$_i$-ga [$_{vP}$ Taroo$_j$-ni [$_{VP}$ zibun$_{i,j}$-no wani-o tabe]]-sase-ta (koto)
Hanako-NOM Taroo-DAT self-GEN alligator-ACC eat-make-Past fact

'(the fact that) Hanako made Taroo eat her/his (pet) alligator'

It has been known since Kuroda (1965) that the causative morpheme *sase* takes a clausal complement. (10) confirms this. The causee *Taroo* can be the antecedent of the subject-oriented reflexive *zibun*, and hence, it should be the subject of the embedded clause. I assume that the clausal complement is a *v*P, following Murasugi and Hashimoto (2004). The hypothesis is further confirmed by the fact that the object cannot be passivized out of a causative complement as shown in (11).

(11) *wani-ga$_i$ Hanako-niyotte [$_{vP}$ Taroo$_j$-ni [$_{VP}$ t_i tabe]]-sase-rare-ta (koto)
alligator-NOM Hanako-by Taroo-DAT eat-make-Passive-Past fact

'*Lit*. (the fact that) the alligator was made by Hanako to be eaten by Taroo'

This is expected as the movement crosses the embedded subject *Taroo* in violation of minimality.

Let us return to nominative objects with this background. As shown in (12), the object in the causative construction can be in nominative when the potential suffix *(rar)e* 'can' is attached to the causative verb.

(12) Hanako-ga [$_{vP}$ Taroo-ni [$_{VP}$ wani-o/-ga tabe]]-sase-rare-ru (koto)
Hanako-NOM Taroo-DAT alligator-ACC/-NOM eat-make-can-Past fact

'(the fact that) Hanako can make Taroo eat alligator meat'

This is totally unexpected under the movement analysis of nominative objects. According to Koizumi's (1998) analysis, for example, the nominative object in (12) must move to the inner Spec of T to have its Case licensed. But then, the movement should violate minimality exactly as in the case of (11). The same problem arises with Tada's analysis because the nominative object must move across the embedded subject in order to land within the projection of *(rar)e* 'can'.

Koizumi (1998), as noted above, demonstrated that nominative objects take scope over negation and argued that this is because their Case is licensed by T. The discussion above, however, indicates that they do not move to a Spec position of T. These considerations naturally lead to the hypothesis that T values nominative through the operation Agree. In the next subsection, I consider Ura's (1999) Agree-based analysis.

2.2. Ura's Analysis with Covert Feature Movement/Agree

To my knowledge, Ura (1999) is one of the first works that propose an analysis of

nominative objects in terms of Agree.[5] He first argues against Koizumi's (1998) movement analysis based on examples of the following kind:

(13) Hanako$_i$-ni/-ga Taroo$_j$-ga zibun$_{i,*j}$-no ie-de sikar-e-ru (koto)
Hanako-DAT/-NOM Taroo-NOM self-GEN house-at scold-can-Pres fact

'(the fact that) Hanako can scold Taroo at her/*his house'

This example shows that a nominative object does not qualify as the antecedent for the subject-oriented *zibun* 'self'. However, Koizumi's analysis predicts that it should if subject is defined as a phrase in TP Spec. Ura concludes then that nominative objects do not move to a position within the projection of T.[6]

Ura, then, goes on to propose that T checks the Case feature of nominative objects through Agree. This predicts that nominative objects stay in situ, and hence, readily accounts for (12), where a nominative object appears in the complement of a causative verb. But a problem remains with the scope property of nominative objects. Koizumi's crucial example in (8) is repeated below as (14).

(14) Kiyomi-ga migime-dake-ga tumur-e-na-i (koto) (only > not > can)
Kiyomi-NOM right-eye-only-NOM close-can-Neg-Pres fact

'(the fact that) it is only her right eye that Kiyomi cannot close'

For this, Ura suggests that the Agree relation yields the wide scope of the object. As T licenses the nominative Case on the object, the object takes scope at T.

However, it is shown in Lasnik and Saito (1991) that Agree relation does not affect scope. The examples in (15) demonstrate this.

(15) a. Fewer than five knights$_i$ [$_{VP}$ appeared t_i at the gate] every day
(fewer than five > every, every > fewer than five)

b. There [$_{VP}$ appeared fewer than five knights at the gate] every day
(every > fewer than five)

In (15a), *fewer than five knights* moves from the object position to TP Spec. Thus, the example exhibits a scope ambiguity between this DP and *every day*. In (15b), on the other hand, T enters into Agree relation with the DP, but the DP stays in situ. In this case, it cannot scope over *every day*. This shows that Agree does not suffice to account for the wide scope

[5] His analysis appeals to covert feature movement. But it is equivalent to Agree as covert feature movement was in effect reanalyzed as Agree in Chomsky (2000).

[6] Note that examples like (10) indicate that the antecedent of *zibun* is not limited to phrases in TP Spec. Hence, it is necessary to reexamine what constitutes "subjects" in the relevant sense to see if this argument goes through. See Saito (2011) for relevant discussion.

property of Japanese nominative objects.

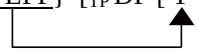
3. A Preliminary Merge-Based Analysis of Japanese Case

It was argued in the preceding section that neither movement nor Agree successfully captures the distribution and interpretation of nominative objects. In this section, I suggest an alternative Merge-based analysis. In Section 3.1, I motivate the general approach. Then, in Section 3.2, I present the details of the analysis with some concrete examples.

3.1. What is Japanese Case for?

Chomsky (2000) proposes that Case is a reflex of ϕ-feature agreement. Case is required on a DP to participate in agreement and is checked through the agreement. This is embedded in a system with feature-inheritance in Chomsky (2008). It is proposed there that phase heads are the locus of unvalued/uninterpretable features. Thus, C, for example, carries ϕ-features and the EPP, and transmits them to T as illustrated in (16).

(16) [C{ϕ, EPP} [$_{TP}$ DP [T [$_{vP}$ DP{Case} ….



T, then, probes a DP with unvalued Case feature and enters into Agree relation with the DP. The ϕ-features on T are valued by the DP and the Case feature on the DP is valued as nominative by T through this Agree relation. Finally, the EPP on T raises the DP to its Spec. Thus, Case is required for ϕ-feature agreement and is valued through ϕ-feature agreement.

However, as noted at the outset of this paper, Case is observed on PPs extensively in Japanese. The relevant examples in (2) and (3a) are repeated below as (17a–b).

(17) a. Koko-kara-ga huzi-san-ni nobori-yasu-i
here-from-NOM Mt. Fuji-DAT climb-easy-Pres

‘It is easy to climb Mt. Fuji from here.’

b. Taroo-no oya-e-no izon
Taroo-GEN parents-to-GEN dependence

‘Taroo’s dependence on his parents’

The nominative Case in (17a) and the genitive Case on PP in (17b) cannot be a reflex of ϕ-feature agreement as PPs do not carry ϕ-features. Then, what is Japanese Case for if it is not part of ϕ-feature agreement?

Since the only operations in Minimalist syntax are Agree and Merge, Merge is a plausible candidate. That is, if Case is not a precondition for a phrase to participate in Agree, it is likely to be required of a phrase to participate in Merge. For genitive Case, this is in fact a restatement of An’s (2009) idea noted above that genitive is a kind of prenominal inflection.

The initial hypothesis can be stated as in (18).

(18) a. Case is required on DPs and PPs for merger with N and D.
b. Case is required on argument DPs for merger with V and A.
c. Case is required on argument DPs and PPs for merger with *v*.

(18b–c) stipulate that an argument PP must have a Case in a sentence only when it is a subject as in (17a).

If Case in Japanese is required for Merge, it seems equally plausible that it is valued by this operation. Let us then hypothesize that Case is valued through Merge as in (19).

(19) a. Case is valued as nominative by merger with T-C.
b. Case is valued as accusative by merger with (transitive) V-*v*.
c. Case is valued as genitive by merger with N-D.

If the locus of nominative is C and it is inherited by T, this yields a more or less standard derivation for examples like (20a).

(20) a. Taroo-ga hasir-u
Taroo-NOM run-Pres

'Taroo runs.'

b. $[_{CP}\,[_{TP}$ Taroo-Case$_i$ $[_{T'}\,[_{vP}\,t_i\,[[_{VP}$ hasir] *v*]] T]] C]

As *Taroo* carries Case, it can be merged at *v*P Spec for thematic interpretation. The Case, however, is not valued at this position. The DP then must move and merge at TP Spec for the Case to be valued nominative.

If this mechanism is assumed as is, it leads to a notational variant of Koizumi's (1998) analysis for nominative objects. They must carry Case to be merged at the object position for thematic interpretation. If the V-*v* in the relevant cases lacks the ability to value accusative, they must move to TP Spec to have their Case valued as nominative. But it was shown in the preceding section that they do not move to TP Spec. It seems then that we have a paradox. Nominative objects must be merged with T but they do not move to TP Spec. In the following section, I suggest a way out of this problem, developing Shimada (2007) and Tonoike's (2009) hypothesis on phrase structure building.

3.2. Phrase Structure Building with Excorporation

Shimada (2007) and Tonoike (2009) propose an original way to derive phrase structure. For clauses, they assume that the derivation starts with a complex of heads, C-T-*v*-V. If the verb is transitive, the object merges with this complex as in the first step of (21).

(21) C-T-*v*-V ①→{C-T-*v*-V, DP_1} ②→{C-T-*v*, {V, DP_1}} ③→{DP_2, {C-T-*v*, {V, DP_1}}} ④→ {C-T, {DP_2, {*v*, {V, DP_1}}}} ⑤→{DP_2, {C-T, {DP_2, {*v*, {V, DP_1}}}}} ⑥→ {C, {DP_2, {C-T, {DP_2, {*v*, {V, DP_1}}}}}}

Then, C-T-*v* excorporates as in step 2, creating a *v*P. This *v*P merges with the subject DP in step 3, and C-T exporporates in step 4 to create a TP. The subject is internally merged with this TP in step 5. The final product after the excorporation of C in step 6 is the CP structure.

Both Shimada and Tonoike propose this derivation to maintain the extension condition in the strict form. Shimada argues that it allows head movement to observe the condition. Tonoike, on the other hand, points out that the derivation of Chomsky (2008) illustrated in (16) forces a counter-cyclic movement of the subject to TP Spec. This problem does not arise in the derivation in (21).

The Shimada–Tonoike proposal is of particular interest in the present context because it allows a nominative object to merge with T without moving to TP Spec. Recall the problem noted in the preceding subsection: nominative is valued through merger with T but nominative objects do not raise to TP Spec. In step 1 of (21), the object is directly merged with a complex that includes T as well as V. In the remainder of this section, I adapt their main idea and suggest a way to account for the distributions of Cases in Japanese.

First, I suggest that a head complex is formed initially because a derivation starts with a phase head and proceeds to satisfy selectional requirements. Let us take (22) to illustrate how this works.

(22) Hanako-ga Taroo-o sikat-ta
Hanako-NOM Taroo-ACC scold-Past

'Hanako scolded Taroo.'

As *v*P is the smallest phase in the example, the derivation starts with *v*. It first merges with V as in (23a) because it selects for a V.

(23) a. {<u>V, *v*</u>} (accusative)
b. {DP_1-<u>ACC</u>, {<u>V, *v*</u>}}
c. {{DP_1-<u>ACC</u>, V}, *v*}
d. {DP_2-Case, {{DP_1-<u>ACC</u>, V}, *v*}}
e. {<u>T, C</u>} (nominative)
f. {{DP_2-Case, {{DP_1-<u>ACC</u>, V}, *v*}}, {<u>T, C</u>}}
g. {DP_2-<u>NOM</u>, {{DP_2-Case, {{DP_1-<u>ACC</u>, V}, *v*}}, {<u>T, C</u>}}}
h. {{DP_2-<u>NOM</u>, {{DP_2-Case, {{DP_1-<u>ACC</u>, V}, *v*}}, T}}, C}

The object DP is merged in (23b) to satisfy the selectional requirement of V. As the merger is to V-*v*, the Case on the DP is valued as accusative. Then, *v* excorporates in (23c) to create a *v*P as it should have VP as its complement. The subject DP is merged with this *v*P and

satisfies the selectional requirement of *v* in (23d).

The derivation moves on to the next phase in (23e). The phase head C selects T, and hence the T-C complex is formed. *v*P is merged with this complex in (23f) because of the selectional property of T. At this stage, the Case on the subject is still unvalued. So the subject DP internally merges with {*v*P, {T, C}} as in (23g) so that the Case is valued as nominative. The assumption here is that the Case on XP is valued if XP is merged with a syntactic object that contains the value assigner. In the case of (23g), this in effect means that T-C values nominative on XP in its Spec. Finally, C excorporates to complete the derivation in (23h).

The in-situ property of nominative objects follows with one additional assumption: I assume, following Takahashi (2010), that *v* is a phase head if and only if it values accusative. Let us consider (24) for illustration.

(24) Hanako-ga rosiago-ga wakar-u (koto)
Hanako-NOM Russian-NOM understand-Pres fact

'(the fact that) Hanako understands Russian'

As *v* in this example does not value accusative, it is not a phase head by assumption. Then, the derivation starts with the only phase head C as in (25a).

(25) a. {T, C} (nominative)
b. {*v*, {T, C}}
c. {V, {*v*, {T, C}}}
d. {DP_1-NOM, {V, {*v*, {T, C}}}}
e. {{DP_1-NOM, V}, {*v*, {T, C}}}
f. {DP_2-NOM, {{DP_1-NOM, V}, {*v*, {T, C}}}}
g. {{DP_2-NOM, {{DP_1-NOM, V}, *v*}}, {T, C}}
h. {DP_2-NOM, {{DP_2-NOM, {{DP_1-NOM, V}, *v*}}, {T, C}}}
i. {{DP_2-NOM, {{DP_2-NOM, {{DP_1-NOM, V}, *v*}}, T}}, C}

The derivation proceeds as in (25b) and (25c) as T and *v* select *v* and V respectively. In (25d), the object is merged with this complex and the Case is valued as nominative simultaneously because the complex contains T-C. Then, *v*-T-C excorporates in (25e) to yield a *v*P. The external argument is merged with this *v*P in (25f), and its Case is valued as nominative. T-C excorporates in (25g), and I assume here that the subject is raised to TP Spec as in (25h) to satisfy the EPP requirement of T-C.[7] Finally, C excorporates to complete the derivation in (25i). Note that the object is merged at the thematic position and its Case is valued as nominative at this position by T-C. Thus, this analysis allows nominative objects to have their Cases valued by T-C without moving to TP Spec, a desirable result.

[7] Whether this EPP-triggered raising applies is not important for the proposal made here. See Saito (2011) and the references cited there for discussion on EPP in Japanese.

The analysis readily extends to genitives. I use (26) to demonstrate this.

(26) Taroo-no yooroppa-e-no ryokoo
Taroo-GEN Europe-to-GEN trip

'Taroo's trip to Europe'

The only phase head, I assume, is D. The derivation in (27) starts out with the merger of N and D as in (27a).

(27) a. {N, D} (genitive)
b. {PP-GEN, {N, D}}
c. {DP-GEN, {PP-GEN, {N, D}}}
d. {{DP-GEN, {PP-GEN, N}}, D}

Then, the PP and the subject DP are merged as in (27b) and (27c) respectively. Recall that both must have Case to be merged in this context as specified in (18a). And their Cases are both valued as genitive because of the presence of N-D in the syntactic objects they merge with. The derivation is completed with the excorporation of D in (27d).

The illustrations so far, I believe, made it clear how the proposed Merge-based analysis works. Instead of going over more examples to demonstrate its empirical coverage, I discuss a couple of consequences of the analysis in the next section.

4. Some Consequences of the Merge-Based Analysis

I first consider the nominative/genitive alternation in prenominal sentential modifiers in Section 4.1 and demonstrate that the Merge-based analysis allows a straightforward analysis. Then, in Section 4.2, I return to the wide scope property of nominative objects and show that its Merge-based analysis opens up a new way to apply Kayne's (1994) LCA to Japanese.

4.1. The Nominative/Genitive Alternation

An alternation between nominative and genitive is observed in Japanese prenominal sentential modifiers as in (28).

(28) Taroo-ga/-no ongaku-ga/-no kik-e-ru basyo
Taroo-NOM/-GEN music-NOM/-GEN listen-can-Pres place

'a place where Taroo can isten to music'

As the predicate *kik-e-ru* 'listen-can-Pres' in the relative clause is stative, it is not surprising that the subject *Taroo* and the object *ongaku* 'music' can both appear in nominative. What is peculiar is that both can appear in genitive as well.

I assume here, following Maki and Uchibori (2008), that genitive is possible in this

context because of the presence of the relative head, or more precisely, N-D.[8] This implies that a relative clause does not constitute a phase as it does not block the relevant relation between the relative head and the genitive phrase(s) within the relative clause. This is assumed, for example, in Ochi (2001), which proposes that D licenses the genitive(s) through Agree.[9] It is also plausible in the light of Murasugi's (1991) proposal that Japanese relative clauses are TPs and not CPs. For example, they never contain relative pronouns or complementizers. Given the hypothesis entertained here that nominative is valued by T-C, Japanese relative clauses must be headed by C. I assume then that the C is "defective," probably the lowest C, the Subject head, in Rizzi's (1997) CP hierarchy. It is not a phase head but participates in the valuation of nominative.

Given these assumptions, the nominative/genitive alternation in (28) follows from the Merge-based analysis outlined in the preceding section. (29) is a slightly simplified derivation of the example that takes *kik-e* 'listen-can' as a simple stative verb.

(29) a. {N, D} (genitive)
b. {C, {N, D}}
c. {T, {C, {N, D}}} (nominative)[10]
d. {*v*, {T, {C, {N, D}}}}
e. {V, {*v*, {T, {C, {N, D}}}}}
f. {DP_1-NOM/GEN, {V, {*v*, {T, {C, {N, D}}}}}}
g. {{DP_1-NOM/GEN, V}, {*v*, {T, {C, {N, D}}}}}
h. {DP_2-NOM/GEN, {{DP_1-NOM/GEN, V}, {*v*, {T, {C, {N, D}}}}}}
i. {{DP_2-NOM/GEN, {{α, V}, *v*}}, {T, {C, {N, D}}}}, α = DP_1-NOM/GEN
j. {DP_2-NOM/GEN, {{DP_2-NOM/GEN, {{α, V}, *v*}}, {T, {C, {N, D}}}}}
k. {{DP_2-NOM/GEN, {{DP_2-NOM/GEN, {{α, V}, *v*}}, T}}, {C, {N, D}}}
l. {{{DP_2-NOM/GEN, {{DP_2-NOM/GEN, {{α, V}, *v*}}, T}}, C}, {N, D}}
m. {{{{DP_2-NOM/GEN, {{DP_2-NOM/GEN, {{α, V}, *v*}}, T}}, C}, N}, D}

The head complex V-*v*-T-C-N-D is formed in (29a–e). The object is merged in (29f), and its Case can be valued as nominative or genitive as the head complex contains T-C as well as N-D. *v*-T-C-N-D excorporates in (29g) and the subject DP is merged in (29h). Here too, the Case of the subject can be valued as nominative or genitive for the same reason. (29i) shows the

[8] See Hiraiwa (2001b) for an alternative and Maki and Uchibori (2008) for discussion of the issues related to this assumption.

[9] Ochi (2001) actually proposes an analysis in terms of covert feature movement. But his analysis can be readily restated in terms of Agree.

[10] Here, T and C are not directly merged. The tacit assumption here, informally speaking, is that C is the head (or label) of α = {C, {N, D}} and hence, {T, α} values nominative. Note that DP and V are thematically related, for example, in {DP, {V, *v*}}. Then, V must be "visible" to DP in this configuration just as C is visible to T in {T, {C, {N, D}}}. I leave the precise formulation of "visibility" to future research.

excorporation of T-C-N-D. The subject is internally merged to TP as in (29j) if this is required by the EPP. Three successive excorporations in (29k–m) complete the derivation.

This derivation demonstrates that once the defectiveness of C is assumed, which seems necessary under any account, the nominative/genitive alternation follows from the Merge-based analysis of Japanese Case. A desirable consequence of this approach is that it automatically explains the absence of genitive on PPs and adjunct DPs in prenominal sentential modifiers. As noted above, genitive is required on adjunct DPs within simple DPs. Another relevant example is shown in (30a).

(30) a. Hanako-no kinoo-*(no) ikisaki
Hanako-GEN yesterday-GEN destination

'Hanako's destination yesterday'

b. Hanako-no kinoo-(*no) it-ta tokoro
Hanako-GEN yesterday-GEN go-Past place

'the place that Hanako went yesterday'

However, those DPs cannot be in genitive in relative clauses as (30b) shows. This follows from the hypothesis that Case is required for Merge as in (18), repeated below in (31).

(31) a. Case is required on DPs and PPs for merger with N/D.
b. Case is required on argument DPs for merger with V and A.
c. Case is required on argument DPs and PPs for merger with *v*.

The adjunct DP, *kinoo* 'yesterday', is merged with N in (30a) and hence, must carry Case. The Case is valued as genitive by N-D. That in (30b), on the other hand, is merged with V. As only argument DPs are required to have Case in this context, no Case shows up on *kinoo* 'yesterday' in (30b).

If one adopts the Agree-based analysis, it would probably be necessary to assume that the *no* on *Hanako* is Case that is valued by Agree while that on *kinoo* 'yesterday' is something else, a linker or prenominal inflection, that appears only prenominally. There is no need to make this distinction with the Merge-based analysis proposed here.

4.2. Head-Finality as a Consequence of Covert Excorporation

In this section, I return to the wide scope property of nominative objects and discuss its consequence for linearization. I argue that the proposals on phrase structure building and Case valuation outlined above open up a new way to derive the head-finality of Japanese from Kayne's (1994) LCA.

Let us consider again the contrast discussed by Tada (1992) in (6), repeated below in (32).

(32) a. Kiyomi-wa migime-dake-o tumur-e-ru (can > only)
Kiyomi-TOP right.eye-only-ACC close-can-Pres

'Kiyomi can wink with her right eye.'

b. Kiyomi-wa migime-dake-ga tumur-e-ru (only > can)
Kiyomi-TOP right.eye-only-NOM close-can-Pres

'It is only her right eye that Kiyomi can close.'

The narrow scope of the accusative object in (32a) should be attributed the fact that the accusative is valued by the V-*v* associated with the non-stative *tumur* 'close'. Then, *e* 'can' takes a *v*P complement, and the example should be derived as in (33)–(34).

(33) a. {close, *v*} (accusative)
b. {DP only-ACC, {close, *v*}}, DP = right eye
c. {{DP only-ACC, close}, *v*}
d. {K-Case, {{DP only-ACC, close}, *v*}}, K = Kiyomi

(33) shows the derivation of the embedded *v*P. The accusative is valued when the object is merged with V-*v* in (33c).

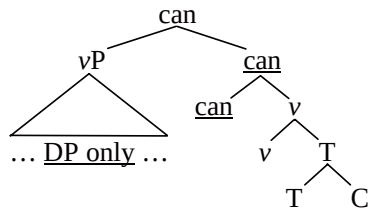
(34) is the derivation of the matrix CP phase.

(34) e. {T, C} (nominative)
f. {*v*, {T, C}}
g. {can, {*v*, {T, C}}}
h. {{K-Case, {{DP only-ACC, V}, *v*}}, {can, {*v*, {T, C}}}}, V = close
i. {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, {*v*, {T, C}}}
j. {K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, {*v*, {T, C}}}}[11]
k. {{K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, *v*}}, {T, C}}
l. {K-NOM, {{K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, *v*}}, {T, C}}}
m. {{K-NOM, {{K-Case, {{{K-Case, {{DP only-ACC, V}, *v*}}, can}, *v*}}, T}}, C}

(34e–g) form the matrix *can*-*v*-T-C complex. Then, in (34h), the embedded *v*P is merged with this complex. The accusative object is contained within the *v*P while *can* is plausibly the head (or label) of the head complex. (See Fn.10 for relevant discussion.) Then, the scope relation, can > only, can be read off from this structure as illustrated in (35).

[11] The subject *Kiyomi* is the external argument of *tumur* 'close' as well as of *e* 'can'. In (34j), I assume that it moves from the embedded *v*P Spec to the matrix *v*P Spec in order to account for this. But an alternative with PRO in the embedded *v*P Spec also serves the purpose.

(35)

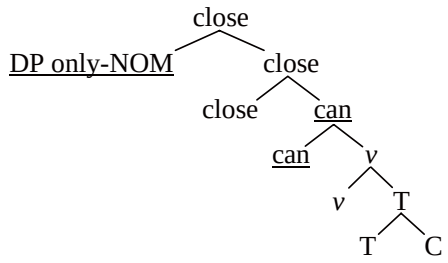


Thus, the narrow scope property of accusative objects seems straightforward. On the other hand, the wide scope property of nominative objects has an interesting implication. Let us consider the derivation of (32b) in (36).

(36) a. {T, C} (nominative)
b. {*v*, {T, C}}
c. {can, {*v*, {T, C}}}
d. {close, {can, {*v*, {T, C}}}}[12]
e. {DP only-NOM, {close, {can, {*v*, {T, C}}}}}
f. {{DP only-NOM, close}, {can, {*v*, {T, C}}}}
k. {{{DP only-NOM, close}, can}}, {*v*, {T, C}}}
l. {K-Case, {{{DP only-NOM, close}, can}}, {*v*, {T, C}}}}
m. {{K-Case, {{{DP only-NOM, close}, can}}, *v*}}, {T, C}}
n. {K-NOM, {{K-Case, {{{DP only-NOM, close}, can}}, *v*}}, {T, C}}}
o. {{K-NOM, {{K-Case, {{{DP only-NOM, close}, can}}, *v*}}, T}}, C}

As no Case is valued accusative in this example, the only phase head is C. The derivation, then, starts with C, and the *close-can-v*-T-C complex is formed in (36a–d). The object is merged with this complex in (36e), and the Case is valued nominative because of the T-C in the complex. At this point, the object c-commands *can* as in (37).

(37)



This accounts for the wide scope of the nominative object, but there is one further thing that must be said. Note that *can-v*-T-C excorporates in the next step of the derivation, (36f). The excorporation creates a configuration similar to (35). Then, if the scope relation is calculated based on this structure, it is predicted incorrectly that nominative objects at least

[12] I assume, following Bobaljik and Wurmbrand (2007), that *e* 'can' selects for a V and takes a VP complement when the object of the V is in nominative. This is not crucial for the analysis proposed here.

can have narrow scope. This indicates that excorporation is "invisible" and ignored in the calculation of the scope relation.

Here, there must be a reason for the "invisibility" of excorporation for scope. And the desired result is obtained if the excorporation is covert. As is well known, Japanese is a language with scope rigidity. Thus, (38) is unambiguous and its interpretation reflects the hierarchical relation of the two quantified phrases.[13]

(38) dareka-ga daremo-o aisitei-ru (koto) (∃ > ∀)
someone-NOM everyone-ACC love-Pres fact

'(the fact that) someone loves everyone'

The scope relations in (32) can be understood as instances of this general phenomenon. As Kuroda (1971) points out, overt movement affects scope relations. (39a–b) are both ambiguous.

(39) a. daremo-o$_i$ dareka-ga t_i aisitei-ru (koto) (∀ > ∃, ∃ > ∀)
everyone-ACC someone-NOM love-Pres fact

'(the fact that) someone loves everyone'

b. dareka-o$_i$ daremo-ga t_i aisitei-ru (koto) (∃ > ∀, ∀ > ∃)
someone-ACC everyone-NOM love-Pres fact

'(the fact that) everyone loves someone'

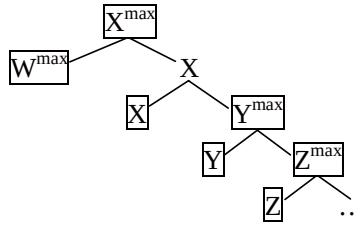
But covert movement should have no effects on scope. If QR, for example, can broaden the scope possibilities, (38) should not be unambiguous to begin with. Hence, the account of (32b) based on (37) can be maintained if excorporation is covert in Japanese.[14]

Although this may sound like a stipulation to accommodate the wide scope property of nominative objects, it predicts the head-finality of Japanese in an interesting way. Kayne (1994) proposes that linear order is derived from asymmetric c-command relations (Linear Correspondence Axiom, LCA). Let us consider the configuration in (40), assuming Chomsky's (1994) refinement that only maximal projections and heads count in the calculation of linear order.

[13] There are variations among speakers with this. But as far as I know, the strongly preferred reading of (38) is the one with *someone* taking scope over *everyone* for all speakers.

[14] Note that this does not alter the derivations illustrated above if all operations, overt and covert, take place in a single cycle. I assume with Bobaljik (1995) that overt and covert movements apply in the same way, the only difference being that the phonetic features are interpreted at the landing site in the former while they receive interpretation at the initial site in the case of the latter.

(40)

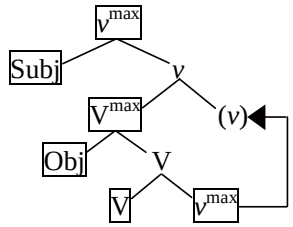


$W^{max} > X$, $W^{max} > Y^{max}$, $W^{max} > Y$, $W^{max} > Z^{max}$,
$W^{max} > Z$, $X > Y$, $X > Z^{max}$, $X > Z$, $Y > Z$, …

Stated on the right are the asymmetrical c-command relations observed with this structure. The linear order, $W^{max} > X > Y > Z$, is derived from these relations.

Kayne's LCA predicts the head-initial, spec–head–complement order. Hence, he entertains the possibility that the head-final, spec–complement–head order is derived by movement of the complement to a position that asymmetrically c-commands the head. However, the head-finality of Japanese automatically follows without further complication if excorporation is covert in the language. The only additional assumption required is virtually the definition of overt/covert movement: what enters into the calculation of linear order is the landing site in the case of overt movement and the initial site in the case of covert movement. Let us consider the *v*P structure in (41) for illustration.

(41)



Subj > Obj, Subj > V, Subj > v^{max},
Obj > V, Obj > v^{max}

V and *v* merge first, and then the object DP merges with V-*v*. Then, *v* covertly excorporates and internally merges with VP. Then, the subject DP is externally merged. Here, since the excorporation is covert, the initial site of *v* counts in the calculation of linear order. Then, the asymmetric c-command relations on the right side obtain, yielding the subject–object–verb order. The linear order of V and *v* is undetermined, but it can be reasonably assumed that *v* cliticizes onto V. Thus, the head-finality of Japanese follows. As far as I can see, a derivation always yields a head-final order when it starts with a phase head and the excorporation is covert.

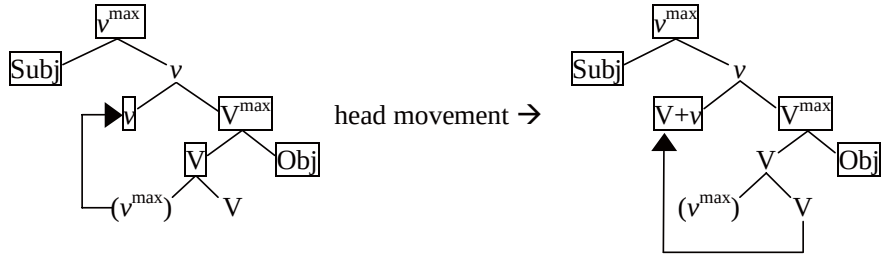
5. Conclusion and Further Issues

The main purpose of this paper was to suggest a Merge-based analysis of Case in Japanese. I first noted that an Agree-based analysis is untenable if a unified analysis is sought for Cases on argument DPs and PPs/adjunct DPs. Then, I argued that the wide scope property of nominative objects requires an alternative analysis on independent grounds. Given these conclusions, I explored the possibility that Case in Japanese is part of Merge: it is required for Merge and valued through Merge. I presented a concrete analysis, extending Shimada (2007)

and Tonoike's (2009) hypothesis on phrase structure building, which involves excorporation of heads out of head complexes. Finally, I pointed out that the wide scope property of nominative objects leads to the hypothesis that excorporation is covert in Japanese, and showed that this hypothesis predicts the head-finality of Japanese from Kayne's (1994) LCA.

In the discussion, I assumed that the proposed mode of phrase structure building applies universally. If this is correct, the head-initial order should be a consequence of overt excorporation. A *v*P in English, for example, would be derived as in (42) under this approach.

(42)



There are many possible ways to derive the head-initial order here. First, the structure is derived as illustrated on the left side with overt excorporation of *v*. This may suffice if the initial site of *v* is totally invisible in the calculation of linear order. It is also possible that V undergoes head movement to *v* as illustrated on the right side. In this case, the asymmetric c-command relation of V+*v* and the object DP is clear if the initial site of V, which lacks phonetic features, enters the calculation unlike the case of excorporation because it is where the V is interpreted.

If this approach is tenable, then the head-parameter is reduced to whether excorporation is overt or covert. On the other hand, it may turn out, as Hisa Kitahara suggests, that English phrase structure is derived with V and the object merging first, as is usually assumed. In this case, Japanese employs the specific way of phrase structure building illustrated above because Merge is Case-dependent in the language. This predicts that head-initial languages have Agree-based Case systems while head-final languages have Merge-based ones. Although the exploration of the two approaches undoubtedly raises a number of interesting issues, I must leave it for another occasion.

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A Cross-linguistic Approach to the 'Erroneous' Genitive Subjects: Underspecification of Tense in Child Grammar Revisited

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1. Introduction

It is cross-linguistically observed that children at around the age of two erroneously produce genitive subjects in matrix clauses where nominative subjects must be used in adult grammar. Selected examples of child Japanese and child English are shown in (1) and (2), respectively.[1]

(1) a. A-tyan-***no*** tukat-te-ru no (A 2;1)
-Gen use-Prog-Pres Particle
'A-tyan is using (it).'

b. Taisyoo-kun-***no*** tukut-ta (Tai 1;10)
-Gen make-Past
'Mr. Taisyoo made (this).'

(2) a. **My** turn, turn around (Nina 2;11)

b. **Her** sleeping (Nina 2;5)

The subject NPs in (1) must be marked with the nominative Case *-ga*. The subjects must be *I* in (2a) and *she* in (2b). However, the genitive Case is assigned on the subject NP in each case.

Genitive subjects are allowed in prenominal sentential modifiers of relative clauses in Japanese, as given in (3), and in gerundive constructions in English, as given in (4).

(3) [Taroo-**ga**/-**no** (gap_i) yon-da] hon_i
-Nom/-Gen read-Past book
'the book that Taroo read'

(4) I remember [**John's**/**my** eating an apple]

As in (3), the subject NP *Taroo* can be marked with genitive Case as well as nominative Case. Likewise, the genitive subjects, *John's* and *my*, are possible in the English gerundive construction, as shown in (4).

What causes Case errors in child grammar? In this paper, providing new descriptive findings from the CHILDES corpora and the data reported in the previous studies, we argue that the Case errors that young children make are related to the underspecification of the features in Tense. We will show that in

* We would like to take this opportunity to sincerely thank the organizers of GALANA 4 (University of Toronto), Mihaela Pirvulescu, and the anonymous reviewers for their suggestions and support. The authors would also like to express their deep gratitude to Chisato Fuji, Tomomi Nakatani, Keiko Ogawa, Mamoru Saito, Koji Sugisaki, Kensuke Takita, Eriko Watanabe and the members of the Center for Linguistics at Nanzan University for their helpful discussions. The research was supported in part by the Nanzan International Research Project on Comparative Syntax and Language Acquisition (Center for Linguistics, Nanzan University), Pache Research Grant I-A in 2010 and 2011 (Nanzan University) and by the JSPS Grant-in-Aid (#20520397, Principal Investigator: Keiko Murasugi).

[1] The abbreviations used in this paper are as follows: Acc=accusative, Ad=adnominal, Dec=declarative, Dat=dative, Gen=genitive, Nom=nominative, Past=past, Pres=present, Prog=progressive, Top=topic

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the stages of Very Early Root Infinitive, one-year-old children use non-finite verbs in root contexts (Murasugi & Fuji, 2008, 2009; Nakatani & Murasugi, 2009; among others) and the erroneous non-nominative subjects in Japanese observed after the age of two correspond to the stage of Root Infinitives (RIs) in European languages (Murasugi & Watanabe, 2009; Murasugi, 2008, 2009). We argue that the Japanese- and English-speaking children producing erroneous genitive subjects know the structure of TP headed by T, which checks genitive Case on a subject of prenominal sentential modifiers in Japanese and gerunds in English, but they still have *not* acquired that the T *must be* compatible with D only, and hence, produce genitive subjects in matrix clauses.

We further argue that the concretization of the immature Tense system is also found in the omission of copulative elements. 2-year-old English-speaking children tend to omit finite *be* in sentences of Stage-level predicates (e.g., *I tired/I in the kitchen*) (Becker, 2000, 2001). Presenting our finding that Japanese-speaking children also optionally drop copulas at around the same age as they produce erroneous genitive subjects, we aim to describe the stage where children underspecify features in Tense.

The organization of this paper is as follows. In section 2, we show our descriptive findings of erroneous genitive subjects. In section 3, we overview the previous analyses of children's erroneous genitive subjects and point out that these analyses cannot fully provide explanation for the stage. In section 4, we provide our analysis of erroneous genitive subjects in child Japanese, and in section 5, we argue that the analysis given in section 4 applies to the erroneous genitive subjects in child English, based on our corpus analysis of the CHILDES database. Section 6 further confirms the hypothesis by examining the copula drop phenomena. We go over Becker's (2000, 2001) analysis of copula drops in English, and we argue that the copulative elements are also dropped in child Japanese, thereby supporting our hypothesis that the genitive Case errors are attributed to the underspecification of the features in Tense. Section 7 concludes this paper.

2. 'Erroneous' Genitive Subjects in Child Languages

2.1. The Data of 'Erroneous' Genitive Subjects Found in Child Japanese

We first show the data of erroneous genitive subjects in child Japanese and their properties. We examine Japanese-speaking children's longitudinal databases available on CHILDES (Tai age 1;5-3;1, Miyata, 2004a; Ryo age 1;4-3;0, Miyata, 2004b; Aki age 1;5-3;0, Miyata, 2004c; Jun age 0;6-3;8, Ishii, 2004; and Moko age 1;8-3;2, University of Connecticut and Nanzan University) corpus and Child A's data reported in Suzuki's (2001, 2007) studies. We found 103 erroneous genitive subjects out of 2,246 utterances containing subject NPs marked with nominative, dative or genitive Case. As shown in (5) through (8), these children produce erroneous genitive subjects with various types of predicates.

(5) a. A-tyan-***no*** tukat-te-ru no (A 2;1)
A-tyan-*-Gen* use-Prog-Pres Particle
'A-tyan is using (it).'

b. Taisyoo-kun-***no*** tukut-ta (Tai 1;10)
Taisyoo-kun-*-Gen* make-Past
'Mr. Taisyoo made (this).'

(6) a. Mama-***no*** odot-te yo (A 2;1)
Mother-Gen dance-Request Particle
'Please dance, Mother.'

b. Kore masukuman-***no*** ik-u (Ryo 2;11)
this mask man-Gen go-Pres
'Here, Maskman goes.'

(7) a. Tane-***no*** hait-te-n no (A 2;5)
seed-Gen enter-Prog-Pres Particle
'The seeds are in (a grape).'

b. Ti-***no*** ar-u (Moko 2;0)
(letter of) Ti-Gen exist-Pres
'There is a block (that has the letter of Ti).'

(8) a. Taisyoo-kun-***no*** sugo-i (Tai 1;10)
Taisyoo-kun-*-Gen* great-Pres
'Mr. Taisyoo is great.'

b. Moko-mo se-***no*** ooki-i (Moko 1;11)
-also height-Gen tall-Pres
'Moko is also tall (to catch the cord to turn on the light).'

The subjects of the transitive verbs in (5), the unergative verbs in (6), the unaccusative verbs in (7), and the adjectives in (8), are all erroneously marked with the genitive Case *-no* instead of the nominative Case *-ga*. Table 1 gives the age range for which the children produce the erroneous genitive subjects.

Table 1
The Age Span of Children Producing the 'Erroneous' Genitive Subjects

Child	A	Tai	Ryo	Aki	Jun	Moko
Age Span	2;1-2;8	1;10-3;1	2;9-2;11	2;8	2;2-2;9	1;10-3;1

As Murasugi and Watanabe (2009) point out, Case errors in Japanese are optional, just like Root Infinitives in European languages. Children at around the age of two produce erroneous genitive subjects, but they also produce nominative subjects (just like adults do) as given in (9).

(9) a. Boosi-**ga** ton-da (A 2;1)
hat-Nom fly-Past
'(The) hat flew away.'

b. Mikkii-tyan-**ga** ato huk-u (Tai 1;9)
Mickey-Nom rest wipe-Pres
'Mickey Mouse will wipe the rest.'

c. Jun-**ga** kowasi-ta (Jun 2;3)
-Nom break-Past
'Jun broke (it).'

d. Moko-**ga** sagasi-ta (Moko 1;9)
-Nom search-Past
'Moko searched (for it).'

The subject NPs in (9) are correctly marked with the nominative Case *-ga*. There is an intermediate acquisition stage where subjects are sometimes marked with nominative Case, but sometimes with genitive Case.

2.2. The Data of 'Erroneous' Genitive Subjects in Child English

Case errors are widely observed in child English as well (Rispoli, 1994, 1995; Budwig, 1989; Pensalfini, 1995; Vainikka, 1993/1994; among others). Our examination of the CHILDES database of four English-speaking children, Nina (1;11-2;9), Adam (2;3-3;5), Eve (1;6-2;3) and Sarah (2;3-3;5), found 477 out of 13,562 utterances with erroneous genitive subjects. Selected examples are shown in (10) through (12).

(10) a. **My** turn, turn around (Nina 1;11)
b. **My** see that (Adam 2;3)
c. **Her** make pancakes (Sarah 2;9)
d. **Her** have a hat on (Nina 2;4)
e. **Her** sing it (Adam 2;10)

(11) a. **My** cut it. **My** caught it (Nina 2;1)
b. **My** got that (Nina 2;2)
c. **My** broke it (Sarah 2;6)
d. **Her** said no (Sarah 2;8)
e. **Her** got on, in baby carriage (Adam 3;0)

(12) a. **My** going in (Nina 2;3)
b. What **my** doing? (Sarah 2;10)
c. **My** going? (Eve 1;10)
d. **My** writing I writing (Adam 2;7)
e. **Her** getting mad (Nina 2;4)
f. **Her** sleeping (Nina 2;5)

As in (10), the erroneous genitive subjects mostly occur with non-inflected verbs such as *make*, *have* and *sing*. However, some errors are found with a verb in past tense as in (11), and/or a verb in progressive form as in (12). Table 2 gives the age range of the erroneous genitive subjects.

Table 2
The Age Range of Children Producing the 'Erroneous' Genitive Subjects in English

Child	Nina	Adam	Eve	Sarah
Age Span	1;11-2;5	2;3-3;0	1;10-2;0	2;6-3;0

English-speaking children also produce nominative subjects while they produce genitive subjects as shown in (13).

(13) a. I don't break 'em (Nina 2;1) b. I talk phone (Sarah 2;6)
c. I tie other one (Eve 1;11) d. I change diaper (Adam 2;3)

Thus, cross-linguistic similarities are found in the very young child production. At around age of two, both Japanese- and English-speaking children Case-mark the subject NPs, in a root clause, with optional nominative or genitive.

3. Previous Studies on 'Erroneous' Genitive Subjects

For the children's Case errors, various analyses have been proposed. In what follows, we discuss four previous approaches; Paradigm Building of Pronouns, Functional Analysis, Nominal Analysis, and Clausal Analysis, and we will point out that none of those previous analyses can fully account for the intermediate stage of language acquisition in question. Then, we argue that the insight of AGR/TNS Omission Model (ATOM) originally proposed by Schütze and Wexler (1996), which links the early erroneous subjects to the underspecification of some features in Tense and Agreement, to the Root Infinitive stage, and to the copula omission Root Infinitives in European child languages, would also extend to the analysis of the erroneous subjects in Japanese-speaking children.

Rispoli (1994, 1995) argues that Case errors are due to the lack of lexical knowledge of the paradigm of pronouns in the target languages, and that erroneous non-nominative subjects are produced when children fail to access to the appropriate pronoun form, thereby having problems with the paradigm building of pronouns. However, as in (5) through (8), genitive subjects in Japanese are frequently found with various Referential NPs (e.g., *A-tyan-*no* (A-tyan-Gen) and *Taisyoo-kun-*no* (Taisyoo-kun-Gen)). This suggests that Paradigm Building of Pronouns has nothing to do with Case errors.

Functional Analysis (Budwig, 1989) for child English and Suzuki (2007) for child Japanese states that genitive subjects are erroneously used instead of nominative subjects, when the subjects are agentive and occur with event-denoting predicates. Given the Functional Analysis, it is expected that genitive Case errors tend to occur with transitive or unergative verbs.

Contrary to the expectation, however, erroneous genitive subjects in child Japanese are produced not only with transitive or unergative verbs, but also with stative predicates as given in (14a) and (14b).

(14) a. Ti-***no** ar-u (Moko 2;0) (Adult form: Ti-ga) [Unaccusative verb]
(letter) Ti-Gen exist-Pres
'There is a block (that has the letter *Ti*).'
b. Taisyoo-kun-***no** sugo-i (Tai 1;0) (Adult form: Taisyoo-kun-ga) [Adjective]
-Gen great-Pres
'Mr. Taisyoo is great.'

Nominal Analysis (Pensalfini, 1995) for child English and Suzuki (2001) for child Japanese argues that the structure of clauses containing erroneous genitive subjects is nominal rather than a sentence. It is expected that genitive Case errors are produced only in declarative clauses, but never in clauses containing *wh*-phrases. However, our corpus analysis found a counterexample as shown in (15).

(15) Dotti-***no** ooki-i? (Moko 2;5) (Adult form: Dotti-ga)
which-Gen big-Pres
'Which (number) is bigger?' (Sawada, Murasugi, & Fuji, 2009)

In (15), the *wh*-phrase, *dotti* (which), is marked with the genitive Case *–no*. Thus, Nominal Analysis also fails to account for the erroneous genitive subjects.

Vainikka (1993/1994) proposes Clausal Analysis, following Radford (1998). This analysis argues that the structures of clauses with erroneous genitive subjects are simple VPs headed by a non-finite verb with a subject occupying the Spec of VP. TP or CP is initially not projected. Subject NPs are placed in the Spec VP and get the genitive Case by V by virtue of being in the Spec position. Given Clausal Analysis, it is expected that verbs are always uninflected in a clause with an erroneous genitive subject because of the lack of TP. However, counterexamples to this analysis are found. We observed that all the verbs in (11), repeated in (16), are overtly inflected for past tense.

(16) a. **My** cut it. **My** caught it (Nina 2;1)
b. **My** got that (Nina 2;2)
c. **My** broke it (Sarah 2;6)
d. **Her** said no (Sarah 2;8)
e. **Her** got on, in baby carriage (Adam 3;0)

Thus, children's genitive Case errors are not fully explained by the previous studies shown above. In what follows, we present a hypothesis that child Case errors are due to the underspecification of Tense and show the intermediate stage in the acquisition of the features in Tense.

4. An Analysis of 'Erroneous' Genitive Subjects in Child Japanese

According to ATOM originally proposed by Schütze and Wexler (1996), non-nominative subjects alternate with nominative subjects in English-speaking children during the Root Infinitive stage, but only when the (main) verb is an infinitive. That is, when the verbs show agreement, only nominative subjects occur. In this section, we present the analyses that Case errors in Japanese are due to the underspecification of some features in Tense, and propose that the stage of Case errors corresponds to the stage of RIs in European child languages, where children at around two years of age use non-finite verbs in matrix clauses.[2]

First, we review the Case system in Japanese. Then, we show our descriptive findings with respect to the properties that clauses with erroneous genitive subjects have, and discuss our analysis.

4.1. Japanese Adult Grammar

In adult Japanese, a subject in a matrix clause is typically assigned nominative Case *-ga* as shown in (17).

(17) a. Taroo-**ga** hon-o yon-da
-Nom book-Acc read-Past
'Taroo read a book.'
b. Taroo-**ga** arui-ta
-Nom walk-Past
'Taroo walked.'
c. Booto-**ga** sizun-da
boat-Nom sink-Past
'A boat sank.'
d. Ringo-**ga** aka-i
apple-Nom red-Pres
'The apple is red.'

The subject of a transitive verb *yon-da* (read) in (17a), an unergative verb *arui-ta* (walked) in (17b), an unaccusative verb *sizun-da* (sank) in (17c) and an adjective *aka-i* (red) in (17d) are marked with the nominative Case. As mentioned in the introduction, genitive subjects are not allowed in sentences, but they are possible in noun phrases as shown in (18).

[2] See Murasugi (2008, 2009), Murasugi and Watanabe (2009), Sawada, Murasugi, and Fuji (2009), and Sawada and Murasugi (2010), for the relevant proposals. See also Murasugi, Fuji, and Hashimoto (2007), Murasugi and Fuji (2008, 2009), and Murasugi and Nakatani (2009), among others, for the detailed analyses of Root Infinitive Analogues observed at around the age of one in child Japanese.

(18) a. Sentence: [$_S$ Taroo-**ga**/-***no** hon-o yon-da]
-Nom/-Gen book-Acc read-Past
'Taroo read a book.'
b. NP: [$_{\text{Sentential Modifier}}$ Taroo-**ga**/-**no** (gap$_i$) yon-da] hon$_i$
-Nom/-Gen read-Past book
'the book that Taroo read'

The subject *Taroo* in both (18a) and (18b) can be marked with the nominative Case. The Case marker on a subject can be converted to genitive only in prenominal sentential modifiers in relative clauses and complex NPs as in (18b). This is called nominative/genitive (or *Ga/No*) conversion. It must be pointed out that sentences and noun phrases show some parallel properties. The sentence-ending (declarative) form in (18a) and prenominal verb form in (18b) appear in the same form (i.e., *yon-da* "read"). Hence, the prenominal form and sentence-ending form of verbs and adjectives are basically homophonous.

There are other important properties found in nominative/genitive conversion. For example, genitive subjects cannot be present with accusative objects (Harada, 1971) as given in (19).

(19) [Taroo-**ga**/-***no** hon-**o** kat-ta] mise
-Nom/-Gen book-Acc buy-Past shop
'the shop where Taroo bought a book'

The accusative object, *hon-o* (book-Acc) can occur with the nominative subject, whereas it is prohibited when the subject is marked with the genitive Case. This is known as the Transitivity Restriction.

The noun phrases containing nominative and genitive subjects show a difference in interpretation. Miyagawa (2008, 2009) suggests that genitive subject constructions are aspectually limited to stative interpretation and genitive subjects tend to occur with stative predicates such as adjectives and aspectual forms. The examples with aspectual predicates are shown in (20).

(20) a. [simi-**ga** tui-ta syatu]-o kiteiru [eventive reading]
stain-Nom had shirt-Acc is wearing
'He's wearing a shirt that sustained a stain.'
b. [simi-**no** tui-ta syatu]-o kiteiru [result of eventuality reading]
stain-Gen had shirt-Acc is wearing
'He's wearing a shirt that has a stain.' (Miyagawa, 2009)

In (20a), the aspectual morpheme '*(-te) iru*' is attached to the verb *wear*. Following Teramura's (1982) and Abe's (1993) insights that '*verb-ta*' form does not have a full tense interpretation in certain relative clauses, Miyagawa (2009) argues that the clause containing a genitive subject tends to refer to the result of eventuality. The sentence with the nominative subject as in (20a) indicates that there was an event of the shirt getting stained while the most natural interpretation of the genitive subject construction in (20b) is that the shirt being worn has a stain at the time of the utterance. Due to the result of eventuality reading, for instance, the genitive subject is at odds with the adverb that refers to a specific time, such as "*totuzen* (suddenly)" as shown in (21).

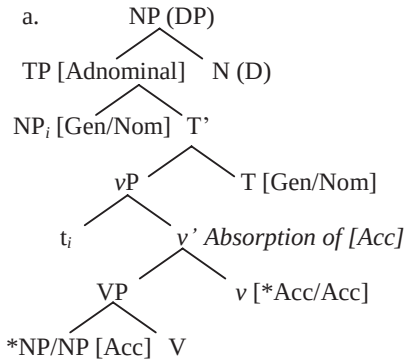
(21) [totuzen simi-**ga**/-***no** tui-ta syatu]
suddenly stain-Nom/-Gen have-Past shirt
'the shirt that was suddenly stained' (Miyagawa, 2009)

The nominative subject, but not the genitive subject, is accepted in (21).

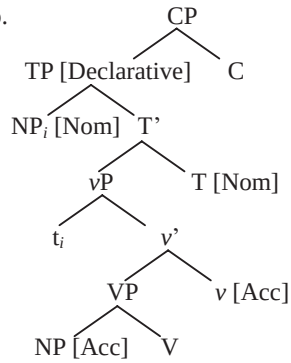
For the structure of the genitive subject construction, Hiraiwa (2001) proposes that the genitive subject is licensed sentence-internally by the adnominal verbal inflection. Saito (2004), adopting Hiraiwa (2001), argues that the verbal inflection lies in T. While as in (22a), an Adnominal T checks either genitive or nominative in prenominal sentential modifiers, as in (22b), a Declarative T checks

nominative in declarative sentences. Moreover, the Adnominal T must be compatible with N (D), but not with C, while the Declarative T must be compatible with C.

(22) a.



b.



(Sawada, Murasugi, & Fuji, 2009)

In both structures in (22a) and (22b), subject NPs are base-generated in the Spec of small *v*P, and move to TP Spec. Assuming that small *v* checks accusative Case, Saito (2004) argues that when an Adnominal T checks genitive, it absorbs the accusative Case feature on small *v*. That is, when the subject is marked with the genitive Case as in (22a), Case checking of the accusative Case is prevented because of the Case feature absorption. Hence, the genitive-accusative pattern, such as (19), is excluded. Discussing Abe's (1992) argument that the external argument is optional in prenominal sentential modifiers, Saito proposes that the Adnominal T can absorb not only *v*'s Case but also its θ-role. In contrast, as in (22b), a subject gets nominative Case by the Declarative T in sentences.

In what follows, we present an analysis of the erroneous genitive subjects in child Japanese based on Hiraiwa's (2001) and Saito's (2004) syntactic analyses of nominative-genitive conversion in Japanese.

4.2. What Children Know/Do Not Know at the Stage of Case 'Errors' in Child Japanese

As shown in the section 2.1., Japanese-speaking children optionally produce correct nominative subjects at the stage where they produce erroneous genitive subjects. Because the Japanese-speaking children (optionally) produce the matrix clause with the nominative subject at the stage in question, we assume that children certainly know the inside of the TP structure.

What children do not know at the stage in question is that genitive subjects are not allowed in non-NP-contexts. We may restate this problem in the framework of Hiraiwa (2001) and Saito (2004): children's genitive Case errors are found at the stage where they have not acquired the relation of Adnominal T and N (D), and they "mis-assume" that Adnominal T can be compatible with C. Children do not know the external relation of T with N (D), and have not acquired the fact that Adnominal T can only be compatible with N or D. Just like Adnominal T in the prenominal sentential modifiers inside NPs (DPs) in adult grammar, Declarative T can also check genitive and nominative Case in root clauses in child grammar.

This hypothesis is supported by the curious facts that children's erroneous genitive subjects have parallel properties with correct genitive subjects in the adult sentential modifiers in relative clauses.

First, the sentences with erroneous genitive subjects obey the Transitivity Restriction. In Sawada, Murasugi, and Fuji (2009) (henceforth S, M&F (2009)), it is reported that 17% of the sentences have overt object NPs. The rest of the utterances do not contain overt object NPs. In case the context requires an object, it appears in the topic or the right-dislocated position, but never in the canonical (base) position, thereby following the Transitivity Restriction as given in (23).

(23) a. Kore, A-tyan-***no** tukut-ta no (A 2;3) (Adult form: A-tyan-ga)
this -Gen make-Past Particle
'This one, A-tyan made (it).'

b. A-tyan-***no** but-tyat-ta titi (A 2;4) (Adult form: A-tyan-ga)
-Gen hit-Perfect-Past father
'A-tyan hit my father.' (S, M&F, 2009)

In (23a), for example, the accusative object *kore* (this) appears in the topic position. This indicates that child erroneous genitive subjects may not violate the Transitivity Restriction, just like adult genitive subjects in sentential modifiers in NPs.

Second, the child erroneous genitive subjects, in fact, often appear with certain types of predicates. As shown in (5) through (8), they are the unaccusative verbs, adjectives, and aspectual forms (e.g., *tukat-te-ru* (use-Prog-Pres)). Therefore, the predicates with erroneous genitive subjects show parallel properties with adult genitive subjects, as being discussed in Miyagawa (2008, 2009).

Third, 96% of the child matrix clauses with erroneous genitive subjects contain the verbs and adjectives with the prenominal form, which is homophonous with the sentence-ending declarative form. In fact, it is also true for adult grammar. For example, a verb "*tonda* (flew)" in a sentence, "*boosi-ga tonda* (The hat flew away)" and in a sentential modifier "*tonda boosi* (the hat which flew away)" have the homophonous form. Hence, it is natural for the children to regard the prenominal sentential modifiers as the matrix clauses, based on the input available.

The three pieces of evidence shown above indicate that Japanese-speaking children know the internal properties of TP headed by the Adnominal T, and they, unlike adults, treat the clauses containing an erroneous genitive subject as sentences, not as sentential modifiers in NP-contexts.

Then, how do erroneous genitive subjects disappear in child Japanese? In S, M&F (2009), the learnability problem is explained by employing Murasugi's (1991) Relative Clause Parameter.

According to Murasugi (1991), the structure of sentential modifiers is parameterized; either CP or TP (IP) depending on languages. Sentential modifiers in adult Japanese (and Korean) are TPs (IPs) whereas they are CPs in adult English. Some children acquiring Japanese hypothesize the CP relatives at one point of language acquisition.

(24) Nimotu nose-te-n ***no** torakku ya kore (Jun 2;9)
load carry-Prog-Pres Complementizer truck Copula this
'This is the truck that is carrying a load.' (S, M&F, 2009)

In (24), the complementizer *no* is overgenerated between the sentential modifier and the head nominal.

Adopting Hiraiwa (2001), Saito (2004) and the Relative Clause Parameter, the stages of erroneous genitive subjects can be classified into three stages.

Basically, the genitive Case errors occur because Adnominal T is considered to be compatible with C unlike in adult Japanese, since "a default root clause is CP (Rizzi, 1994)." Stage I is the stage where only erroneous genitive subjects are produced which some researchers have observed, and no correct nominative subjects are found. Children then would assume that Adnominal T is compatible with C.

At Stage II, children mark subjects with both nominative and genitive Case. At this stage, Adnominal T and Declarative T are compatible with C. Stage II is subcategorized into two stages with respect to the acquisition of the complex structure of relative clauses. At Stage IIa, relative clauses are not yet produced; at Stage IIb, the embedded sentences are produced. When children start producing relative clauses at Stage IIb, overgeneration of complementizer (*no*) is found in those who set the value of the Relative Clause Parameter as CP, but not TP, as in (24).

Stage III is the stage where children set the value of the Relative Clause Parameter (from CP) to TP, and retreat from the overgeneration of complementizer. The erroneous genitive subjects in sentences disappear, since children find out that relative clauses cannot be CP in adult Japanese and that Adnominal T is compatible only with N (D), but not C, by fully specifying the features in T that determine the external relation of the Adnominal T with N (D).

For this hypothesis, S, M&F (2009) provide the further supportive evidence based on the corpus analysis of Jun. Jun's erroneous genitive subjects are attested from the age of 2;2 to 2;9 and he frequently overgenerates CP relative clauses from 2;8 to 2;10. In contrast, as shown in (25), TP relative clauses start to appear productively at 2;10 when his genitive Case errors completely disappear.

(25) Kore na Jun-ga geemu su-ru toko (Jun 2;10)
this Particle -Nom game do-Pres place
'This is the place where Jun plays the game.' (S, M&F, 2009)

Jun's data shows that he reset the value of the Relative Clause Parameter to TP at around 2;10 and this is consistent with the analysis given above.

To summarize, 2-year-old Japanese-speaking children who optionally produce correct nominative subjects erroneously assign genitive Case *-no* to subject NPs after Root Infinitive Analogues. The properties of child clauses with an erroneous genitive subject are parallel with those with a genitive subject in adult sentential modifiers within complex NPs. What children do not know is the properties of Tense (i.e., the property of [+Adnominal] T being compatible only with D in adult grammar). Since a root clause is CP as discussed by Rizzi (1994), and because of the underspecification of Tense, children mistakenly assume that the Adnominal T can be compatible with C. It is only after children acquire that structure of TP relative clauses in Japanese that they retreat from the genitive Case errors.

5. 'Erroneous' Genitive Subjects in Child English

The analysis given in Section 4 can elegantly explain the erroneous genitive subjects in child English; English-speaking children also go though three stages to attain adult grammar. We will argue that the erroneous genitive subjects, which are found during the Root Infinitive stage (Schütze & Wexler, 1996), are due to the underspecification of the features in Tense and will present the empirical evidence.

5.1. English Adult Grammar

Before we discuss the mechanism of how English-speaking children make genitive Case errors, we briefly explain English adult grammar. The subject NPs are typically Case-marked with the nominative in simple sentences as shown in (26). Genitive subjects, but not nominative subjects, are possible in gerund constructions as shown in (27).

(26) a. **John** eats/**I** eat an apple. b. ***John's** eats/**My** eat an apple.

(27) a. I remember [**John's**/**my** eating an apple] b. *I remember [**he**/**I** eating an apple]

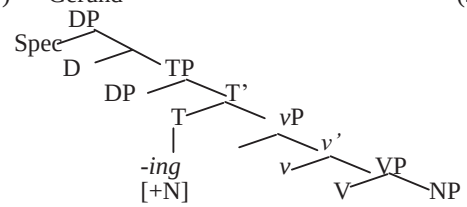
As per the data, genitive subjects are allowed in gerund constructions, but not in matrix clauses. It must be pointed out that there is a parallelism between gerund constructions (DPs) and progressive sentences (CPs) with respect to the verb forms as shown in (28).

(28) a. I remember [John's/my **eating** an apple] [Gerund Construction]
b. John is/I am **eating** an apple [Progressive Sentence]

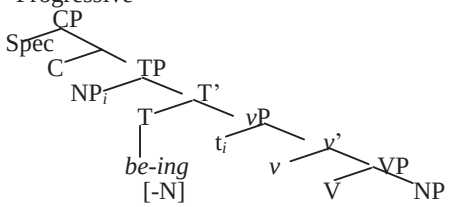
The affix which nominalizes the clauses in (28a) and the affix used in sentences to express progressive aspect in (28b) are the same (V-*ing*).

For the structure of the gerund construction, we adopt Suzuki (1988). According to Suzuki (1988), the suffix *-ing* is inflectional and it can appear on T (I) where only inflectional affixes can occur. The gerundive *-ing*, which originally had [-Infl], had the feature [+N] on T (I), but it later acquired the positive value of [+Infl] from the homophonous participial suffix *-ing*. Hence, the gerundive *-ing* can occur in T (I). On the other hand, subject NPs in progressive sentences cannot get the genitive Case by T. When the value of [±N] is negative, the construction becomes sentential. Given Suzuki's (1988) analysis, the structures of gerund constructions and progressive sentences are as given in (29) and (30), respectively.

(29) Gerund



(30) Progressive



The gerund construction has DP structure as in (29). As shown in (30), T [-N] must be compatible with the C-head, but not with the D-head in progressive sentences.

Employing the structures shown above, we argue that the mechanism by which English-speaking children erroneously produce genitive subjects is the same as child Japanese in the next section.

5.2. Children's Knowledge at the Stage of the 'Erroneous' Genitive Subjects in English

In this subsection, we will show that the erroneous genitive subjects in child English are well explained by adopting the analysis for child Japanese as shown in section 4. We will give the supportive evidence for the hypothesis that 2-year-old English-speaking children know the internal properties of TP headed by Gerundive T, but not the external properties of TP. They mistakenly assume that Gerundive T can be compatible with C.

Unlike Japanese, the structure of relative clauses in English is CP, not TP. Hence, unlike the case of Japanese, to set the value of the Relative Clause Parameter cannot be the trigger to retreat from the genitive Case errors for English-speaking children. What can be the trigger of the retreat in child English? We conjecture that children need to learn the structural difference between gerundive constructions and progressive sentences. When the features in T that determine the external relation of T with D/C are fully specified, children stop producing genitive Case errors. The evidence based on our corpus analysis for our hypothesis is shown as follows.

At Stage I, only erroneous genitive subjects are produced in a matrix sentence. This stage is, in fact, found only from Nina's corpus.[3] Most of the erroneous genitive subjects at Stage I occur with verbs without overt inflections such as "My *turn, turn* around (Nina, 1;11)." Children seldom produce utterances which express progressive events with overt copulas (e.g., *I am singing*). In child grammar, T selects CP structure as a root clause, since "a default root clause is CP (Rizzi, 1994)." Then, T is associated with the feature [+N (Gerundive)] which assigns the genitive Case to a subject NP.

At Stage II, both correct nominative and erroneous genitive subjects are produced in the matrix clauses. The crucial difference found in Stage IIb, but not found in Stage IIa, is the existence of erroneous genitive subjects that co-occur with a verb in progressive form. The erroneous genitive subjects sometimes occur with V-*ing* that has the interpretation of progressive. Some examples are attested from Nina's corpus, such as "(Do you) know what my *making*? (Nina, 2;4)," "Look my *doing*, Mommy (Nina, 2;4)" and "Her *getting* dry (Nina, 2;5)." Interestingly, all erroneous genitive subjects with V-*ing* occur without overt copulative elements. We also need to point out that children at Stage IIa and IIb frequently drop *be* in progressive sentences. Children have not acquired the difference between gerund constructions and progressive sentences.

At Stage III, genitive Case errors disappear. Children start producing the correct nominative subjects when the T-related elements such as copulative elements start to appear in the adult way. Progressive sentences start to be produced with overt finite declarative *be*. Children know that Gerundive T cannot be compatible with C in adult grammar.

The analysis discussed above is consistent with the acquisition of the progressive form of the

[3] Sawada, Murasugi, and Fuji (2009) report that among six children, only one Japanese-speaking child (Child A) exhibits Stage I. Hence, we employ the same classification of the stages to English data.

verbs. As discussed by Becker (2000, 2001), copulative elements are frequently dropped in 2-year-old children's production. In our corpus analysis, the age span of frequent copula omission corresponds to the time of the erroneous genitive subjects at Stage I and II. As in (31), *be* drops in progressive sentences.

(31) a. I painting (Adam, 2;5)
b. I popping balloons (Nina, 2;0)
c. I brushing (Eve, 1;9)
d. I singing (Sarah, 2;8)

Corpus analysis of Sarah's data is summarized in Figure 1. The correlation of the erroneous genitive subjects, and the progressive sentences with omitted *be* is found as given in Figure 1.

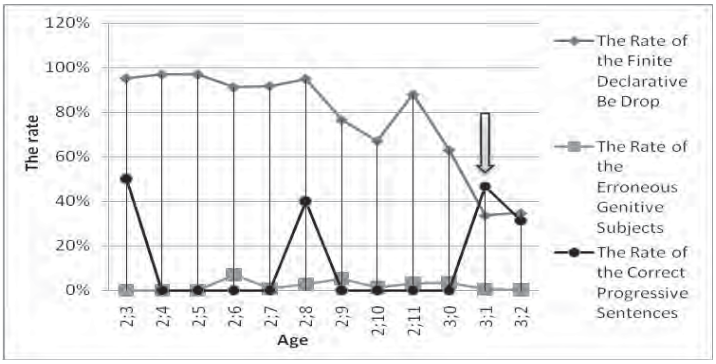


Figure 1. Correlation of 'Erroneous' Genitive Subjects, Finite *Be* Drop and Progressive Sentences (Sarah)

Figure 1 shows that Sarah's erroneous genitive subjects are produced from 2;6 to 3;0. While Sarah is in the stage of genitive Case errors, the rate of progressive sentences with overt *be* is practically zero except the occasional production at 2;3 and 2;8. At the age of 3;1, the erroneous genitive subjects cease and the correct progressive sentences (with overt finite *be*) start to appear productively, though gerund constructions are not found even after 3;0 in Sarah's corpus. The results in Figure 1 show that an English-speaking child learns that T [-N] must be compatible with C. Sarah learns that T with the feature [-N (e.g., Progressive)] does not assign genitive Case to a subject NP in a sentence (CP) and T with the feature [+N (Gerundive)] must be compatible with D (DP).

To summarize, just like Japanese-speaking children, 2-year-old English-speaking children also produce erroneous genitive subjects while correct nominative subjects optionally appear. The age span of Case errors falls on RIs. Child clauses containing erroneous genitive subjects have parallel properties with adult gerunds. As for the learnability issue, we argued that the trigger to retreat from genitive Case errors would be the acquisition of progressive sentences in child English. It is probably when children realize that T [+N (Gerundive)] cannot be compatible with C, but with D, by learning the full Tense system that they retreat from the erroneous genitive Case-marking of the subject NPs.[4]

6. Omission of the Copulative Elements in Child Languages

If we are on the right track, and the Case errors are due to the underspecification of Tense, then it is conjectured that the analysis given in this paper can account for other phenomenon related to T-elements or copula omission. In this section, we will first go over Becker (2000, 2001) which argues for copula omission in child English. Then, we will give the supportive evidence for Becker (2000, 2001), based on the corpus analysis of child Japanese.

[4] The analysis presented here shares in spirit with Hamburger's (1980) insight which analyzes sentences with genitive subjects as precursors of relative clauses, and also with the insight of Schütze and Wexler (1996) which associates genitive subjects in child English to genitive subjects in gerundive constructions (e.g., *his playing football [upset me]*) in adult grammar.

6.1. Becker (2000, 2001)

In adult English grammar, predicative expressions can be classified as Stage-level (=S-l) or Individual-level (=I-l) as exemplified in (32a) and (32b), respectively.

(32) a. Rodney is in the kitchen/tired. [Stage-level]
b. Rodney is a cat/fat. [Individual-level] (Becker, 2001)

S-l predicates (locative expressions *'in the kitchen'* and adjectives *'tired'*) as in (32a) denote a temporary property, while I-l predicates (*'cat'* and *'fat'*) as in (32b) denote a permanent property. One difference between S-l and I-l predicates is that only S-l predicates can be modified by a spatial or temporal modifier (Becker, 2001, p. 27). See (33).

(33) a. Rodney is in the kitchen all the time. b. ??Rodney is a cat all the time.
(Becker, 2001)

As in (33), the temporal modifier *all the time* can be compatible with the S-l predicate as in (33a), but it is odd with the I-l predicate as in (33b).

Becker (2000, 2001) finds that 2-year-old children acquiring English tend to omit *be* in S-l predicates as shown in (34), but *be* is rarely omitted in I-l predicates as in (35).

(34) a. I φ in the kitchen (Nina 2;1) b. He φ way up dere (=there) (Adam 3;0)
c. Her φ thirsty (Nina 2;1) (Becker, 2001)

(35) a. He's a dog (Nina 2;0) b. I'm big boy (Adam 2;7)
c. And this is yellow (Naomi 2;5) (Becker, 2001)

Be is omitted in locative predicates in (34a) and (34b), in S-l adjectives in (34c). In contrast, *be* is overt in I-l predicates such as nominals as in (35a) and (35b), and I-l adjectives as in (35c). The average rate of overt *be* is only 20.9% in locative predicates and 72.4% in nominal predicates. A similar contrast is also found between S-l adjectives (46.2%) and I-l adjectives (68.3%).

Becker (2000, 2001) proposes that only S-l predicates contain Aspectual Phrase which provides a temporal anchor for the sentence. Copula *be* drops in S-l predicates because Infl is empty without [-fin] feature. AspP head, but not TP head, is bound by Tense operator.[5]

Given Becker's insight, it is expected that the copula omission is also found in other child languages. The next section deals with the Japanese copulative constructions and argues that underspecified T can be the same mechanism underlying copula omission in child Japanese.

6.2. The Omission/Production of Copulative Elements in Child Japanese

In adult Japanese, the copulas appear as *da* (or *ya* (Kansai dialect)) or *desu*, and they appear only in nominal predicates. In case the copulas *da* (and *ya*) are produced followed by a sentence-ending particle *no*, they have adnominal form *na*. Just like copulative sentences in English, it is impossible for I-l predicates to occur with temporal expressions (such as *kyoo* (today)). See the examples shown in (36).

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[5] Wexler (2000) argues that the asymmetry in copula omission found by Becker (2000, 2001) can be explained by adopting Agreement and Tense Omission Model (Schütze and Wexler, 1996) and Unique Checking Constraint (UCC) (Wexler, 1998). According to Wexler (1998), UCC allows a D-feature on DP to check against only one functional category in child grammar, thus forcing either AGR or TNS to be omitted. Wexler (2000) employs Diesing's (1992) proposal that the subject NP of I-l predicates is base-generated in TP Spec; while the subject NP of S-l predicates, which is base-generated inside VP, has to move to the TP Spec. TNS or AGRS must be omitted for UCC and consequently finite *be* in S-l predicates is dropped by children. UCC does not apply, when the subject DP is generated in the Spec of TP, and hence, *be* is not omitted. See Wexler (2000) for detailed discussion.

(36) a. Taroo-ga (kyoo) genki **da** (**ya, desu**)/**na**-no [Stage-level]
-Nom today active Dec Copula/Ad Copula-Particle
'Taroo is fine (today).'
b. Kore-ga (*kyoo) hikooki **da** (**ya, desu**)/**na**-no [Individual-level]
this-Nom today airplane Dec Copula/Ad Copula-Particle
'This is an airplane.'

As in (36a), the S-l predicate *genki* (active) can occur with the temporal modifier *kyoo*, while the I-l nominal predicates *hikooki* (airplane) as in (36b) cannot.

Our analysis of copulative elements produced by a Japanese-speaking child, Jun, who is a Kansai-dialect speaker, finds that Jun optionally drops copulas just like English-speaking children. The total number of copula omissions is 32 (18 in S-l predicates, 12 in I-l predicates and 2 in non-classified predicates) out of 1,677 utterances of copulative sentences[6] from the age of 2;0 to 3;1, when erroneous genitive subjects are also produced (from 2;2 to 2;9). The relevant examples are shown as in (37).

(37) a. Iya ***φ** no (Jun 2;2) (Adult form: **na** no)
reluctant Particle
'(I) don't want (to bring the toys).'
b. Kirai ***φ** wa (Jun 2;6) (Adult form: **da** wa)
dislike Particle
'(I) dislike (my daddy, so I will not bring a cup for him.) '
c. Jun-no ***φ** kara ne saattara akan yo (Jun 2;6) (Adult form: **da**-kara)
-Genitive because Particle touch not allowed Particle
'(This) is Jun's, so (you are) not allowed to touch (it).'

Although the subjects are null in (37), the adjectival noun *iya* (reluctant) in (37a) is erroneously followed by the particle *no* without a copula *na* in adnominal form . In (37b), the copula in declarative form *da* should appear following the adjectival noun *kirai* (dislike), but it is omitted. (37a) and (37b) are the copula omissions in S-l predicates. Copula omission in I-l predicates such as (37c) is seldom observed.

As for the production of copulative elements, the overt copulas are mostly found in I-l predicates with null subjects as given in (38). We also find that nominative subjects occur with copulas in declarative form (*da*) as shown in (39) from the age of one.

(38) a. Hikooki **ya** (Jun 1;10)
airplane Dec Copula
'(This) is an airplane.'

b. Gattyaman **da** (Jun 2;5)
Gattyaman Dec Copula
'(This) is Gattyaman (=a TV character).'

(39) Kore **ga** kakkoi buubu **ya** (Jun 2;6)
this-Nom cool car Copula
'This is the cool car.'

In (38a) and (38b), the copulas *da* (and *ya*) are produced followed by the nominal predicates *hikooki* (an airplane) and *Gattyaman*. When subject NP is overtly produced as in (39), the subject *kore* (this) is marked with the nominative Case. Based on the data shown above, a Japanese-speaking child tends to drop copulative elements in S-l predicates. Moreover, copulative elements are produced early, even before the stage of genitive subjects and copula omissions. The total numbers of copula omission and production in Jun's production are summarized in Table 3.

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[6] The copulative sentences containing *da, ya* and *desu* (copula-Pres) and *datta, yatta* and *deshita* (copula-Past) are counted, while the fixed expressions such as *nan(i)-da* (What is this?), *soo da* (I got it.), *koo-da* (I do in this way.), the imitation production which Jun repeated what his father said, unclear utterances and erroneous usages (e.g., *tabe-ta desu* (eat-Past Copula)) are not.

Table 3
The Number of Copulative Element Omission/Production in Jun's Production (2;0-3;1)

The Type of Predicates	S-l predicates	I-l predicates	Not Classified	Total Number
The Copula Omission (Rates)	18 (5.3%)	12 (1.1%)	2 (0.7%)	32
The Copula Production	318	1,056	271	1,645

Though the copula omission rates are not as high as Becker's (2000, 2001) data, Table 3 shows that Jun tends to drop copulas in S-l predicates. This result complies with our hypothesis.[7]

For this hypothesis, an interesting utterance of copula omission occurring with an erroneous genitive subject is found in Moko's corpus as shown in (40).

(40) Moko-tyan-***no** tensai **φ** (Moko 2;0)
-Gen genius
'Moko-tyan (=I) is genius.'

In (40), the declarative form of copula *da* or *desu* is not overtly produced. Moreover, our corpus analysis finds related Case errors with respect to the form of copulative elements as in (41) and (42).

(41) Kotesatehime-***no** daisuki **φ** (Moko 2;7)
-Gen love
'I love Kotesatehime (=a kind of princess).'

(42) A-tyan-***no** hambaagu suki-**na** no (A 2;3)
-Gen hamburger like-Ad Copula Particle
'A-tyan (=I) likes the hamburger steak.'

In (41), the copula after *daisuki* (love) drops, and the object NP, *Kotesasehime*, is erroneously marked with the genitive Case. In (42), the copula in adnominal form *na* is overtly produced since it is followed by the particle *no*. Thus, copula tends to drop, and when it does not, it appears in adnominal form followed by sentence-ending particle *no*. However, the copulas in declarative form *da* or *ya* are not found with erroneous genitive subjects. These facts suggest that it is the Adnominal T, but not the Declarative T, that checks the genitive subjects. Figure 2 gives the numbers of genitive Case errors, relative clauses (both *CP relatives and TP relatives) and the copula omissions.

[7] As one reviewer pointed out, Jun's copula drop rate is significantly lower than English-speaking children's. In adult Japanese, copulas can drop (e.g., *Kore-ga hikooki* φ 'This is an airplane.'). In our corpus analysis, such utterances are not classified as ungrammatical copula omissions, but the copula omissions such as (37) are counted. This may be the cause of very low rate of copula omissions in child Japanese.

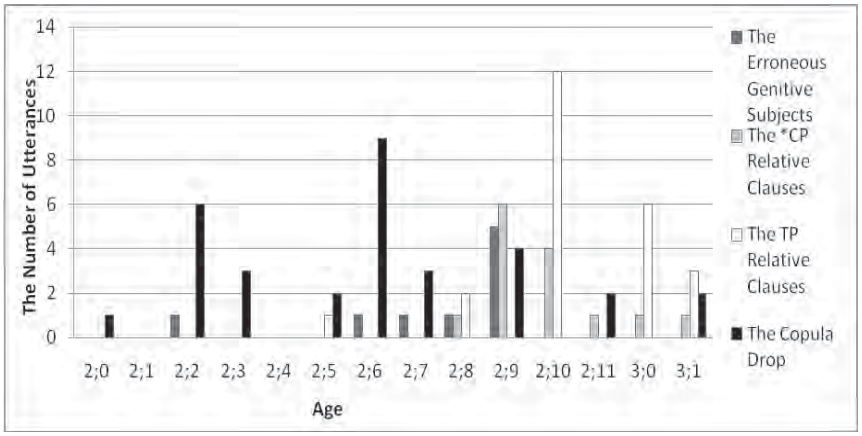

Figure 2. The Numbers of Utterances of 'Erroneous' Genitive Subjects, Relative Clauses and the Omission of Copulas (Jun)

Figure 2 shows that three types of errors are produced during the same age span, and it also shows that it is at around the age of 2;10 that all these errors cease.

Furthermore, we have supportive evidence found in erroneous genitive subjects for our hypothesis. See the English copulative sentences shown in (32), which are repeated in (43). This semantic contrast corresponds to the Japanese existential sentences as in (44).

(43) a. Rodney is in the kitchen. [Stage-level] b. Rodney is a cat/fat. [Individual-level]

(44) a. Hon-ga heya-**ni** **a-ru**
book-Nom room-at exist-Pres
'A book is in the room.'

b. Taroo-wa gakusei **de** **a-ru**
-Top student Copula exist-Pres
'Taroo is a student.'

The S-l predicate (43a) meaning that *Rodney* is located in a place, *kitchen*, corresponds to (44a) the existential sentence containing an existential verb '*(-ni) aru*' in Japanese. The I-l predicate (43b) corresponds to the construction with '*(-de) aru*,' which is the literal expression of *da* in Japanese as shown in (44b).

In Jun's corpus, we found that erroneous genitive subjects occurring with the S-l verb '*(-ni) aru*' as given in (45).

(45) a. Koori-***no** ippai a-ru (Jun 2;8)
ice-Gen a lot exist-Pres
'There are lots of ice.'

b. Karendaa-***no** a-ru (Moko 2;7)
calendar-Gen exist-Pres
'There is a calendar.'

As in (45), the subject NPs marked with the genitive Case are produced with the verb '*(-ni) aru*' as S-l predicates. Crucially, the erroneous genitive subjects co-occurring with I-l predicates '*(-de) aru,*' even with its colloquial expressions *da* or *desu*, are not found at all. Hence, the empirical evidence collected from the Japanese corpus given above is consistent with Becker's finding for child English.

The age span when Jun produces erroneous genitive subjects, TP and CP relative clauses, copulas and existential verb *aru* are summarized in Table 4.

Table 4
Ages that Jun Produced 'Erroneous' Genitive Subjects, Relative Clauses, Copulas and Existential Verbs

Age / Types of Predicates	2;0 2;1	2;2 2;3 2;4 2;5 2;6 2;7 2;8 2;9	2;10 2;11 3;0 3;1
Erroneous Genitive Subjects		←	
*CP Relative Clauses		←	- - →
TP Relative Clauses		←	←
Omission of Copulas in S-l P	←	←	- - - - - - - - - - - - - - -
Production of Copulas in S-l P		←	←
Existential Verb *aru*	←	←	←

** Dot lines indicate that *CP relative clauses and omission of copulas in S-l predicates are less produced compared to solid lines.

Our descriptive corpus analysis finds that the omission of copulas is observed roughly at around the same stage as erroneous genitive subjects (from 2;2 to 2;9). This result, hence, is consistent with our hypothesis that children's copula omissions and the erroneous genitive Case-marked subjects are due to the underspecification of the features in Tense.

7. Conclusion

In this paper, we showed that young children acquiring Japanese and English produce erroneous genitive subjects and omit copulative elements, based on the descriptive corpus analysis. The erroneous genitive subjects are observed during the Root Infinitive stage. Then, correct nominative subjects and copulative elements (in Stage-level predicates) optionally appear at the stage of Case errors. Genitive subjects cease when the adult-like relative clauses in Japanese and progressive sentences in English appear productively. Furthermore, the properties of sentences with the erroneous genitive subjects are parallel with the genitive subjects in the sentential modifiers in noun phrases in adult Japanese and gerundive constructions in adult English.

We argued that the genitive Case errors are due to the underspecification of Tense. Precisely, 2-year-old children have not specified the external relation of Adnominal or Gerundive T [Genitive] in the adult way, and they initially assume that the Adnominal or Gerundive T can be compatible with C, as they percolate CP as the default root clause (Rizzi, 1994). This happens after the acquisition of (i) the structure of relative clauses by setting the TP value for the parameter of the relative clauses (Murasugi, 1991) in Japanese and (ii) progressive sentences in English by finding the lexical and structural differences between DP gerund constructions and CP progressive sentences. In order to attain adult grammar, children need to learn that Adnominal T is compatible only with N (D), not with C. We have shown that our observation of the optional copula omission found in child Japanese also correlates with the lack of fully specified Tense.

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Selected Proceedings of the 4th Conference on Generative Approaches to Language Acquisition North America (GALANA 2010)

edited by Mihaela Pirvulescu, María Cristina Cuervo, Ana T. Pérez-Leroux, Jeffrey Steele, and Nelleke Strik

Cascadilla Proceedings Project Somerville, MA 2011

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This paper can be cited as:

Sawada, Naoko and Keiko Murasugi. 2011. A Cross-linguistic Approach to the 'Erroneous' Genitive Subjects: Underspecification of Tense in Child Grammar Revisited. In *Selected Proceedings of the 4th Conference on Generative Approaches to Language Acquisition North America (GALANA 2010)*, ed. Mihaela Pirvulescu et al., 209-226. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #2597.

Chapter 3: Syntactic Structures

(統語構造とその獲得)

On the Nature of the Complementizer *To*[*]

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1. Introduction

To is often assumed to be ambiguous between a marker of direct quotation and a complementizer (henceforth, comp) for finite propositions that corresponds to *that* in English. Typical examples of these two cases are shown in (1).

(1) a. Taroo-ga, "Hanako-wa boku-no uti-ni i-ru," to it-ta (koto)
T.-NOM H.-TOP I-GEN house-at is *to* said fact
'Taroo said, "Hanako is at my house."'

b. Taroo-ga Hanako-wa boku-no uti-ni i-ru to it-ta (koto)
T.-NOM H.-TOP I-GEN house-at is *to* said fact
'Taroo said that Hanako was at my house.'

(1a) and (1b) consist of the same string of words, including the first person pronoun *boku* 'I'. In (1a), the pronoun refers to Taroo. Thus, the embedded sentence must be a direct quotation of Taroo's utterance. On the other hand, the same pronoun *boku* refers to the speaker of the matrix clause in (1b). In this case, the embedded sentence must represent indirect discourse.

However, it has been widely known that the distinction between direct quotation and indirect discourse, apparently, is not always clear-cut. For example, Kuno (1988) discusses sentences such

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[*] Although I am still having a hard time accepting Yuki Kuroda's untimely death, I would like to take this opportunity to acknowledge my immense intellectual debt to him. I have been constantly inspired by his writings and discussions with him since I started working on linguistics more than 30 years ago. He was a great teacher, an ideal role model, and a wonderful friend. Over the years, I have developed a habit to engage in "imaginary discussions" with him, guessing how he would react to an idea and thinking of ways to reply to his likely comments. I am happy to be able to contribute this paper to this special issue of JJL in his memory as it benefitted very much from "discussions" with him.

This is an extended version of Section 2 of my earlier paper "Selection and Clause Types in Japanese," which was presented initially at the International Conference on Sentence Types held at the University of Frankfurt in June, 2009. The material was presented also at Nanzan University, University of York, MIT, and University of Connecticut. I would like to thank the audiences at these places, including Adriana Belletti, Tomohiro Fujii, Bill Haddican, Günther Grewendorf, Paul Portner, Peter Sells, Kensuke Takita, and Julio Villa-García, and also J. J. Nakayama for helpful comments. The preparation of this paper was supported in part by the Nanzan University Pache Research Subsidy I-A-2 (2010), which is gratefully acknowledged.

as (2):

(2) Taroo-wa zibun-no uti-ni ki-te kure to Ziroo-ni it-ta
T.-TOP self-GEN home-to come for-me *to* Z.-DAT said
'*Lit.* Taroo said to Ziroo *that* come to his (Taroo's) house'

The embedded clause is an imperative and expresses a request rather than a proposition. This suggests that it represents a direct discourse. However, if it is a direct quotation of an utterance by Taroo, the first person pronoun *boku* 'I' must appear instead of the reflexive *zibun* 'self'. As *zibun* is bound by the matrix subject, the part that contains it must represent an indirect discourse. Kuno concludes then that Japanese allows "blended discourse," which starts out as indirect and shifts to direct.

In this paper, I argue that examples like (2) look puzzling because of the incorrect assumption that *to* is a comp for finite propositions when it is not a marker of direct quotation. I propose instead that *to* is employed to report the *content* of an utterance or what is in the mind of the relevant person (typically the referent of the matrix subject), including an order, a question, a proposal, and an imaginary situation. Plann (1982) examines *que* in Spanish and argues that it is ambiguous between a comp for propositions and a comp for *paraphrases* of direct discourse. What I intend to demonstrate is that *to* is specialized for the latter purpose. This provides support for her proposal to distinguish the two types of *que*s as it shows that the second type has a unique phonetic realization in Japanese.

Plann's initial argument is based on the fact that *que*, in some contexts, can be followed by a question. In the following section, I first discuss parallel facts with *to* as in (3) and show that her analysis is directly applicable to Japanese.

(3) Taroo-wa Ziroo-ni [$_{CP}$ [$_{CP}$ [$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka] to] tazune-ta
T.-TOP Z.-DAT H.-NOM he-GEN house-to come Q *to* asked
'*Lit.* Taroo asked Ziroo *that if* Hanako is coming to his (Taroo's) house'

Then, I consider Kuno's (1988) examples mentioned above and argue that they too fall into place under Plann's analysis. In Section 3, I present evidence that reinforces this analysis of *to*. In particular, I compare the distributions of *to* and another comp *no*, and argue that there is a clear division of labor: while *to* appears when the matrix predicate is a verb of saying or thinking, *no* is employed when the CP expresses an event, state, or action. Section 4 concludes the paper.

2. *To* as a Complementizer for Reports of Direct Discourse

As seen above, *to* can follow questions and imperatives. In this section, I consider these cases in turn. Section 2.1 shows that *to* can follow a question CP in exactly the same context that *que* can take a question CP as a complement, that is, when the matrix predicate is a verb of saying or thinking. Section 2.2 reexamines Kuno's (1988) hypothesis that Japanese allows "blended

discourse" and shows that the relevant facts point to another parallelism between *to* and *que*, as *que* also can take an imperative complement as discussed in Rivero 1994.

2.1. The Distribution of *to* with Interrogative CP Complements

Let us start the discussion by examining (3) in a little more detail. The matrix verb, *tazune-ta* 'asked', selects for a question as shown in (4).

(4) Taroo-wa Ziroo-ni [$_{CP}$ [$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka/*to] tazune-ta
T.-TOP Z.-DAT H.-NOM he-GEN house-to come Q/*to* asked
'Taroo asked Ziroo *if* /**that* Hanako is coming to his (Taroo's) house'

This suggests that there is a selectional relation between the matrix verb and the question comp *ka* in (3), and that *to* is somehow transparent for this relation. However, the situation is not that straightforward. The verb, *siri-tagat-te-i-ru* 'want to know', also selects for a question as in (5a), but (5b) shows that it does not allow the *ka-to* sequence in contrast with *tazune-ta* 'asked'.

(5) a. Taroo-wa [$_{CP}$ [$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka] siri-tagat-te-i-ru
T.-TOP H.-NOM he-GEN house-to come Q want to know
'Taroo wants to know *if* Hanako is coming to his house'

b. *Taroo-wa [$_{CP}$ [$_{CP}$ [$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka] to] siri-tagat-te-i-ru
'*Lit.* Taroo wants to know *that if* Hanako is coming to his house'

If *to* is simply an optional comp that is ignored in selectional relations, (5b) is expected to be grammatical. The contrast between (3) and (5b) indicates there is indeed a selectional relation between the matrix predicate and *to*.

Then, what is the source of the contrast between (3) and (5b)? Here, Plann's (1982) discussion of *que* becomes quite relevant.[1] She shows that *que*, which serves as a comp for a propositional complement in (6a), can also be followed by questions as in (6b-c).

(6) a. Sabía que corría
knew(3sg.) *que* run(3sg.)
'He knew that he was running'

b. Te preguntan que para qué quieres el préstamo
you ask(3pl.) *que* for what want(2sg.) the loan
'They ask you what you want the loan for'

c. Pensó que cuáles serían adecuados
thought(3sg.) *que* which ones would be appropriate

[1] Thanks are due to Kensuke Takita for pointing out the relevance of Plann 1982 in this context.

'He wondered which ones would be appropriate'

But she notes at the same time that not all question-selecting predicates allow the presence of *que*. Some verbs that do not permit *que* are shown in (7).

(7) Ya supieron/entendieron/recordaron (*qui) por qué lo habías hecho
already found out(3pl.)/understood(3pl.)/remember(3pl.) *que* why it had(2sg.) done
'They already found out/understood/remembered why you had done it'

Thus, *que* is observed with an embedded question when the matrix verb is 'ask' or 'think', but not when it is 'find out', 'understand', or 'remember'.

Examining more relevant examples, Plann draws the generalization that *que* can take a question CP complement when the matrix predicate is a verb of saying or thinking, that is, a verb that is compatible with direct quotation. Based on this, she proposes that *que* in this case is a comp that introduces a paraphrase of direct discourse. According to her analysis, there are three types of comp's in Spanish; a null comp for question CPs, *que* for propositions, and *que* for paraphrases of direct discourse. Following Lahiri 1991, I call the last one *que* for reports.

Let us now return with this background to the contrast between (3) and (5b), repeated as (8a-b).

(8) a. Taroo-wa Ziroo-ni [$_{CP}$ [$_{CP}$ [$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka] to] tazune-ta
T.-TOP Z.-DAT H.-NOM he-GEN house-to come Q *to* asked
'*Lit.* Taroo asked Ziroo *that if* Hanako is coming to his (Taroo's) house'

b. *Taroo-wa [$_{CP}$ [$_{CP}$ [$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka] to] siri-tagat-te-i-ru
T.-TOP H.-NOM he-GEN house-to come Q *to* want to know
'*Lit.* Taroo wants to know *that if* Hanako is coming to his house'

Here, the matrix verb in (8a), *tazune-ta* 'asked', is a verb of saying, but that in (8b), *siri-tagat-te-i-ru* 'want to know', is not a verb of saying or thinking. Thus, Plann's generalization seems applicable to Japanese. This is confirmed by further examination of the verbs that allow the *ka-to* sequence. That is, *to* can take a question CP as a complement when the matrix predicate is a verb of saying or thinking, exactly as *que* for reports. Partial lists of the Japanese matrix predicates that allow the *ka-to* sequence and those that do not are given in (9).

(9) a. matrix predicates that allow *ka-to*:
kik-u 'ask', *situmon-su-ru* 'question', *yu-u* 'say', *sakeb-u* 'scream', *omo-u* 'think'

b. matrix predicates that do not allow *ka-to*:
tyoosa-su-ru 'investigate', *hakken-su-ru* 'discover', *rikai-su-ru* 'understand',
sir-ana-i 'not know'

The verbs in (9a) are compatible with direct quotation and those in (9b) are not, as illustrated in

(10).[2]

(10) a. Taroo-wa, "Hanako-wa nani-o si-te-i-ru no daroo ka," to omot-ta
T.-TOP H.-TOP what-ACC doing *no* can be Q *to* thought
'Taroo thought, "What can it be that Hanako is doing?"'

b. *Taroo-wa, "Hanako-wa nani-o si-te-i-ru no daroo ka," to sir-ana-i
T.-TOP H.-TOP what-ACC doing *no* can be Q *to* not know
'*Lit.* Taroo doesn't know, "What can it be that Hanako is doing?"'

It has been shown that *to* can have a question CP complement in the same context as *que*. I hence conclude that it too can serve as a comp for reports of direct discourse. The following subsection considers Kuno's (1988) "blended discourse" and presents further evidence for this conclusion.

2.2. On Kuno's (1988) Blended and Quasi-Direct Discourse

As noted above, Kuno (1988) proposes that a sentence embedded under *to* can be a "blended discourse," starting as indirect and shifting to direct. The relevant example (2) is repeated below as (11b), together with its direct discourse counterpart in (11a).

(11) a. Taroo-wa, "Boku-no uti-ni ki-te kure," to Ziroo-ni it-ta
T.-TOP I-GEN home-to come for-me *to* Z.-DAT said
'Taroo said to Ziroo, "Come to my house"'

b. Taroo-wa zibun-no uti-ni ki-te kure to Ziroo-ni it-ta
T.-TOP self-GEN home-to come for-me *to* Z.-DAT said
'*Lit.* Taroo said to Ziroo *that* come to self's house'

I first argue that "blended discourse" is really indirect. Then I show that Plann's (1982) analysis predicts examples such as (11b) to be possible and that the parallelism between *que* and *to* holds in this case also.

Kuno assumes that the verb in the embedded clause of (11b) represents some kind of direct discourse as it expresses a request. However, he points out at the same time that it cannot be a direct quotation. Note first that the form of an expression for request varies in accordance with the degree of "politeness," as shown in (12).

[2] Another comp *n(o)* appears in these examples. It is discussed in comparison with *to* in the following section.

(12) a. #Taroo-wa, "Boku-no uti-ni ki-te kure," to Ito-sensei-ni it-ta
T.-TOP I-GEN home-to come for me *to* I.-Prof.-DAT said
'Taroo said to Prof. Ito, "Come to my house"'

b. Taroo-wa, "Watasi-no uti-ni oi-de itadak-e-mas-u ka," to Ito-sensei-ni it-ta
T.-TOP I-GEN home-to come for me (polite) Q *to* I.-Prof.-DAT said
'Taroo said to Prof. Ito, "Would you please come to my house?"'

(12a) is inappropriate as an utterance of a student, Taroo, to his teacher, Prof. Ito, because *ki-te kure* 'come for me' is a non-polite, neutral expression. (12b) shows what Taroo would actually say in this context. Kuno points out that the judgments, interestestingly, are reversed when direct discourse is turned into "blended discourse." This is shown in (13).

(13) a. Taroo-wa zibun-no uti-ni ki-te kure to Ito-sensei-ni it-ta
T.-TOP self-GEN home-to come for me *to* I.-Prof.-DAT said
'*Lit.* Taroo said to Prof. Ito that come to self's house'

b. *Taroo-wa zibun-no uti-ni oi-de itadak-e-mas-u ka to Ito-sensei-ni it-ta
T.-TOP self-GEN home-to come for me (polite) Q *to* I.-Prof.-DAT said
'*Lit.* Taroo said to Prof. Ito that would you please come to my house?'

(13a) contains the neutral, non-polite form, *ki-te kure* 'come for me', and is perfectly grammatical. On the other hand, (13b) with the polite expression is not just inappropriate but ungrammatical. Based on this observation, Kuno concludes that the direct part of "blended discourse" is not really direct but only "quasi-direct." According to him, "blended discourse," then, consists of indirect discourse and "quasi-direct" discourse.

Kuno goes on to discuss why polite expressions are not allowed in "blended discourse." His answer is that this is because polite forms do not appear in embedded clauses as shown in (14).

(14) a. *Watasi-wa [$_{NP}$ [kinoo kai-masi-ta] hon]-o yomi-masi-ta
I-TOP yesterday bought (polite) book-ACC read (polite)
'I read the book I bought yesterday'

b. Watasi-wa [$_{NP}$ [kinoo kat-ta] hon]-o yomi-masi-ta
I-TOP yesterday bought (neutral) book-ACC read (polite)

The sentences in (14) are polite expressions as the matrix verb is in the polite form. Yet, the verb embedded in the relative clause must assume the neutral form. Kuno's analysis is that (13) allows only the neutral form of the expression of request for the same reason.

This account is convincing, but it implies that "blended discourse" counts as an embedded clause, and hence, that it is after all indirect. This is so because direct discourse by definition has matrix properties. Then, the remaining question is why *to* can embed a sentence expressing a

request while *that* in English, for example, cannot, as illustrated in (15).

(15) *John said to Mary that (please) come to his house

The answer is straightforward given the discussion in the preceding subsection. *To*, unlike *that*, is a comp for reports of direct discourse. The direct discourse that is reported can be a request as well as a question. Hence, an expression of request or an imperative can appear as the complement of *to* just like a question can.

Given the hypothesis that *to* is exactly like *que* in Spanish, it is predicted that *que* can also take an imperative complement. And interestingly enough, relevant examples are presented in Rivero 1994 as supporting evidence for Plann's analysis of *que*. (16a) is one of her examples.

(16) a. Dijo que a no molestarle
said (3sg.) that to not bother-him
'He said not to bother him'

b. Dijo, "A no molestarme!"
said (3sg.) to not bother-me
'He said, "Don't bother me!"

(16a) clearly contains an embedded imperative, but it is indirect discourse as it contains a third person clitic unlike the direct quotation in (16b). Thus, the comparison of Kuno 1988 and Rivero 1994 points to another similarity between *to* and *que*.[3]

The analysis of *to* as a comp for reports of direct discourse predicts that there are more sentence types, aside from questions and imperatives, that can be embedded under *to*. This prediction is discussed in Matsumoto 2010, where she points out that exclamatives and expressions employed in invitation for joint action can be followed by *to*. (17a-b) illustrate these cases.

(17) a. Taroo-ga [$_{CP}$ kare-no musuko-wa nante kasiko-i n daroo to] omot-ta koto
T.-NOM he-GEN son-TOP how smart that can be *to* thought fact
'*Lit.* the fact that Taroo thought that how smart can his (Taroo's) son be'

b. Hanako-wa Taroo-o [$_{CP}$ kanozyo-no ie-ni ik-oo to] sasot-ta
H.-TOP T.-ACC she-GEN house-to let's go *to* invited
'*Lit.* Hanako invited Taroo that let's go to her (Hanako's) house'

These examples provide further evidence for the analysis presented here.

[3] A brief survey of the literature suggests that a comp for reports is quite widespread. See, for example, Jayaseelan 2008 for Malayalam, and Grewendorf and Poletto 2009 for Cimbrian, a German dialect spoken in northeastern Italy.

3. Report as the Unique Function of *to*

It was argued in the preceding section that *to*, like *que*, functions as a comp for reports of direct discourse. As noted there, *que* is ambiguous between a comp for reports and a comp for propositions. Then, it may be questioned whether *to* is ambiguous in the same way. As *to* has often been assumed to correspond to *that* in English, the answer appears to be positive. However, I argue in this section that it is not. In Section 3.1, I argue that there is a division of labor between *to* and another comp *no*, and that the former is for reports of direct discourse while the latter is employed for propositions. Section 3.2 presents further suggestive evidence that *to* is specialized for the purpose of reports.

3.1. The Division of Labor between *to* and *no*

To is widely assumed to be the comp that corresponds to *that* in English because it appears with typical bridge verbs like *omo-u* 'think' and *yu-u* 'say' as shown in (18).

(18) Taroo-wa [$_{CP}$ Hanako-ga zibun-no kagi-o mot-te-i-ru to] omot-ta/it-ta
T.-TOP H.-NOM self-GEN key-ACC have *to* thought/said
'Taroo thought/said that Hanako has his keys'

This suggests that *to* performs dual functions as a comp for propositions as well as reports. There is another comp *no*, which appears in the CP complements of verbs such as *sit-te-i-ru* 'know', as in (19).[4]

(19) Taroo-wa [$_{CP}$ Hanako-ga soko-ni i-ru no]-o sit-te-i-ta
T.-TOP H.-NOM there-in is *no*-ACC knew
'Taroo knew *that* Hanako was there'

As *no* is assumed to have a limited distribution as discussed below, it may seem irrelevant for the consideration here. But I argue in this subsection that the distribution of *no* is much wider than has been assumed and that it is the comp for propositions. The conclusion of this section is that *no* is the regular comp for propositions and *to* is employed specifically for reports of direct discourse.

Kuno (1973) provides a detailed comparison of *to* and *no*, and suggests that a CP headed by *no* carries a factive presupposition.[5] Although he acknowledges that this generalization has some

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[4] The comp *no* is nominal in nature and requires a Case marker when it heads a CP in argument position. It is often called a 'nominalizer' in part for this reason. Although its categorial status is not important for the discussion here, it should be noted that there are cases where it clearly heads a CP rather than an NP, for example, in cleft sentences briefly discussed in Section 3.2. See Murasugi 1991 for detailed discussion on this point.

[5] He also considers *koto*, which has a similar but not identical distribution as *no*. I do not discuss it here because it is fairly clear that it is a noun and as far as I can tell, the examination of its distribution does not

obvious exceptions, it is motivated by examples such as (18) and (20).

(20) Taroo-wa zibun-no hahaoya-ni at-ta no-o /*to kookai-si-ta
T.-TOP self-GEN mother-DAT met *no*-ACC/*to* regretted
'Taroo regretted that he met his mother'

The matrix verb, *kookai-si-ta* 'regretted', in (20) is factive and the CP complement must be headed by *no*. On the other hand, *to* is required in (18), where the matrix verb is clearly non-factive. The example is totally ungrammatical with *no*.

However, the distribution of *no* is actually much wider than Kuno's rough generalization suggests. (21) provides partial lists of the predicates that take CP complements headed *to* and those that appear with CPs headed by *no*.

(21) a. verbs that take CP complements headed by *to*:
omo-u 'think', *kangae-ru* 'consider', *sinzi-ru* 'believe', *i-u* 'say', *sakeb-u* 'scream', *syutyoo-su-ru* 'claim, insist', *tazune-ru* 'inquire', *kitai-su-ru* 'expect', *kanzi-ru* 'feel'

b. (i) verbs that take CP complements headed by *no*:
wasure-ru 'forget', *kookai-su-ru* 'regret', *mi-ru* 'see', *mat-u* 'wait', *tamera-u* 'hesitate', *kyohi-su-ru* 'refuse', *ukeire-ru* 'accept', *kitai-su-ru* 'expect', *kanzi-ru* 'feel'

(ii) predicates that take CP subjects headed by *no*:
akiraka-da 'is clear', *kanoo-da* 'is possible', *kantan-da* 'is easy', *muzukasi-i* 'is difficult', *taihen-da* 'is a big deal'

It is true that *no* occurs with typical factive verbs such as *wasure-ru* 'forget' and *kookai-su-ru* 'regret'. But factive verbs clearly constitute a minority group among those predicates that appear with *no*-headed CPs.

The status of Kuno's generalization is unclear even with *wasure-ru* 'forget'. Kiparsky and Kiparsky (1970) distinguishes the two instances of *forget* in (22).

(22) a. John forgot (the fact) that Mary was in Tokyo
b. John forgot to do the homework

In (22a), it takes a finite complement and the truth of the embedded sentence is presupposed. Kiparsky and Kiparsky propose that the sentence is derived by deletion of *the fact* in this case. On the other hand, *forget* takes an infinitival complement in (22b) and there is no presupposition associated with the embedded clause. And interestingly, the Japanese counterparts of (22a-b) both have *no*, as shown in (23).

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lead to further insights on the nature of *to*.

(23) a. Taroo-wa [$_{CP}$ [$_{TP}$ Hanako-ga Tookyoo-ni i-ru] no]-o wasure-te-i-ta
T.-TOP H.-NOM Tokyo-in is *no*-ACC had forgotten
'Taroo had forgotten that Hanako was in Tokyo'

b. Taroo-wa [$_{CP}$ [$_{TP}$ syukudai-o su-ru] no]-o wasure-ta
T.-TOP homework-ACC do *no*-ACC forgot
'Taroo forgot to do the homework'

This indicates that presupposition has nothing to do with the selection of *no* by *wasure-ru* 'forget'.

Kuno provides other data that suggest that a CP headed by *no* carries a factive presuppoition. Among them is the ungrammaticality of (24a).

(24) a. *[$_{CP}$ [$_{TP}$ Taroo-ga soko-ni it-ta] no]-wa uso-da
T.-NOM there-to went *no*-TOP lie-is
'It is a lie that Taroo went there'

b. [$_{CP}$ [$_{TP}$ Taroo-ga soko-ni it-ta] toyuuno]-wa uso-da
T.-NOM there-to went *toyuuno*-TOP lie-is
'It is a lie to say that Taroo went there'

According to Kuno, (24a) presupposes that Taroo went there. Hence, the sentence does not make sense as it asserts that it is a lie. He points out that *toyuuno*, which he considers to be another comp, must be used in this context as in (24b).

However, this account seems dubious because examples such as (25) make perfect sense.

(25) [$_{CP}$ [$_{TP}$ Taroo-ga soko-ni it-ta] no]-wa zizitu/akiraka-da
T.-NOM there-to went *no*-TOP fact/clear-is
'It is a fact/clear that Taroo went there'

If this sentence presupposes that Taroo went there, what it asserts must be a tautology or at least be trivial. But the sentence expresses a meaningful assertion. Then, why is (24a) ungrammatical? Here, note that *toyuuno* in (24b) can be decomposed into the comp *to*, the verb *yu-u* 'say', and the comp *no*. So, first, as *no* occurs as the last element, the comp after all seems compatible with the predicate *uso-da* 'lie-is'. Secondly, with the decomposition, the sentence literally means 'It is a lie to say that Taroo went there'. This is consistent with the meaning of *uso*, that is, to say something that is false. Then, it can be conjectured that (24a) is deviant because it asserts that the sentence 'Taroo went there' is a lie. This sentence expresses a proposition and can be true or false, but cannot be a lie, strictly speaking. One can only lie by uttering a false sentence.

Having seen that *no* is not necessarily associated with a factive presupposition, let us consider again the lists of predicates in (21), repeated below in (26).

(26) a. verbs that take CP complements headed by *to*:

omo-u 'think', *kangae-ru* 'consider', *sinzi-ru* 'believe', *i-u* 'say', *sakeb-u* 'scream', *syutyoo-su-ru* 'claim, insist', *tazune-ru* 'inquire', *kitai-su-ru* 'expect', *kanzi-ru* 'feel'

b. (i) verbs that take CP complements headed by *no*:
wasure-ru 'forget', *kookai-su-ru* 'regret', *mi-ru* 'see', *mat-u* 'wait', *tamera-u* 'hesitate', *kyohi-su-ru* 'refuse', *ukeire-ru* 'accept', *kitai-su-ru* 'expect', *kanzi-ru* 'feel'

(ii) predicates that take CP subjects headed by *no*:
akiraka-da 'is clear', *kanoo-da* 'is possible', *kantan-da* 'is easy', *muzukasi-i* 'is difficult', *taihen-da* 'is a big deal'

The verbs in (26b-(i)) cover a wide range, and their CP complements represent events, states, or actions. For example, one regrets that an event happened, sees/feels an event happen or a state obtain, waits/expects for an event to happen or a state to obtain, and hesitates to perform an action. The same can be said of the CP subjects of the predicates in (26b-(ii)). What can be clear is the existence (or non-existence) of an event or a state in the past, present, or future. What can be easy/difficult is to perform an action. Thus, CPs headed by *no* represent propositions.[6]

Those verbs listed in (26a), on the other hand, are all compatible with direct quotation. A couple of examples are given in (27).

(27) a. Taroo-wa, "Boku-no uti-ni atumat-te kure," to saken-da
T.-TOP I-GEN house-at gather for me *to* screamed
'Taroo screamed, "Gather at my house!"'

b. Hanako-wa, "Watasi-ga Taroo-ni a-u," to syutyoo-si-ta
H.-TOP I-NOM T.-DAT meet *to* insisted
'Hanako insisted, "I will go see Taroo."'

Hence, all instances of CPs headed by *to* can be analyzed as representing reports of direct discourse. I conclude then that *no* is the comp for propositions and *to* is employed specifically as the comp for reports.

Before I conclude this subsection, I would like to briefly return to the *ka-to* sequence discussed in the preceding section and make a remark on the selectional relation between the matrix verb and

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[6] It should be noted here that the verbs that take *no*-headed CP complements roughly correspond to those English verbs that take gerunds. (See Rosenbaum 1967 for detailed discussion on the latter.) This must be related to the nominal nature of those CPs alluded to in Footnote 4. Also relevant in this context is the analysis of perception verb complements in Higginbotham 1983. He considers their nominal property and proposes to capture it by assigning an interpretation that involves quantification over events as illustrated roughly in (i).

(i) a. John saw Mary walk
b. There is an event e such that e is walking and e is by Mary and John saw e

the comp. It was shown that *ka-to* sequence is allowed when the matrix predicate is a verb of saying or thinking as in (3), repeated below as (28).

(28) Taroo-wa Ziroo-ni [$_{CP}$[$_{CP}$[$_{TP}$ Hanako-ga kare-no ie-ni ku-ru] ka] to] tazune-ta
T.-TOP Z.-DAT H.-NOM he-GEN house-to come Q *to* asked
'*Lit.* Taroo asked Ziroo *that if* Hanako is coming to his (Taroo's) house'

Further, it was suggested that the selectional relation holds between the matrix verb and *to* in this case: *tazune-ru* 'ask' selects for a report and hence, takes a CP complement headed by *to*. This predicts that all the verbs that select for reports allow the *ka-to* sequence regardless of whether they also select for questions. This is so because the question comp *ka* in a *ka-to* sequence does to participate in selectional relation with the matrix verb.

The prediction is borne out in an interesting way by the verb *omo-u* 'think'. (29) shows that this verb cannot take a question CP as a complement.

(29) a. Taroo-wa [$_{CP}$[$_{TP}$ Hanako-ga soko-ni ik-u] to] omot-te-i-ru
T.-TOP H.-NOM there-to go *to* think
'Taroo thinks that Hanako will go there'

b. *Taroo-wa [$_{CP}$[$_{TP}$ dare-ga soko-ni ik-u] ka] omot-te-i-ru
T.-TOP who-NOM there-to go Q think
'*Lit.* Taroo thinks who will go there'

Yet, it allows the *ka-to* sequence as in (30).

(30) Taroo-wa [$_{CP}$[$_{CP}$[$_{TP}$ dare-ga soko-ni ik-u] ka] to] omot-te-i-ru
T.-TOP who-NOM there-to go Q *to* think
'*Lit.* Taroo thinks that who will go there' (Taroo thinks that no one will go there)

The question CP in (30) is construed as a rhetorical question implying that no one will go there. Nevertheless, the grammaticality of (30) indicates that there is no selectional relation between the matrix verb and the question comp *ka*. This is so because the verb *omo-u* 'think' does not allow a question complement, whether it is interpreted as a genuine question or as a rhetorical question, as (29b) shows. The selectional relation is between the verb and the comp *to*, which is legitimate. The question CP must be construed as a rhetorical question only because the meaning of the matrix verb implies that what Taroo has in mind is a thought and not a question in this case.

3.2. Further Evidence for the Analysis of *to* as a Comp for Reports

In this subsection, I present three pieces of suggestive evidence for the analysis of *to* presented above. The first concerns the interpretation of examples in which CPs headed by *to* and by *no* co-occur. The second has to do with the distribution of *to*-headed CPs within noun phrases. The

third is children's overgeneration of *no* in relative clauses, discussed in detail in Murasugi 1991. I argue that the relevant facts are consistent with the analysis of *to* as a comp for reports.

First, when a sentence has a verb that selects a *no*-headed CP, it can have a *to*-headed CP in addition as an adjunct. (31) illustrates this with the verbs *mat-u* 'wait' and *kookai-su-ru* 'regret'.

(31) a. Taroo-wa [$_{CP}$ Hanako-ga zibun-o tasuke-te kure-ru to] (it-te/omot-te)
T.-TOP H.-NOM self-ACC help for him *to* saying/thinking
[$_{CP}$ kanozyo-ga ku-ru no]-o mat-ta
she-NOM come *no*-ACC waited
'Taroo waited for Hanako to come, saying/thinking that she would help him'

b. Taroo-wa [$_{CP}$ zibun-ga keisotu dat-ta to] (omot-te)
T.-TOP self-NOM thoughtless was *to* thinking
[$_{CP}$ kawa-ni tobikon-da no]-o kookai-si-ta
river-in jumped-into *no*-ACC regretted
'Taroo regretted that he jumped into the river, thinking that he was thoughtless'

In (31a), what Taroo waited for is the event of Hanako coming and the CP headed by *no* is the complement of the verb. The *to*-headed CP expresses what Taroo said or had in mind as an adjunct. Similarly, in (31b), what Taroo regretted is his past action of jumping into the river, and the *to*-headed CP expresses his thought that led to this regret. These examples show that CPs headed by *to* can even be employed as adjuncts to report what the matrix subject says/said or has/had in mind. It seems that this is possible because *to* has a unique function, that is, to introduce a report of direct discourse.

The same observation can be made with verbs that allow their CP complements to be headed either by *to* or by *no*. *Kitai-su-ru* 'expect' is one such verb, as shown in (32).

(32) a. Taroo-wa [$_{CP}$ Hanako-ga zibun-o tasuke-te kure-ru to] kitai-si-ta
T.-TOP H.-NOM self-ACC help for him *to* expected
'Taroo expected Hanako to help him'

b. Taroo-wa [$_{CP}$ kanozyo-ga ku-ru no]-o kitai-si-ta
T.-TOP she-NOM come *no*-ACC expected
'Taroo expected her to come'

c. Taroo-wa [$_{CP}$ Hanako-ga zibun-o tasuke-te kure-ru to] (omot-te)
T.-TOP H.-NOM self-ACC help for him *to* thinking
[$_{CP}$ kanozyo-ga ku-ru no]-o kitai-si-ta
she-NOM come *no*-ACC expected
'Taroo expected Hanako to come, thinking that she would help him'

Kitai-su-ru 'expect' can take a *to*-headed CP as a complement as in (32a). But when it co-occurs

with a *no*-headed CP as in (32c), the latter serves as the complement and the CP headed by *to* becomes an adjunct reporting what the matrix subject has/had in mind.

The discussion above suggests that *to*-headed CPs are employed extesively as adjuncts. So let me briefly comment and speculate on the complement status of the *to*-headed CP in (32a) before moving on to the second set of data. Intuitively speaking, the CP serves as a complement in this example because what Taroo expected and what he had in mind coincide. That is, the CP is headed by *to* because it reports what Taroo had in mind and it is the complement because it expresses what he expected to happen. But there is another fact that seems quite relevant for the complement status of *to*-headed CPs. That is, those verbs that take *to*-headed CP complements can often have accusative NP objects instead, and when both are present, the *to*-headed CP is typically in appositive relation with the object NP. A relevant example is shown in (33).

(33) a. Taroo-wa [$_{CP}$ Hanako-ga erab-are-ru beki-da to] syutyoo-si-ta
T.-TOP H.-NOM select-Passive should *to* insisted
'Taroo insisted that Hanako should be selected'

b. Taroo-wa zibun-no iken-o syutyoo-si-ta
T.-TOP self-GEN opinion-ACC insisted
'Taroo pushed his own opinion'

c. Taroo-wa [$_{CP}$ Hanako-ga erab-are-ru beki-da to] zibun-no iken-o syutyoo-si-ta
T.-TOP H.-NOM select-Passive should *to* self-GEN opinion-ACC insisted
Taroo pushed his own opinion that Hanako should be selected'

The verb *syutyoo-su-ru* 'insist', which takes a *to*-headed CP complement, can have an NP object instead, as shown in (33a-b). When they co-occur as in (33c), the CP is in appositive relation to the object NP. This is consistent with the analysis of *to* entertained here. The CP expresses the content of Taroo's opinion, and hence, reports what he insisted on.

Similar but more interesting for the purpose here are the examples in (34a-c), where the matrix verb is *su-ru* 'do'.

(34) a. Taroo-wa [$_{CP}$ Hanako-ga erab-are-ru beki-da to] syutyoo-o si-ta (= syutyoo-si-ta)
T.-TOP H.-NOM select-Passive should *to* claim-ACC did insisted
'Taroo insisted that Hanako should be selected'

b. Taroo-wa [$_{CP}$ ookami-ga ku-ru to] keikoku-o si-ta (= keikoku-si-ta)
T.-TOP wolf-NOM come *to* warning-ACC did warned
'Taroo warned that wolves were coming'

c. Taroo-wa [$_{CP}$ sore-wa doko-ni ar-u ka to] situmon-o si-ta (= situmon-si-ta)
T.-TOP it-TOP where-at is *ka* *to* question-ACC did questioned
'Taroo asked where it is'

These are examples of the so called 'light verb constructions', discussed in detail in Grimshaw and Mester 1988, and Saito and Hoshi 2000, among others. In (34b), for example, the object and the verb, *keikoku-o si-ta* 'warning-ACC did', express the same meaning as the single verb, *keikoku-si-ta* 'warned'. Saito ad Hoshi propose an analysis in which the accusative noun covertly incorporates into the light verb *su-ru* 'do', and form a predicate just like the corresponding single verb. But independently of the specific analysis, what is of interest here is the fact that the *to*-headed CP is in an appositive relation with the accusative noun. In (34b), the CP reports the content of the warning Taroo made.

This leads to a speculation on the status of the *to*-headed CP complements. Let us take (34b) again as the example to consider. The verb, *keikoku-su-ru* 'warn', takes a *to*-headed CP complement. As it contains the morpheme, *keikoku* 'warning', then it seems possible that the CP assumes the complement status by virtue of being in appositive relation with this noun. This speculation applies to all cases where the matrix verb has the form noun+*su-ru* 'noun+do', including (32a), repeated below as (35).

(35) Taroo-wa [$_{CP}$ Hanako-ga zibun-o tasuke-te kure-ru <u>to</u>] kitai-si-ta
T.-TOP H.-NOM self-ACC help for him *to* expected
'Taroo expected Hanako to help him'

In this example, the matrix verb contains the morpheme *kitai* 'expectation', and the complement CP is in appositive relation with the noun. Further, the speculation can be extended abstractly to mono-morphemic verbs as well. Most, if not all, of those verbs can be "decomposed" into a noun and a verb, as indicated in (36).

(36) *omo-u* 'think' = have a thought
yu-u 'say' = make a statement
tazune-ru 'inquire' = make an inquiry
kanzi-ru 'feel' = have a feeling
tanom-u 'request' = make a request

If *to*-headed CPs represent reports of direct discourse, then it is not surprising that they are employed extensively as appositives to specify the contents of thoughts, feelings, statements, requests, inquiries, and the like. The speculation offered here is that this is the case even when *to*-headed CPs are complements.

Let us now turn to the second suggestive evidence for the analysis of *to* as a comp for reports, which is actually related to the speculation made above. When a *to*-headed CP occurs in a nominal projection, it is in appositive relation with the head noun.[7]

(37) a. [$_{CP}$ soko-ni iki-ta-i <u>to</u>]-no kiboo
there-to go-want *to* hope

[7] The morpheme *no* that follows the CP is either a genitive marker or a 'linker' in the sense of Watanabe 2010. See Saito, Lin and Murasugi 2008, Watanabe 2010, and the references cited there.

'the wish to go there'

b. [$_{CP}$ daigaku-ni ik-u beki da to]-no Hanako-no settoku
college-to go should *to* H.-GEN persuasion
'the persuasion of Hanako that she should go to college'

c. [$_{CP}$ ookami-ga ku-ru to]-no keikoku
wolf-NOM come *to* warning
'the warning that wolves were coming'

The CP in (37a), for example, reports the content of the head noun *kiboo* 'hope', and again this is consistent with the analysis that *to* is a comp for reports.

Further, the following contrasts suggest that a *to*-headed CP can only have this function:

(38) a. [$_{CP}$ [$_{CP}$ sore-ga doko-ni ar-u ka] *(to)]-no situmon
it-NOM where-at is *ka* *to* question
'the question where it is'

b. [$_{CP}$ [$_{CP}$ sore-ga doko-ni ar-u ka] (*to)]-no mondai
it-NOM where-at is *ka* *to* problem
'the problem of where it is'

(39) a. [$_{CP}$ [$_{CP}$ sore-ga doko-de ka-e-ru ka] *(to)]-no hatugen
it-NOM where-at buy-can *ka* *to* utterance
'an utterance asking where one can buy it'

b. [$_{CP}$ [$_{CP}$ sore-ga doko-de ka-e-ru ka] (*to)]-no zyoohoo
it-NOM where-at buy-can *ka* *to* information
'information about where one can buy it'

The inner CP in (38) is a question headed by *ka*. When the head noun is *situmon* 'question', *to* obligatorily follows this CP as in (38a). On the other hand, *to* cannot occur when the head noun is *mondai* 'problem', as shown in (38b). This contrast is expected, given that *to* is a comp for reports. In (38a), the CP is in appositive relation with the head noun and reports the content of the question. In (38b), this relation does not hold as a problem is not a question. Similarly, the contrast in (39) obtains because a question CP can report the content of an utterance but not the content of information.

The final piece of suggestive evidence for the analysis of *to* as a comp for reports comes from child language data. As discussed extensively in the literature, the overgeneration of *no* in relative clauses is widely observed with 2-4 year olds. The following examples are from Murasugi 1991.

(40) a. [ohana mot-te-ru *no] wanwa (2;6)

flower have *no* doggie
'the doggie that is holding flowers'

b. [buta-san tatai-te-ru *no] taiko (2;11)
Mr. pig is hitting *no* drum
'the drum that the pig is playing'

These examples are ungrammatical with *no* in adult Japanese. Murasugi examines the properties of the overgenerated *no* in detail, and argues that it is a comp. According to her analysis, relative clauses are TPs in adult Japanese. However, children at one point hypothesize that they are CPs, just like English relative clauses, and hence, place *no* in their head positions. They only later discover that there is no position for comp in Japanese relatives and cease to overgenerate *no*.

One question that arises with this analysis is why *no*, and not *to*, is overgenerated in the head positions of the CP relatives. Murasugi (2009) addresses this question, referring to Schachter's (1973) cross-linguistic observation that the same comp is employed in relative clauses and clefts. *No* appears in Japanese clefts as shown in (41).

(41) [$_{CP}$ Nimotu-ga todoi-ta no]-wa Nagoya-kara-da
package-NOM arrived *no*-TOP Nagoya-from-is
'It is from Nagoya that a package arrived'

Then, given Schachter's generalization, it is not surprising that children overgenerate *no*. But one may ask further why it is that *no*, and not *to*, is employed in clefts and children's relative clauses. And for this, the analysis of *to* as a comp for reports provides a clear answer. The subject CP in clefts expresses a proposition and is not a report of direct discourse. Hence, *no* must be employed. There is simply no way for *to* to appear in this context. Similarly, a relative clause does not paraphrase or report a direct discourse. Then, children could not overgenerate *to* in relative clauses. This account holds if *to* is never a comp for propositions and is employed exclusively as a comp for reports as argued in this paper.

4. Conclusion

I argued in this paper that *to* in Japanese is not a comp for finite propositions as is widely assumed but is a comp for reports of direct discourse. As noted at the outset, Plann (1982) proposes that *que* in Spanish is ambiguous between a comp for propositions and a comp for reports. I showed in Section 2 that *to* is exactly like *que* in taking question and imperative complements. In Section 3, I argued that *to*, unlike *que*, is employed only as a comp for reports. The proposal is that there is a division of labor between *to* and *no* in Japanese: the former is for reports and the latter is for propositions. This provides indirect but strong support for Plann's analysis of *que*. According to her analysis, the Spanish comp system is as in (42).

(42) the Spanish complementizer system
  a. *que*: propositions
  b. null C: wh-questions
  c. *que*: reports of direct discourse

That is, there are three distinct kinds of comps but there is only one phonetically realized form, namely *que*. On the other hand, the Japanese comp system is more transparent, as shown in (43).

(43) the Japanse complementizer system
  a. *no*: propositions
  b. *ka*: (wh-)questions
  c. *to*: reports of direct discourse

As the three kinds of comps that Plann proposes have distinct phonetic realizations in Japanese, the language provides explicit evidence for the proposal.

The second half of Section 3 exploited this unique feature of Japanese, and presented further data that shed light on the nature of comp for reports. I showed that *to* is employed in a variety of contexts where a CP reports the content of an utterance, a thought, a claim, a question, a request, and the like. One case concerned adjunct CPs headed by *to* and another had to do with those CPs in appositive relation with nouns like 'claim', 'hope', 'warning', and 'question'. The final remark was on children's overgeneration of *no* in relative clauses. I argued that the analysis of the Japanese comp system proposed here explains why they overgenerate *no* and never *to* in the comp position.

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THREE TYPES OF THE "OVERGENERATED *NO*" IN THE ACQUISITION OF JAPANESE NOUN PHRASES*

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1. Introduction

It is very well known that Japanese-speaking children around ages one to four overgenerate *no* between the sentential modifier and the head NP, as shown in (1).

(1) a. howasi ookii *no howasi (= ohasi) (2;1)
chopstick big NO chopstick

'chopsticks, the big ones, chopsticks' (Nagano 1960)

b. maarui *no unti (2;0)
round NO poop

'a round poop' (Yokoyama 1990)

c. Yuta-ga asyon-deru *no yatyu wa kore, kore (Yuta 2;3)
Yuta-Nom playing-is NO thing Top this this

'The thing that Yuta (I) is playing with is this (train).'

In (1a) and (1b), children insert *no* between the adjective (e.g., *ookii* (big) and *marui* (round)) and the head nominal (e.g., *howasi* (chopsticks) and *unti* (poop)) at around two years of age. Later, at two to four years of age, as in (1c), Japanese-speaking children insert *no* between the sentential modifier *Yuta ga asyon-deru* (Yuta is playing) and the head nominal *yatyu* (thing).

In adult Japanese, there are mainly three types of *no*.

* This is a revised version of the paper we presented at JK 19 (2009) at the University of Hawaii. We would like to thank the organizers, participants and the anonymous reviewers of JK 19, and scholars involved in the activities of Center for Linguistics at Nanzan University, especially Michiya Kawai, Tomoko Hashimoto, Mamoru Saito, Koji Sugisaki, and Daiko Takahashi, for valuable discussions on the topic discussed in this paper. The research presented here was supported in part by Nanzan University Pache Research Grant I-A (2011), JSPS Grant-in-Aid at Nanzan University (#23520529), and National Institute for Japanese Language and Linguistics (Collaborative Research Project on Linguistic Variations within the Confines of the Language Faculty: A Study in Japanese First Language Acquisition and Parametric Syntax).

Nanzan Linguistics 8, 69–87
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(2) a. [Yamada] no hon (Genitive Case marker)
Gen book

'Yamada's book'

b. akai no (Pronoun)
red (+present) one

'the red one'

c. Emi-ga hazimete robusutaa-o tabe-ta no wa Bosuton de
-Nom for the first time lobster-Acc ate Comp Top Boston in
da (Complementizer)
Copula

'It is in Boston that Emi ate a lobster for the first time.'

(2a) is the genitive Case marker, which roughly corresponds to *'s* or *of* in English. (2b) is a pronoun, which roughly corresponds to *one* in English. A complementizer in (2c) is the head of the presuppositional phrase in the cleft sentence, which corresponds to *that* in English.

In the history of Japanese acquisition, three contradictory analyses, the Pronoun Hypothesis, the Genitive Case Hypothesis, and the Complementizer Hypothesis, have been proposed regarding the syntactic status of the overgenerated *no*. Accordingly, the age children overgenerate *no* is contradictory: Some say it happens when children are one year old (e.g., Nagano 1960), but some say it lasts until four years old (e.g., Murasugi 1991).

In this paper, mainly based on our longitudinal study with a Japanese-speaking child, Yuta, and the corpus analysis of CHILDES (Sumihare and Jun), we argue that the mysteriously long overgeneration phenomenon of *no*, in fact, stems from three distinct sources, as proposed by Murasugi, Nakatani and Fuji (2009). We argue that the mysterious "overgeneration of *no*" is not a single phenomenon in Japanese acquisition, and show that three contradictory hypotheses (i.e., Pronoun, Genitive Case, and Complementizer) proposed in the past acquisition researches are basically all correct. First, a pronoun *no* is used due to the limit in production at the two-word stage. Second, the genitive Case marker *no* is inserted because of the miscategorization of adjectives as nominals. Third, a complementizer *no* is overgenerated due to the parameterization in the structure of relative clauses. The overgeneration of *no*, which looks like a single phenomenon, is reanalyzed as a trihedral phenomenon, and each face represents one of the crucial developmental stages in language acquisition.

2. The Complementizer Hypothesis: Relative Clause Parameter (Murasugi 1991)

Murasugi (1991), based on her longitudinal and experimental study with Japanese-speaking children at two to four years of age, proposes that the overgenerated *no* is a

complementizer. According to her analysis, a structure of a sentential modifier is parameterized; either CP or TP depending on the languages. Murasugi argues that sentential modifiers in adult Japanese (and Korean) are TPs, unlike CP relatives in English. However, Japanese-speaking children initially hypothesize that Japanese relative clauses are CPs, and overgenerate a complementizer between the sentential modifier and the head nominal.

Children's first complex NPs are found after two years of age, and they are usually a fixed expression without overgeneration (Murasugi and Hashimoto 2004). Our subject Yuta's first complex NPs were also fixed expressions. The relevant examples are shown in (3).

(3) a. Tottan-ga katte kure-ta purezento da yo (2;0)
father-Nom buy gave present Copula Int

'(This is) the present that my father bought (for me).

b. Kore, Yuki-tyan-ga kure-ta purezento na no (2;0)
this, -Nom gave present Copula Int

'This is the present that Yuki-tyan gave (to me).'

In (3), the verbs were limited to *katte kureru* (buy and give) and *kureru* (give) only. The head NP was also limited to the NP, *purezento* (present).

Later, some children overgenerate *no* on sentential modifiers. Yuta started to overgenerate *no* productively not only in complex NPs as in (4a) and (4b), but also after adjectives as in (4c), after 2;2.

(4) a. Kare-teru *no hana da yo (2;2)
wither-is NO flower Copula Int

'(I have) a withered flower.'

b. Yuta-ga asyon-deru *no yatyu wa kore, kore (2;3)
-Nom playing-is NO thing Top this this

'The thing that Yuta (I) is playing with is this (train).'

c. Kore nagai *no yatyu da ne (2;3)
this long NO one Copula Int

'This is a long one.'

In (4a), Yuta inserted *no* between the modifier *kare-teru* (is withered) and the head nominal *hana* (flower). Similarly, in (4b), Yuta (playing with a train in front of the box with the picture of the train, and comparing the toy and the picture of it), overgenerated *no* between the sentential modifier *Yuta-ga asyon-deru* and the head NP, *yatyu*. In (4c), he overgenerated *no* after the adjective *nagai* (long).

Murasugi (1991) reports that children at around two to four years of age overgenerate a complementizer *no* between the head NP and all types of sentential modifiers, as exemplified in (5).

(5) a. tigau *no outi (3;0)
differ NO house

'the different house'

b. Emi-tyan-ga kai-ta *no sinderera (2;11-4;2)
-Nom drew NO Cinderella'

'the Cinderella that Emi drew'

c. ookii *no tako (2;11-4;2)
big NO octopus

'a big octopus' (Murasugi 1991)

In (5a), *no* is inserted between the inflected verb, *tigau* (differ) and the head nominal, *outi* (house), and in (5b), it is inserted between the sentential modifier and the head nominal. In (5c), *no* is overgenerated after the adjective, *ookii* (big), as well.

Crucially, however, she reports that those children, who overgenerated *no*, sometimes undergenerated the genitive Case marker on PPs, as in (6), although they can correctly insert it between two NPs, as in (7).

(6) Tokyo made [φ] basu (3;2)
to *(Gen) bus

'the bus to Tokyo' (Murasugi 1991)

(7) a. Emi-no hon (Emi 2;9)
-Gen book

'Emi's book'

b. megane-no ozityan (Miki 2;4)
glasses-Gen man

'the man with eye glasses' (Murasugi 1991)

Thus, the overgeneration takes place when the genitive Case marking is not fully acquired.

One piece of direct empirical evidence for the Complementizer Hypothesis was found in Toyama dialect in Japanese as in (8a) and Korean as in (8b).

(8) a. Anpanman tui-toru *ga koppu (Ken 2;11)
(a character) attaching-is GA cup

'the cup which is pictured with "Anpanman"' (Murasugi 1991)

b. Acessi otopai tha-nun *kes soli ya (2-3 years old)
uncle motorcycle riding-is KES sound is

'*Lit*. (This) is the sound that a man is riding a motorcycle.' (Kim 1987)

The overgenerated item is a complementizer, for instance, *ga* in Toyama dialect, and *kes* in Korean, but not the genitive Case marker (*no* in Toyama dialect nor *uy* in Korean).

Thus, not only Japanese-speaking children but also Korean-speaking children initially hypothesize that their relative clauses are CPs, and overgenerate a complementizer between the sentential modifier and the head nominal.

Murasugi and Hashimoto (2004), however, argue that the Complementizer Hypothesis alone cannot fully explain the overgeneration phenomenon of *no*. In fact, the overgeneration of *no* is observed with very young children, even at around the age of one, when they start producing two-word utterances. Crucially, then, not only T or C related items, but also, even the genitive Case marker is not produced. Murasugi and Hashimoto point out that it is very unlikely that the same type of overgeneration lasts for four years, and conclude that there are two types of overgeneration of *no*: A pronoun and a complementizer.

3. The Pronoun Hypothesis in Addition to the Complementizer Analysis (Nagano 1960, Murasugi and Hashimoto 2004, 2006)

The Pronoun Hypothesis was in fact originally proposed by Nagano (1960) fifty years ago. His argument is very simple and clear: The overgenerated *no* cannot be the genitive Case marker, because the overgeneration takes place when there is no genitive Case marker found in the child production, but only pronoun *no* is produced. Examples in (9) are cited from Nagano (1960).

(9) a. howasi ookii *no howasi (= ohasi) (2;1)
chopstick big one chopstick

'chopsticks, the big ones, chopsticks'

b. Amuna (= Harumi) tittyai *no Amuna (2;1)
small one

'Harumi, the small one, Harumi' (Nagano 1960)

In (9a) and (9b), *no* looks like to be erroneously inserted between the adjective (e.g., *ookii* (big) and *tiisai* (small)) and the NP (e.g., *howasi*, which is *ohasi* (chopsticks) and *Amuna*, which is *Harumi*) at 2;1. The overgeneration in question appears just after the pronoun *no*

starts to be correctly produced at 2;1, as in (10), but before the genitive Case marking is fully acquired, as in (11).

(10) a. ookii no (2;1)
big one

'the big one (= bus)'

b. tittyai no (2;1)
small one

'the small one (= leaf)' (Nagano 1960)

(11) ke… mama [φ] ke, mama [φ] ke, mama (2;0)
hair Mommy *(Gen) hair Mommy *(Gen) hair Mommy

'hair…Mommy's hair, Mommy's hair, Mommy' (Nagano 1960)

In (11), the child omitted the genitive Case marker *no*, although it should be inserted between *mama* (Mommy) and *ke* (hair) in the adult grammar. It is only one month later, at 2;2, that the genitive Case marker appears in the natural production, as shown in (12).

(12) Papa-no buton (= zubon) (2;2)
Daddy-Gen pants

'Daddy's pants' (Nagano 1960)

The parallel developmental stage was observed by Murasugi and Hashimoto's (2004) longitudinal study with Akkun, and our longitudinal study with Yuta. Both subjects started overgenerating *no* before the genitive Case marker was inserted between NPs.

(13) a. Akai no at-ta (2;3)
red one there-was

'(I) found the red one'

b. Akkun no. Akkun [φ] ohuton (2;3-2;5)
one. bed

'(This is) Akkun's. Akkun('s) bed.' (Murasugi and Hashimoto 2004)

Furthermore, both Akkun and Yuta put a brief pause between the NP headed by the pronoun *no* and the referential NP. (14) shows Akkun's data taken from Murasugi and Hashimoto (2004).

(14) a. Akkun tiityai no konkonkon (2;4)
small-is one hammer

'Akkun's (/My) small hammer'

b. [Akkun //pause// [tiityai no] //pause// konkonkon]

They argue that the utterance consists of two parts (i.e., *tiityai no* (small one) and *konkonkon* (hammer)), and this is very different from the overgeneration of a complementizer.

Similarly, the subject we examined in the present study, Yuta, started overgenerating *no* at around 1;10, when he just started combining two words in the utterances. An example is given in (15).

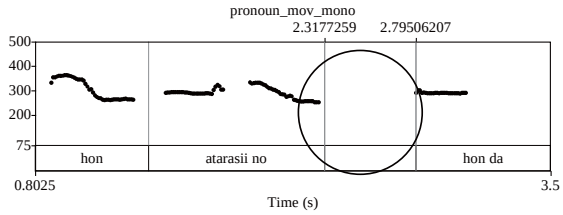
(15) a. Hon, atarasii no, hon da (1;10)
book new one book Copula

'a book, a new one, (this is) a book'

b. [hon //pause// [atarasii no] //pause// hon da]

The analysis of Praat[1] clearly shows that there is a pause between *no* and the reference NP, thereby confirming Murasugi and Hashimoto's (2004) observation.

Figure 1: A Pause Found between *No* and the Referential NP

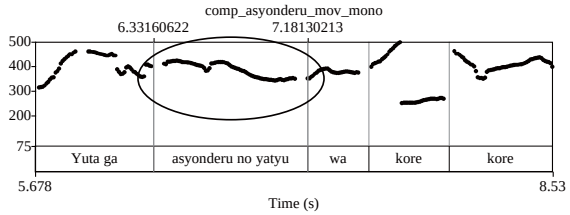


In Figure 1, the pitch contour shows that there is a pause of 0.48 seconds between *no* and the referential NP, *hon* (a book). Thus, this result indicates that the utterance consists of two parts.

In contrast, as for the overgeneration of a complementizer given in (4b) found after two years of age, there is no pause between *no* and the head NP.

[1] Praat is a program for doing phonetic analyses and sound manipulations (Boersma and Weenink 2009).

Figure 2: No Pause Found between *No* and the Head NP with the Overgeneration of a Complementizer



The Praat analysis in Figure 2 indicates that there is no separation of any kind, and *asyonderu (ashon-deru) no yatyu* is produced as a unit.

Hence, Murasugi and Hashimoto (2004, 2006) argue that Nagano's (1960) Pronoun Hypothesis is supported, and the overgenerated *no* at the age of one and early age of two is a pronoun. They analyze that this *no* is, in fact, not an error, but reflects the production strategy of very young children to combine two elements. When children cannot create the modification structure, they produce an NP headed by the pronoun *no* (one) first, to provide a frame for an NP, and the modifier, or the head nominal is realized as the second independent NP. Children use this strategy since the genitive Case marker is not yet acquired at the beginning of the two-word stage. Murasugi (2009) further proposes that this stage reflects the earliest morphological realization of the operation of merger, and that the onset of the merger starts with the phrases headed by the smaller category (*no* (one) as N′) with less semantic content. This hypothesis holds as there is a pause between the pronoun *no* and the second NP.

The argument given so far shows that there are at least two sources for the apparently same "overgeneration" phenomenon. The one observed in ages one and two is a pronoun, and the other observed in ages two through four is a complementizer.

However, another empirical problem arises. *No* is overgenerated when children have already acquired the genitive Case marker, have no problem in combining two elements, and produce no relative clauses. The mysterious *no* associated with those characteristics is exemplified in (16).

(16) a. atarasii *no kami (Yuta 1;11)
new NO paper

'a new paper'

b. siroi *no gohan (Yuta 2;0)
white NO rice

'white rice'

c. Tiisai *no buubuu tootta yo (Sumihare 1;11)
small NO car passed Int

'A small car passed.'

Crucially, the overgeneration is found after the two-word stage, at around the age of two, with limited adjectives such as color, size, shape, and state.

At this mysterious stage, the genitive Case marker between two NPs is productively and correctly used. For example, as in (17), Yuta started to produce the genitive Case marker between NPs at 1;11, and Sumihare started at 2;0.

(17) a. Ko otoosan-no hanasi da yo (Yuta 1;11)
this father-Gen story Copula Int

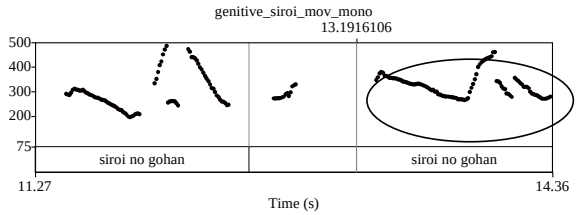
'This is a story of father.'

b. Ringo-no ozityan-ga… (Sumihare 2;0)
apple-Gen man-Nom

'The man (who sells) apples is…'

Praat analysis reveals that unlike the case of a pronoun, there is no pause found between *no* and the NP following it. In Figure 3, no separation has been made between *siroi no* (white one) and *gohan* (rice), and they are produced as a unit.

Figure 3: No Pause Found between *No* and the Head NP with the Mysterious Overgeneration of *No*



The facts shown above cannot be explained by the Complementizer Hypothesis either. This mysterious *no* is produced by children who have not acquired complex NPs yet, and the cleft sentences are hardly observed. Moreover, as noted above, the overgeneration is found only with the present-tensed adjectives of color, size, and state.

In the next section, we argue that children, at around the age of two, have difficulties in acquiring "the category of adjectives," and some adjectives are treated as nominals, and some, as verbs. Those "nominal-like adjectives" never inflect with tense, and children, who already know the genitive Case marker insertion between the nominal projections, correctly insert the genitive Case marker between the "nominal-like adjectives" and the head nominal. This would be the mysterious stage of overgeneration of *no* found before a relative clause is

acquired. (See Murasugi (2009) for details.)

4. The Genitive Case Marker Hypothesis

The Genitive Case Marker Hypothesis has been proposed by many researchers in the past fifty years (Iwabuchi and Muraishi 1968, Harada 1980, 1984, Clancy 1985, Yokoyama 1990, Ito 1998, among others). Among those, Yokoyama's (1990) generalization is quite important. He argues that the erroneous *no* is a genitive Case marker, and it is overgenerated only with the adjectives referring to color, size, and shape (e.g., *akai* (red), *ookii* (big), *maarui* (round)), but never with other adjectives (e.g., *abunai* (dangerous), *yasasii* (kind)), as shown in (18).

(18) a. ookii *no sakana (1;8)
big NO fish

'a big fish'

b. maarui *no unti (2;0)
round NO poop

'a round poop'

Yokoyama's apparently curious generalization is further confirmed by Murasugi and Hashimoto (2004). They find that the adjectives of color, size, and shape do not inflect with tense, but appear only in present-tense forms.

This generalization is further supported by our longitudinal study with Yuta and also by our corpus analysis of Sumihare. The overgeneration occurs only with the adjectives which refer to color, size, shape, and state, but it never occurs with such adjectives as *itai* (is painful), *omoi* (is heavy), or *kowai* (is scary), which only appear in the predicative form with tense (i.e., present and past) but never in the prenominal form. As these adjectives never appear in the prenominal form, there is naturally no chance that the overgeneration should take place. Rather, these adjectives are not associated with the overgenerated *no*, and behave like verbs, as in (19).

(19) a. Oisii, kore. Oisii, kore (Yuta 1;10)
delicious this delicious this

'This is delicious.'

b. Koko babatii yo ne (Sumihare 2;0)
here dirty Int Int

'(It is) dirty here.'

c. Okaatyan pompo itai no (Sumihare 2;0)
Mommy onomatopoeia ache Q

'Mommy, is (your) stomach aching?'

In (19), the adjectives, *oisii* (delicious), *babatii* (dirty), *itai* (painful), are used as predicates, conjugating with tense as shown in Table 1 and Table 2.

Table 1 shows that the past-tense forms of nominal-like adjectives are produced relatively late, but those of verb-like adjectives are produced relatively early in the case of Yuta.

Table 1: The Age of the First Appearance of the Present-/Past-tense Forms of Adjectives by Yuta

Nominal-like Adjectives (of Touch and Sight)			Verb-like Adjectives		
Adjectives	Present-tense	Past-tense	Adjectives	Present-tense	Past-tense
ookii 'big'	ooki-**i** (1;8)	ookik-**atta** (2;0)	*itai* 'painful'	*ita*-**i** (1;11)	itak-**atta** (1;11)
tiisai 'small'	tiisa-**i** (1;11)	tiisaik-**atta** (2;1)	*oisii*'delicious'	oisi-**i** (1;10)	omok-**atta** (1;10)
kuroi 'black'	kuro-**i** (2;0)	kurok-**atta** (2;4)	kowai 'scary'	kowa-**i** (1;10)	kowak-**atta** (2;2)

The contrast between nominal-like adjectives and verb-like adjectives is clearer in the case of Sumihare, as shown in Table 2.

Table 2: The Age of the First Appearance of the Present-/Past-tense Forms of Adjectives by Sumihare (CHILDES)

Nominal-like Adjectives (of Touch and Sight)			Verb-like Adjectives		
Adjectives	Present-tense	Past-tense	Adjectives	Present-tense	Past-tense
ookii 'big'	ooki-**i** (1;11)	ookik-**atta** (2;9)	*itai* 'painful'	*ita*-**i** (1;8)	itak-**atta** (2;0)
akai 'red'	*aka*-**i** (1;11)	akak-**atta** (4;0)	*omoi* 'heavy'	omo-**i** (1;8)	omok-**atta** (2;2)
siroi 'white'	siro-**i** (2;2)	sirok-**atta** (3;6)	*kusai* 'smelly'	kusa-**i** (2;2)	kusak-**atta** (2;3)

Sumihare produced only the present forms for nominal-like adjectives, but never the inflected forms, when he inserted *no* between the adjectives of touch and sight (e.g., color, size, shape, and state) and the head nominals. On the other hand, the verb-like adjectives (e.g., *itai* (painful), *omoi* (heavy), *kusai* (smelly)), which are not erroneously genitive Case marked, inflected with tense much earlier.

There are several pieces of evidence to show that the adjectives referring to the sense of touch and sight are used as nominals. For example, as shown in (20), these adjectives are used as referential noun phrases.

(20) a. *Kiiroi to *akai to (Sumihare 2;9)
yellow and red and

‘(They’re) a yellow (crayon) and a red (crayon).’
(Adult form: kiiroi/akai-no (yellow/red one), kiiro/aka (yellow/red))

b. *Tiisai koo-te ya (Sumihare 2;7)
small buy-Request Int

‘Please buy a small (dog).’
(Adult form: tiisai-no (small one))

In (20a), Sumihare erroneously used the adjectives *kiiroi* (yellow) and *akai* (red) to refer to the concrete objects, a yellow crayon and a red crayon. Similarly in (20b), he used the adjective *tiisai* (small) to refer to a small dog.

These nominal-like adjectives appear in the argument position being Case marked as well.

(21) *Tittyai-ga atte *maarui-ga atte... konna *ookii-ga atte... (Yuta 2;2)
small-Nom be round-Nom be such big-Nom be

‘There is (a) small (circle), (a) round (one), and such (a) big (one)…’
(Adult form: Tittyai/maarui/ookii no (small/round/big one))

Yuta uttered as in (21), while he was repeatedly drawing circles. The adjectives, *tiisai* (small), *marui* (round) and *ookii* (big), appear in the subject position associated with the nominative Case marker *ga*.

The most valid generalization to be drawn from the description so far is that the adjectives referring to the sense of touch and sight are miscategorized as nominals (Murasugi 2009). Hence, those children who already know the system of genitive Case marking between two NPs, “correctly” assign the genitive *no* to the “nominals” which are, in fact, adjectives in adult grammar.

Then, why do children miscategorize certain adjectives? We conjecture that adjectives referring to color, size and shape share the properties of concrete nominals in that they are consistent, absolute, and evidential, compared with other types of adjectives such as emotion and evaluation (cf. Berman 1988, Mintz and Gleitman 2002). And as argued by de Villiers and de Villiers (1978), a certain set of adjectives of size and shape go together as colors in child language.

Furthermore, acquiring adjectives is difficult because it is “a fluid category” (Gassar and Smith 1998, Berman 1988, Polinsky 2005, among others). As shown in (22), the position where the adjective *big* appears in adult English can be occupied with the verb *dropped* or the noun *a dog*. Thus, the syntactic cue is ambiguous for children.

(22) a. It's [big]

b. It [dropped]

c. It's [a dog]

The syntactic cue is ambiguous in Japanese, too. Both adjectives and nominals can be followed by the polite sentence-ending marker *desu*, as in (23), while both adjectives and verbs inflect with tense, as in (24).

(23) a. akai desu (Adjective)
is-red (Adj) Polite

'(It) is red.'

b. aka desu (Nominal)
a red color (Nominal) Polite

'(It) is a red color.'

(24) a. ooki-i ookik-atta (Adjectives)
big-Pres big-Past

b. aka-i akak-atta (Adjectives)
red-Pres red-Past

c. tabe-ru tabe-ta (Verbs)
eat-Pres eat-Past

d. nom-(r)u non-da (Verbs)
drink-Pres drink-Past

In this sense, the Japanese adjective is also "a fluid category," and this could make adjectives difficult to be acquired.

Then, when and how do children "intake" the full system of adjectives in the target language? Kanda (2012), based on the corpus analysis of Taro in CHILDES, reports that there is an interesting stage where a Japanese-speaking child "optionally" inserts genitive *no* inside the NPs.

(25) a. kuro kyuukyuusya (2;10)
black ambulance

'the ambulance that is black'

b. Kuroi ozubon? (3;1)
black pants

'The black pants?'

c. Kuroi *no ozubon? (3;1)
black NO pants

'The black pants?'

A nominal form *kuro*, an adjective form *kuroi* without being associated with genitive *no*, and an adjective form *kuroi* "erroneously" associated with genitive *no*, are all found at around the same age, as shown in (25a), (25b), and (25c), respectively. The noun phrase in (25a) is only possible as a compound noun, and the noun phrase in (25c) is ill-formed. The examples in (25b) and (25c) are in fact found in a dialogue between Taro and his mother.

(26) MOTHER: Kuroi ozubon doko?
black pants where

'Where are the black pants?'

TARO: Kuroi *no ozubon? (= 25c)
black NO pants

'The black pants?'

MOTHER: Un.
yes

'Yes.'

TARO: Kuroi ozubon? (= 25b)
black pants

'The black pants?'

The example given above is intriguing in three ways. First, the child does not merely imitate the caretaker's utterance. Second, the child corrects himself without any direct negative evidence. Third, the child is in the transition period, not only with respect to the categorization of the color adjective, but also with respect to the tense conjugation. Kanda (2012) argues that Taro, at around the time when the overgenerated *no* is disappearing, produces the past-tensed form of the adjective in question in a "quasi-adult" way.

(27) kuro [pause] *kuroi-katta (3;2)
black black-Past

'(It was) black.'

Taro produced the utterance given in (27) when he found a black spot on his brother's leg. Here, the past-tense marker '*-katta*' is attached to '*kuroi*', not exactly in the adult way. In fact, in adult Japanese, the form should be *kurok-atta*, or *kuro-datta*, rather than *kuroi-katta*. Thus, just at the time when the color adjective '*kuroi* (black)' was "fluid" with respect to the form and the marking of genitive Case marker, so was the tense conjugation.

Interestingly, Kanda (2012) points out that Taro's adjectives such as '*yoi* (good)', which expresses positive degree of quality of thing or person for itself, conjugate just like the verb '*wakaru* (understand)'. Taro starts attaching the past-tense affix '*-atta*' on the stem of some types of adjectives at around 2;11 as in (28a), just like the verb given in (28b).

(28) a. yok-atta (2;11)
good-Past

'(It) was good.'

b. wak-atta (2;11)
understood

'(I) understood (that).'

The fact that the conjugation system of verb-like adjectives is acquired earlier than that of noun-like adjectives is, in fact, parallel with the data of Yuta and Sumihare. The paradigm observed in the transitional period from "child adjectives" from "adult adjectives" such as those shown above would provide clues to the analysis of the category of adjectives.

Note here that even if we assume that children's miscategorization of certain adjectives causes the genitive Case marker insertion, the Complementizer Hypothesis should be still maintained. For example, remember the overgeneration phenomena in Toyama dialect in Japanese and Korean. As in (8a) and (8b), repeated below, the overgenerated item is a complementizer, but not the genitive Case marker.

(8) a. Anpanman tui-toru *ga koppu (Ken 2;11)
(a character) attaching-is GA cup

'the cup which is pictured with "Anpanman"' (Murasugi 1991)

b. Acessi otopai tha-nun *kes soli ya (2-3 years old)
uncle motorcycle riding-is KES sound is

'*Lit*. (This) is the sound that a man is riding a motorcycle.' (Kim 1987)

Thus, the Complementizer Hypothesis we discussed in Section 2, should be maintained, and there are three distinct stages of the "overgeneration" of *no*.

The hypothesis that there are three stages in the "overgeneration" of *no* is further supported by our corpus analysis of Jun. First, Jun, at 2;2, produced a pronoun but not the

genitive Case marker. He produced (29a) and (29b), where there was a brief pause between *no* and the head nominals, *basu* (bus) and *okaasan* (mother). This is exactly the Pronoun stage as is discussed in Section 3.

(29) a. Ookii no [pause] basyu (= basu) wa? (2;4)
big N′ (one) bus Top

‘(Where) is the big bus?’

b. ookii no [pause] okaasan (2;5)
big N′ (one) mother

‘the big one, mother’

Then, at around 2;5, when the genitive Case markers were productively used as in (30), he inserted *no* between adjectives referring to color, size and shape and the head nominals, without making any pauses, as in (31).

(30) Kokko-no outi ya (2;5)
chicken-Gen house Int

‘(This is) a chicken’s house.’

(31) a. Hore, ookii *no torakku atta zo hore (2;6)
hey big NO truck was Int hey

‘Hey, there is a big truck.’

b. tiisai *no akatyan (2;6)
small NO baby

‘a small baby’

c. kuroi *no zidoosya (2;6)
black NO car

‘a black car’

Just like Yuta and Sumihare, the overgeneration occurs only with the adjectives of touch and sight, and those adjectives are sometimes used as nominals as well.

(32) a. *Ookii-ga otiru (2;7)
big-Nom fall

‘The big (toy car) is falling.’
(Adult form: ookii-kuruma-ga / ookii-no-ga)

b. FAT: Kore-wa nan desu ka
this-Top what Cop Q

'What is this?'(Showing CHI a new toy)

CHI: Atarasii *no *akai (2;8)
new NO red

'(It's) new red.'
(Adult form: atarasii akai-no)

In (32a), the adjective *ookii* (big) appears in the subject position associated with the nominative Case marker *ga*. In (32b), he used the adjective *akai* (red) to refer to the concrete object, a red toy. Hence, those adjectives are treated as nominals, and the overgenerated *no* in (31) is the genitive Case marker, being "correctly" inserted between two NPs.

Finally, as in (33), he started overgenerating *no* with relative clauses at around 2;8.

(33) a. koware-ten *no yatu zidoosya (2;8)
is-broken NO thing car

'(This is) a broken car.'

b. Omosiroi *no yakiimo ya kore (2;10)
funny NO baked sweet potato Int this

'This is a funny baked sweet potato.'

In (33a), *no* is overgenerated between the modifier *koware-ten* (= *teru*) (is broken) and the head nominal *yatu* (thing). (33b) shows that the overgeneration occurs with any kind of adjectives at this stage. Thus, this is the Complementizer stage, where Jun hypothesizes that Japanese relative clauses are CPs (Murasugi 1991).

Overgeneration of *no* at a later stage of language acquisition can be due to two different reasons, even when they apparently look very similar. Children's miscategorization of certain adjectives causes the genitive Case marker insertion as shown in (32). In addition, the Complementizer Hypothesis should be still maintained to explain the overgeneration of *no* given in (33). The categorization of adjectives and the parameter-setting of the structure of complex NPs are the separate issues.

If this analysis is on the right track, then we predict that the children's erroneous *no*'s in such examples as (32) and (33) do not necessarily "disappear" simultaneously. Murasugi (1991), in fact, observes that Emi, a Japanese-speaking child, kept inserting *no* between such color adjectives as *kuroi* (black), or the exact color term we discussed in this paper, and the head nominal. That is, the child kept producing "*kuroi *no kuku* (the black shoes)," even after the child stopped overgenerating *no* on the relative clauses. Murasugi (1991) stipulates in her dissertation that the name of the black shoes, which were worn only at a very special

occasion, remained in the child lexicon as the name associated with overgenerated *no*. But the stipulation might have been wrong. The problem left unsolved by Murasugi (1991) and the mysterious overgeneration phenomenon may be naturally explained by the proposal that the categorization of adjectives and the parameter-setting of the structure of complex NPs are the separate issues.

5. Conclusion

In this paper, mainly based on the longitudinal studies with Yuta, and the corpus analysis of Sumihare and Jun (CHILDES), we argued that there are three stages of Japanese-speaking children's overgeneration of *no*, in line with Murasugi, Nakatani and Fuji (2009). The overgeneration of *no*, which apparently looks like a single phenomenon includes three parts: *No* as (i) a pronoun (N′) at the late age of one, (ii) the genitive Case marker at around the age of two, and (iii) a complementizer (C) at around the age of two through four. The only case that we can truly name as overgeneration is the third stage, or the overgeneration of C. In the other two, *no* is actually used "correctly".

The sixty-year-debate in the field of Japanese acquisition has never ended because of the belief that the overgeneration takes place for a single reason. However, in this paper, we argued that the overgeneration of *no* is a trihedral phenomenon, and the hypotheses proposed were basically all correct. The overgeneration of *no* is due to three independent reasons, i.e., the immature merge operation, the miscategorization of adjectives, and the setting of the relative clause parameter. The analysis of children's errors informs us of the important phases in the stages of grammar acquisition, and provides a key to understanding the nature of language.

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WHAT'S ACQUIRED LATER IN AN AGGLUTINATIVE LANGUAGE*

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1. Introduction

The intermediate stages of child grammar are a window into linguistic variation. Testing children's knowledge of grammar in the course of language acquisition can bring new insights to the study on the cross-linguistic syntactic differences.

Japanese is a head-final agglutinative language, whose basic word order is SOV. This language allows scrambling, and has discourse *pro* for subjects, objects, and the arguments in general. The central aim of this paper is to describe and analyze the nature of the very early verbs that Japanese-speaking children produce, and attempt to clarify the intermediate steps children go through to acquire the full system of the verbs. We focus on the Root Infinitive analogues and the erroneous verbal forms that Japanese-speaking children produce, and discuss the implications for the syntactic theory. These two types of children's errors which are typically observed at intermediate stages of language acquisition shed light on hidden properties and mechanisms that underlie the very early non-finite verbs (Root Infinitives) and the acquisition of functional categories.

2. Root Infinitives in Fusional (and Analytic) Languages

Root Infinitives (RIs), exemplified in (1), are the children's first step to the system of the verb.

* This paper is an extended version of an article we presented at GLOW in Asia VI at Chinese University of Hong Kong in December, 2007. We would like to thank Thomas Lee, Tomomi Nakatani-Murai, Tetsuya Sano, Naoko Sawada, Koji Sugisaki, Kensuke Takita, Ken Wexler, and the organizers, participants and the anonymous reviewers of the GLOW VI in Asia, Hong Kong, for discussions and comments for this paper. Sincere thanks go to Mamoru Saito and the Center for Linguistics at Nanzan University for providing all the support needed for our research activity. Thanks also go to the members of the series of the International Symposium (2006-present) of the Cambridge-Connecticut-Hyderabad-Nanzan-Siena-Tsinghua Consortium in Linguistics, which are the roots of the present work. We especially thank Junri Shimada at the Center for Linguistics, for his extensive advice and help to put this paper in *Nanzan Linguistics 6*. The research reported here was supported in part by Nanzan University Pache Research Grant I-A 2010 and by JSPS Grant-in-Aid to Nanzan University (#20520397, Principal Investigator: Keiko Murasugi) for the study of the acquisition of functional categories.

Nanzan Linguistics 6, 47-78
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(1) a. Eve sit floor. (1;7) (English) (Brown 1973)
b. That truck fall down. (2;0) (English) (Sano and Hyams 1994)

As Rizzi (2000) states, RIs exhibit whatever unmarked non-finite form the language possesses. Many researchers regard RIs as very early non-finite verbs, and argue that they are due to a deficit in the children's syntactic knowledge, e.g., the syntactic structure is truncated, or the associated feature values of Tense are underspecified. Conversely, Phillips (1995, 1996) argues that RIs are not due to a deficit in the syntactic structure. According to Phillips (1995), at the RI stage, the verb and the inflectional features are both present, but they are not syntactically joined, and hence, when morphological items are inserted to realize the syntactic items, a default verbal form, which is an RI, is used to spell out the verb.

Our central argument is that the two apparently contradictory analyses given above are basically both correct: Root Infinitive analogues in Japanese are the very early non-finite verbs, and the verb and the inflectional features at the RI (analogue) stage are not syntactically joined.

2.1. Root Infinitives as the Very Early Non-finite Verbs

Root Infinitives (RIs) are non-finite (infinitival) verbal forms which children at around two years of age use in matrix clauses, where they are not possible in their adult grammar. There have been several approaches to explain why children acquiring fusional (and analytic) languages like English (Wexler 1994), Dutch (Haegeman 1995, Blom and Wijnen 2000), and French (Krämer 1993, Rasetti 2003), among others, often use non-finite forms as in (1) through (3).[1]

(2) Peter bal pakken. (2;1) (Dutch)
P ball get-INF

'Peter (wants to) get the ball.' (Blom and Wijnen 2000)

(3) Dormir petit bébé. (1;11) (French)
sleep-INF little baby

'A little baby sleeps.' (Guasti 2004)

An orthodox approach to the RI phenomenon is that the verbs children around two years of age produce are non-finite across languages. It is well known that there are some salient morpho-syntactic and semantic properties of RIs, as listed in (4).

[1] Abbreviations used in the glosses are as follows: Acc=Accusative Case, Asp=Aspect morpheme, Dat=Dative Case, INF=Infinitive, Mood=Mood marker, Neg=Negation, Nom=Nominative Case, Pres=Present, Past=Past, Req=Request.

(4) a. RIs are optional: RIs and fully-inflected verbs are used at the same period.
b. RIs are tenseless verbs in root contexts.
c. RIs occur predominantly with null subjects.
d. RIs generally do not occur in *wh*-questions.
e. RIs occur in modal contexts (the Modal Reference Effects (MRE)).
f. RIs are restricted to event-denoting predicates (the Eventivity Constraint).
g. RIs are very rare in *pro*-drop languages.
(Deen 2002, Hyams 2005, Salustri and Hyams 2003)

As (4a) states, during the RI stage, children optionally produce matrix non-finite verbs in place of finite verbs, while adults allow non-finite verbs only in embedded sentences, as shown in (5).

(5) a. Thorstn das haben [–finite]. (2;1) (German)
T that have-INF
'Thorstn has that.'

b. Mein Hubsaube hat [+finite] Tiere din. (2;1) (German)
my helicopter has animals in it
'My helicopter has animals in it.' (Wexler 1994)

As we see in (4b), the RI stage is considered to be a stage where some kind of disturbance of TP, which is the home of both tense and EPP, is found. As shown in (6), the subject of RIs tends to be null even in some of the non-*pro*-drop languages, as (4c) states.

(6) a. Hubsauber putzen. (2;1) (German)
helicopter clean-INF
Context: The child is cleaning his toy helicopter with a toothbrush.
(Poeppel & Wexler 1993, Wexler 1994)

b. Roeren. (2;4) (Dutch)
stir-INF
Context: The child's mother is cooking oatmeal. (Krämer 1993)

As (4d) states, it is also widely reported that RIs occur in declarative sentences, but not in *wh*-questions.

(7) Wie staat daar? (2;6) (Dutch)
who stands there?
'Who stands there?' (Haegeman 1995)

The declarative sentences in (6) have the infinitive verbs, while the sentence with a *wh*-phrase in (7) has the inflected verb, *staat* (stands).

The Modal Reference effects, described in (4e), means that RIs typically have a modal or irrealis meaning, expressing volition or a request (Hoekstra and Hyams 1998, among others). Observe the example in (8) from Dutch.

(8) Vrachtwagen emmer doen. (2;4) (Dutch)
truck bucket do-INF

Context: Matthijs (speaker) wants the investigator to put the truck in the bucket.
(Blom and Wijnen 2000)

Besides the Modal Reference Effects, it has been also widely observed that RIs are largely restricted to eventive predicates as shown in (4f), while finite verbs can either be eventive or stative. Early eventive verbs tend to receive a modal meaning with overwhelming frequency, and this is termed the Eventivity Constraint (Hoekstra and Hyams 1998).

Although some researchers claim that RIs are not found in the early grammar of such *pro*-drop languages as Italian, Spanish, and Catalan, and of languages where finiteness is expressed exclusively by number (e.g., Guasti 1994), as (4g) states, other researchers propose that there is an RI analogue stage in *pro*-drop languages. For instance, Varlokosta, Vainikka, and Rohrbacher (1996) and Hyams (2005) argue that the bare perfective is an RI analogue in Greek; Kim and Phillips (1998) suggest that the RI analogue is the V with the mood marker *-e* for Korean; Salustri and Hyams (2003, 2006) suggest that the RI analogue in Italian is the imperative, and similar proposals have been made for Kuwaiti (Aljenaie 2000), and Chinese (Chien 2008).

Our own limited exploration of this kind of phenomenon in Japanese suggests that there is an RI analogue stage in some of the agglutinative languages. Mainly based on an analysis of natural production data of Japanese-speaking children, Sumihare (0;6-6;0, Noji Corpus 1973-1977) and Akkun (1;7-4;0), we argue in Section 3 that there is an RI analogue stage in Japanese acquisition, and that the very early non-finite verb is not an infinitive form or Root Infinitive, but it is a full form in Japanese. The RI analogue for Sumihare and Akkun is the past-tensed verbal form ending with *-ta*, which is initially (1;6-1;7) used 100% of the time. This form shares most of the central morpho-syntactic and semantic properties of RIs summarized in (4).

2.2. Root Infinitives as the Very Early Verbs Missing Verb-Inflection Merge

Root Infinitives are tenseless verbs in matrix clause, and many researchers have considered that the features in Tense are underspecified then (Wexler 1994, among others). Phillips (1995, 1996), however, argues that RIs are not due to a deficit in the syntactic structure. Two-year-old children's Root Infinitive clause contains all of the components of adults' finite clause, and what is missing is the derivational step that would combine the verb with an inflection. The cause of the delay in merging of a verb and inflection is, according to Phillips (1995), difficulty with the process of accessing morphological knowledge, which is not an automatic process for the child. Based on a comparative study of the syntactic

development of two-year-old children acquiring V-raising languages such as Dutch, Flemish and French, and a non-V-raising language, English, Phillips (1995) suggests that children's syntactic structures contain all of the appropriate inflectional features, but they are not syntactically joined when lexical items are inserted to spell out syntactic features.

Phillips (1995) examines the relation between RIs and *wh*-questions in English to investigate whether or not the head movement is a key to RIs, since subject *wh*-questions in English do not involve verb movement while those in Dutch do. As we briefly discussed in (4d), Root Infinitives do not occur in *wh*-question.

(7) Wie staat daar? (2;6) (Dutch)
who stands there?

'Who stands there?' (Haegeman 1995)

According to Haegeman (1995), *wh*-questions are rarely produced by children at two to three years of age. When *wh*-questions are produced by young children, the main verbs used in the *wh*-questions are finite, as shown in Table 1. This is termed Crisma's effect.

Table 1: Finiteness in declaratives and questions: Dutch
(Haegeman 1995, modified in Phillips 1995, 1996)

Hein 2;4-3;1	*+finite*	*–finite*	*%-finite*
All clauses	3768	721	16%
wh-questions	88	2	2%

Total = 4579, $\chi 2 = 12.71$, $p < 0.001$

Phillips (1995) shows, however, that Crisma's effect is not observed in subject *wh*-questions in English. The percentages of inflected verbs in declaratives and in *wh*-questions are almost the same, as summarized in Table 2.

Table 2: Finiteness in declaratives and questions: English (Phillips 1995, 1996)

Adam 2;3-3;1	*inflected* V	*uninflected* V	*%inflected*
Declaratives	134	203	40%
wh-questions	69	92	43%

Total = 498, $\chi 2 = 0.43$, $p = 0.51$

The lack of Crisma's effect in English is due to the absence of head movement in English subject *wh*-questions: The requirement for the V-I(T)-C movement in V2 languages' *wh*-questions blocks RIs, whereas the V-I(T) movement in English subject *wh*-questions is not such a requirement and hence RIs are found in the English child's *wh*-questions.

In order to test this hypothesis against the null subject fact stated in (4c), Phillips (1995) investigates the interaction between finiteness and null subjects in Dutch and English. According to Krämer (1993), the vast majority of infinitive verbs occur in subjectless sentences (Krämer's effect). This effect, however, is not observed in English.

Table 3: Finiteness and null subjects: Dutch (Krämer 1993, modified in Phillips 1995, 1996)

Thomas 2;3-2;8	*+finite*	*–finite*
overt subject	431	21
null subject	165	246
% overt subject	73%	8%

Total = 863, $\chi 2 = 307.07$, $p < 0.0001$

Table 4: Finiteness and null subjects: English (Phillips 1995, 1996)

Adam 2;3-3;0	*+finite*	*–finite*
overt subject	79	195
null subject	34	47
% overt subject	70%	81%

Total = 355, $\chi 2 = 4.98$, $p = 0.026$

As Table 4 shows, Adam, an English-speaking child, used null subjects both with finite and infinitive verbs. What is more, he tended to use overt subjects more with infinitive verbs. One cross-linguistic difference is in Nominative Case licensing: RIs seldom occur with overt subjects in Dutch because Nominative Case licensing requires V-raising in Dutch, while RIs often occur with overt subjects in English because Nominative Case licensing has nothing to do with head movement in English.

Phillips (1995) concludes that RI clauses are "adult clauses minus one step of head movement" (p.34) and that "difficulty with the process of *accessing* morphological knowledge" (p.2) causes the delay in merging the verb with an inflection. For adults, accessing inflection paradigms is an automatic process after having been overlearned, and bears minimal or zero cost. For young children, however, the process is not yet automatic, and as a result, the cost of accessing a given form may outweigh the cost of failing to realize it.

It is well known that head movement itself is, in fact, acquired very early. As shown in (5), repeated below, German-speaking children even at two years of age know that the infinitive verbs stay at the end of a clause, whereas finite verbs move to C, which is the second position of a clause.

(5) a. Thorstn das haben [–finite]. (2;1) (German)
T hat have-INF

'Thorstn has that.'

b. Mein Hubsaube hat [+finite] Tiere din. (2;1) (German)
my helicopter has animals in it

'My helicopter has animals in it.' (Wexler 1994)

The fact that children use finite verbs in the second position as in (5b) indicates that V-I(T)-C movement has already been acquired by the stage in question. Similarly, in adult French,

finite verbs are raised from V to I, past the negation *pas*, while infinitives remain below the negation in VP (See Déprez and Pierce 1993). French-speaking children, even before two years of age, produce the adult-like word order of V-Neg as in (9b).

(9) a. Pas manger la purpée. (1;9) (French)
not eat-INF the doll

'The doll never eats.' (Déprez and Pierce 1993)

b. Elle roule pas. (1;11) (French)
it rolls not

'It never rolls.' (Pierce 1989, Déprez and Pierce 1993)

In addition, as summarized in (4), given the fact that the semantic/syntactic commonalities such as the MRE and the Eventivity Constraints are observed across languages at the stage in question, Phillips' (1995) proposal that RIs are not syntactic deficits but reflect children's difficulty in accessing morphological knowledge could be too strong. However, we argue in this paper that insight can still be maintained for Japanese, an agglutinating language. There is a delay in merging of the verb with inflection in the course of the acquisition. At the RI analogue stage, the inflectional features (including T (I)) are not successfully merged with the verb.

3. Root Infinitive analogues in Japanese

3.1. Previous Studies on Japanese Root Infinitives

A collective force of the acquisition data from null-subject languages has put a nail in the coffin of any hope that an RI analogue stage could be found in Japanese child grammar. Sano (1995, 1999) has conducted a detailed longitudinal study of three Japanese-speaking children, Toshi (2;3-2;8), Ken (2;8-2;10) and Masanori (2;4), to see if non-finite forms are produced in main clauses. The verb forms he has examined are exemplified in (10): *Renyookei -i* (preverbal) in (10a), *Mizenkei -a* (irrealis) in (10b), and the Conjunctive *-te* (participial) in (10c).

(10) a. Taro-ga kore ni hair-i-ta-i (koto).
T -Nom this to enter-(Preverbal)-want-Pres (fact)

'Taro wants to enter into this.'

b. Taro-ga kore ni hair-a-na-i (koto).
T -Nom this to enter-(Irrealis)-Neg-Pres (fact)

'Taro does not enter into this.'

c. Taro-ga kore ni hait-te, Jiro-ga are ni hair-u.
T -Nom this to enter-(Conjunctive) J -Nom that to enter-Pres

'(While) Taro enters into this, Jiro enters into that.'

As shown in Table 5, the Preverbal *-i*, the Irrealis *-a* and the Conjunctive *-te* were not produced as a main verb by these children, though these forms were produced in non-root contexts, i.e., under finite auxiliary predicates.

Table 5: Inflection of Main Verbs in Affirmative Declarative Root Clause (Sano 1999)

	Non-past *-(r)u*	Past-*ta*	Preverbal	Irrealis	Conjunctive
Toshi (2;3-2;8)	288	84	0	0	1 (0.2%)
Ken (2;8-2;10)	111	175	0	1 (0.3%)	0
Masanori (2;4)	138	50	0	0	0

Based on data analysis, Sano (1995, 1999) concludes that children at two years of age, who would be in the RI stage in some other languages, do not produce non-finite verbal forms, and hence, there is no RI stage in child Japanese.

Kato, Sato, Takeda, Miyoshi, Sakai and Koizumi (2003) support Sano's conclusion. Pointing out that bare verb stems without tense morphemes are not allowed in adult Japanese, they predict that an RI would have either the present- or the past-tensed form. They analyze the corpus of two Japanese-speaking children, Ryo (2;0-3;0) and Tai (2;0-2;9), and find that either of these forms is not overused. Their results are given in Table 6 and Table 7.

Table 6: Number of Past- or Present-tensed Verbal Form in Ryo's Corpus (Kato et al. 2003)

	Past-tensed verb forms	Present-tensed verb forms
Correct form	476	761
Erroneous form	7	4
Unclear	2	5
Total	485	770

Table 7: Number of Past- or Present-tensed Verbal Form in Tai's Corpus (Kato et al. 2003)

	Past-tensed verb forms	Present-tensed verb forms
Correct form	787	1667
Erroneous form	3	15
Unclear	0	14
Total	790	1696

As shown above, few erroneous verbal forms are found. Both of the two-year-old children produced present- and past-tensed forms in appropriate contexts. Hence, Kato et al. (2003) conclude that an RI stage is not found in child Japanese.

3.2. Our Proposal: There is an Root Infinitive Analogue in Japanese

Contrary to the previous studies of Japanese Root Infinitives cited above, the present paper proposes that there is an RI analogue stage in Japanese.[2] In this subsection, based on an analysis of naturalistic data of a Japanese-speaking child, Sumihare (Noji Corpus),[3] we argue that (i) there is a Very Early Non-Finite Verb Stage in Japanese, (ii) the form in question is the past-tensed form V-*ta*, (iii) the stage occurs much earlier than Root infinitives in the European languages, i.e., even at one year of age, and (iv) the form is initially (around 1;6-1;7) used 100% of the time in the full range of environments. Furthermore, we present a piece of supporting evidence for Phillips' (1995) insight that the merge of the verb and inflection is not available at the RI Stage. More specifically, we argue that merger of heads is acquired step by step as summarized in (11).

(11) a. Very Early Non-Finite Verb (RI analogue) Stage (1;6-1;11): no merge of the verb with inflection
b. Post-Very-Early-Non-finite Verb Stage (1;11-2;1): merge of the verb and inflection
c. Onset of Finite Verb Stage (2;1-): two- (or more-) step head merger

3.2.1. The Very Early Non-Finite Verb Stage (The stage with no merger of V-T)

Japanese is an agglutinative language where multiple instances of head movement occur inside the verbal projection (see Koizumi 1995).[4] In adult Japanese, bare verb stems cannot appear without tense or aspect morphemes, as shown in (12) and (13).

(12) a. *tabe- 'to eat'

b. *suwar- 'to sit'

(13) a. tabe-ru/-ta
eat-Pres/Past

'(I) eat/ate.'

[2] This analysis does not contradict the descriptive findings reported in Sano (1995) and Kato et al. (2003). Rather, our studies are consistent with their results: Erroneous non-finite verb forms are produced not by two-year-olds, but by much younger children.

[3] The Noji corpus is chosen for this study because it contains detailed contexts for the child's utterances, which helps us to detect the intended meanings. Noji's comments as the observer and as a linguist are also very helpful for making generalizations proposed in this paper.

[4] If we adopt the PF merge analysis (Bošković 2003, among others), our findings will be interpreted as a limitation on the number of elements that can be merged in the child's derivation, and RI analogues arise because of a failure to merge the verb with the inflection.

b. tabe-te-i-ru/-ta
eat-Asp-Pres/Past

'(I) am/was eating.' / '(I) have/had eaten.'

c. tabe-te
eat-Imperative (Preverbal form)

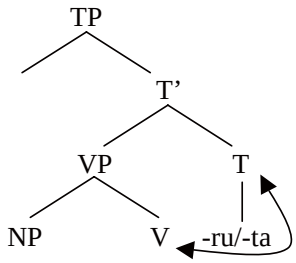
'(Please) eat.'

d. tabe-ta-i
eat-want-Pres

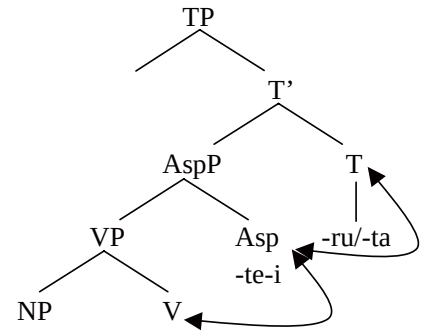
'(I) want to eat.'

The verb stem *tabe-* (to eat) is followed by the present/past tense morpheme in (13a), and by the aspectual morpheme *-te-i* in (13b).[5] For requests or imperatives, the morpheme *-te* is attached to the verb as in (13c), while for volition, *-ta-i* is attached to the verb as in (13d). The structures of V with tense and aspectual morphemes are represented in (14). The merger of V and T is required to derive a tensed sentence as in (14a). For an aspectual sentence, as in (14b), a two-step head merger (V-Asp-T) is required.

(14) a.



b.



Complex conjugations, however, are not produced at the very early stage of Japanese acquisition. Below we argue that there is a stage where a uniform verbal form is employed for non-adult meanings, and the inflectional features (including T (I)) are not successfully merged with the verb. We term this stage a Very Early Non-Finite Verb Stage,

During age one, Sumihare started to use the past tense form, namely, the V-*ta* form to refer to perfective events in the same way as adults do, as shown in (15).

[5] The abbreviated V-*teru*/-*teta* forms as in (i) are used as colloquial expressions in adult Japanese.

(i) tabe-te-ru/-ta
eat-Asp-Pres/-Past

'(I) am/was eating.' / '(I) have/had eaten.'

(15) a. Buu ki-ta. (1;5)
onomatopoeia come-Past

'A car has come.'

b. Tabe-ta. (1;6)
eat-Past

'(I) ate (up) (an apple).'

c. Oti-ta. (1;7)
fall-Past

'(It) has fallen.'

d. Keityan yuu-ta (=it-ta). (1;8)
K say-Past

'(She) said Keityan.'

Sumihare, however, from around 1;6 through 1;11, also used the V-*ta* form in a different way from adults. At this stage, the Modal Reference Effects were observed. The V-*ta* form were used to denote the meaning of volition (desire) or a request.[6]

(16) a. Atti. Atti. Atti i-ta. (1;6) (irrealis/volition) (adult form: ik-u, or ik-e)
there there there go-Past

'I want to go there / Go there.'

b. Tii si-ta. (1;7) (irrealis/volition) (adult form: si-ta-i)
onomatopoeia (pee) do-Past

'I want to pee.'

c. Baba pai-ta. (1;8) (request) (adult form: pai-si-te)
mud onomatopeia (throw away)-Past

'Please throw (this) away.'

The context for (16a) is the following: Sumihare's father (Noji, the observer) went out for a walk with Sumihare on the back. Noji tried to go back home, but Sumihare pointed to a different direction and produced "*atti* (there)" twice. Sumihare got frustrated and said, "*atti*

[6] We may possibly hypothesize that the V-*ta* form is not an Root Infinitive analogue but a reduced form of V-*tai* (volition). If that were the case, we would expect the V-*tai* form to be produced soon after the RI analogue stage, but it is, in fact, not. We have to wait for the adult usage of V-*tai* to be observed until around 2;6. Rather, in order to convey the meaning of volition, the *tyoodai* form was used productively from 1;8. Hence, we consider here that the V-*ta* form is not the reduced form of V-*tai*.

i-ta (there go-Past)" angrily again. Noji notes on this example: *I-ta* means *ik-u* (go-Pres) while Sumihare uttered *i-ta*, because Sumihare could not say *ik-u* (Noji 1973-1977 I: 195). Noji also writes important comments for (16b), which convinces us of the Modal Reference Effects at the early stage of Japanese acquisition: Sumihare used *tii-si-ta* in a volition context when he wanted to pee. As for (16c), Sumihare produced *pai-ta*, attaching *-ta* on the onomatopoeia *pai* (to throw away), in order to ask his mother to remove mud from a potato.

The examples in (17) are cases where *-ta* is used to express a result state, a progressive event and an irrealis meaning.

(17) a. Baba tui-ta. (1;6) (result state) (adult form: tui-te-i-ru)
thread stick-Past

'The thread is on (the finger).'

b. Sii si-ta. (1;7) (progressive) (adult form: sikko si-te-i-ru)
onomatopoeia (pee) do-Past

'(She) is peeing.'

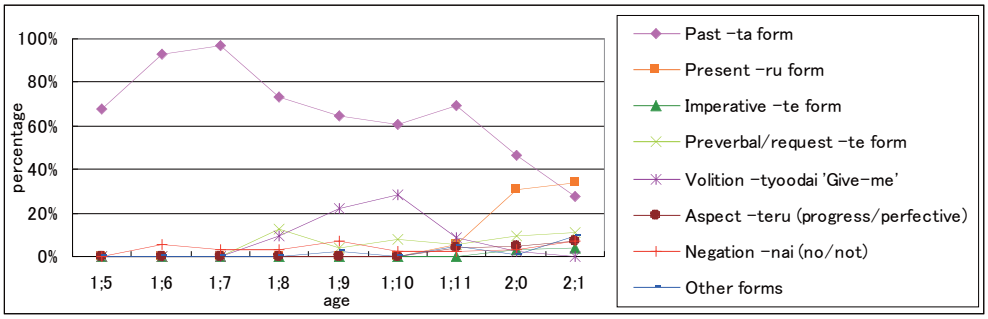
c. Meen-ta. (1;7) (irrealis) (adult form: meen to i-u)
"meen"(onomatopoeia)-Past

'(Mommy would say,) "Meen."'

In (17a), Sumihare found a thread on his finger, and intended to inform his mother of this. Here, the aspectual morpheme *-te-i-ru* would be used in adult grammar, but Sumihare used *tui-ta*. Likewise, in (17b), Sumihare employed the V-*ta* form instead of the V-*te-i-ru* form for the progressive event. In this case, one of his friends was peeing. In (17c), Sumihare's mother asked him what she would say if he wet his underpants, and he intended to reply to it. Here, the present tense form *i-u* (to say) or the future tense form *-i-u-daroo* would be used in adult grammar, but the V-*ta* form was used instead.

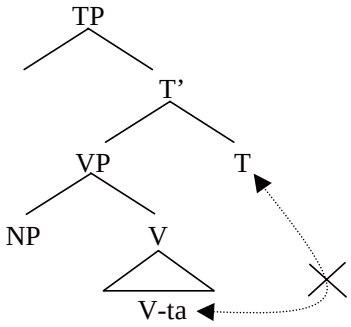
The percentage of the V-*ta* form decreases with age. At 1;6-1;7, he predominantly used the V-*ta* form almost 100% of the time.

Figure 1: The Overall Proportion of Verbal Forms in Sumihare's Corpus at Each Stage



The fact that the *-ta* forms, but not the other verbal forms such as imperatives and present-tensed forms, was consistently used to denote different meanings suggests that the verbal conjugation, i.e., the merger of V and inflection, is not yet available then. Namely, this is a stage where a default form is picked up by the child for the verbal element. If this is the case, then, the whole V-*ta* form must be base-generated as an unanalyzed form as illustrated in (18). This stage is characterized as the one where the verbs are not merged with the head of TP.

(18)



At 1;8, modal meanings began to be frequently realized with *tyoodai*.[7] Instead of adults' *si-te kudasai* (V-*te* please-do/give-me), which requires multiple steps of head movement, an independent verbal element *tyoodai* (please-do/give-me), began to be productively used to convey the meaning of volition or a request.

[7] *Tyoodai* is a colloquial expression that is equivalent to *kudasai* (please-do/give-me). It is used as the main verb taking a noun complement as in (i) or as an auxiliary as in (ii).

(i) Ringo(-o) tyoodai.
an apple-Acc give me

'Give me an apple.'

(ii) Hayaku si-te tyoodai.
quickly do-preverbal please-give/please-do

'Please do (it) quickly.'

(19) a. Tii tyoodai. (1;9)
pee give-me

'Please help me to pee.'

b. Nainai tyoodai. (1;10)
no-no give-me

'Please put (this) away.'

In (19a) and (19b), *tyoodai* follows the onomatopoeia *tii* (pee) and *nainai* (no-no). As shown in Figure 1 above, the rate of the non-finite past-tensed form decreases in accordance with the increase of *tyoodai* (please-do/give-me).[8]

The increase of the *tyoodai* form at the Very Early Non-Finite Verb Stage parallels the Modal Reference Effects in the Dutch-type languages, where RIs receive a modal meaning with overwhelming frequency at the later stage of Root Infinitives. As the merger inside the verbal projection is not possible, the child is forced to employ a non-merging strategy and use an independent verb *tyoodai* at this Very Early Non-Finite Verb stage in order to verbalize his volition.

Although volition was expressed by *tyoodai* at around the age of 1;9, the child was still in the Very Early Non-Finite Verb Stage. This is confirmed by the fact that erroneous V-*ta* forms were still used for perfective and progressive sentences instead of the aspectual form V-*te*-*i*-*ru*.

(20) a. Nenne-ta-noo. (1;9) (result state) (adult form: si-te-i-ru)
sleep-Past-Mood

'(I) am in the bed (with Daddy).'
Context: Sumihare (the speaker) is in bed with his father.

b. Buu maimai-ta. (1;10) (progressive) (adult form: si-te-i-ru)
plane go around-Past

'A plane is going around.'

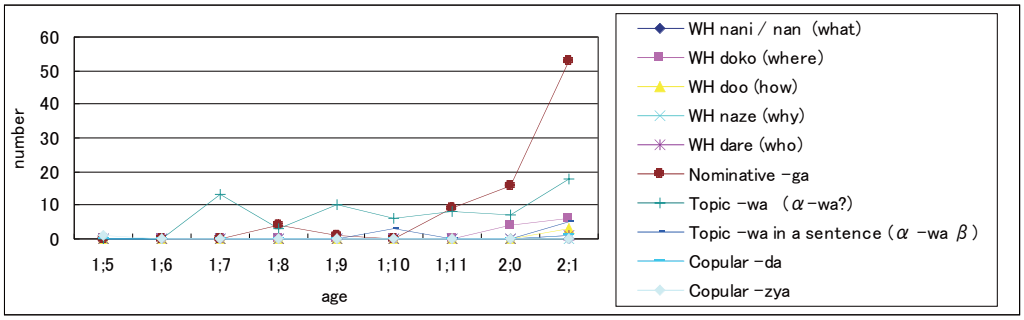
The appropriate form to refer to the result state in (20a) would be *si*-*te*-*i*-*ru* in adult grammar, but Sumihare employed the *-ta* form instead in order to inform his mother of the situation. In (20b), *-ta*, instead of *-te*-*i*-*ru*, is attached to the onomatopoeia *maimai* (onomatopoeia, meaning go around) to describe an ongoing event of an airplane's going around.

Then, how about the presence of *wh*-questions at this stage? Interestingly, Crisma's

[8] Murasugi and Hashimoto (2004) argue that the *v*-VP structure is acquired very early and *v* is initially realized as *tiyu/tita/tite* (do/did/doing). If we apply their analysis to this case, *tyoodai* produced in this stage may be the head of *v*P.

effect is observed in Japanese, even though *wh*-questions in Japanese may not require main verbs to move. As in European languages, Tense- or C-related elements (e.g., complementizer sand *wh*-phrases) are not found with the non-finite *-ta* forms, as Figure 2 shows.[9]

Figure 2: Frequency of C-, T- and D-related Elements in Sumihare's Corpus



These data indicate that the RIs are not merely due to performance deficits of children. Rather, as Hyams (2005) discusses, MoodP is active during the Very Early Non-Finite Verb (RI analogue) Stage, while AspectP and TP are still underspecified and the head movement inside the verbal projection is still unavailable. Evidence for the underspecification of T is found in the absence of any other T (or I) elements at the stage in question. The Nominative Case marker *-ga* and the finite *da/zya* (the finite *be*, the copula) were not observed either then in Sumihare's corpus, which confirms the possibility that the stage is not due to deficits in (the realization of the features of) T (or I).

Then, how about Krämer's effect? As is the case in the acquisition of some other languages, Sumihare initially produced null subjects frequently with many verbs, though the rate of null subjects sometimes decreases, and sometimes does not, depending on the verb.[10] As shown in Figure 3,[11] the percentage of null subjects of such speaker-oriented verbs as *pai* (to throw away) or *suru* (to do), where the agent tends to be a speaker (Ego), stays high even after inflections (conjugations) properly appear. On the other hand, subjects (a Topic NP) conveying new information with eventive verbs such as *oti-ru* (to drop) or *ku-ru* (to come) do not tend to be null. This is different from the findings reported in the studies of non-null-subject languages, though it may not be surprising given that Japanese is a

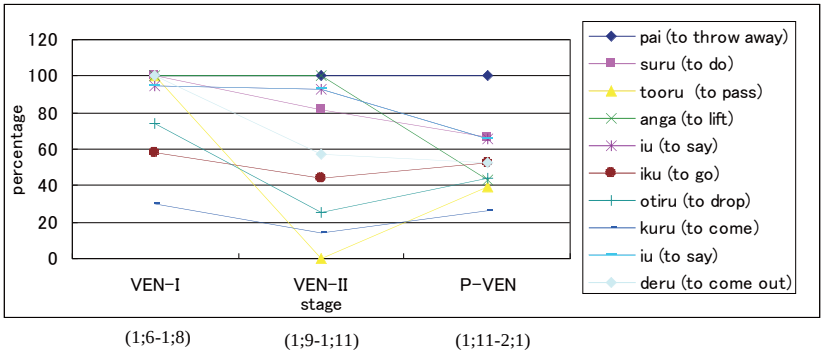
[9] The topic marker *-wa* was produced at a very early stage, only in the form of NP-*wa*, without ever being followed by verbal predicates.

[10] Although verb movement may be involved in the assignment of Nominative Case (Huang 1987, Otani and Whitman 1991), the Nominative Case *-ga* does not appear on subjects at the RI analogue stage. The Nominative Case marker *-ga* first appears around 1;11.

[11] VEN stands for Very Early Non-Finite Verb Stage, which is divided into two sub-stages: VEN-I is the stage where the V-*ta* form is used almost 100% of the time and VEN-II is the stage where a modal meaning is realized with the form *tyoodai*. P-VEN stands for Post-Very-Early-Non-Finite Verb Stage.

discourse-*pro* language.[12]

Figure 3: Proportion of Null Subjects of Each Verb in Sumihare's Corpus



It has been observed that children speaking agglutinative languages, e.g., Tamil (Raghavendra and Laurence 1989) and Turkish (Aksu-Koç and Slobin 1985), acquire verb inflections at a very early stage. The early emergence of RI analogues in languages such as Japanese, Korean (Kim and Phillips 1998), Italian (Salustri and Hyams 2003, 2006), American and Brazilian Sign Languages (Lillo-Martin and Quadros 2008), Chinese (Chien 2008), Arabic (Aljenaie 2000), and Greek (Varlokosta et al. 1996, Hyams 2005) can be explained by a morphological parameter, the Stem Parameter proposed by Hyams (1986), which is responsible for the well-formedness of bare verbal stems in a given language (see also Aljenaie 2000, Hyams 2008). According to this hypothesis, English, for example, has the value [+bare stem], since its verbs can surface as bare stems. On the other hand, in such languages as Japanese, the parameter has the opposite value, namely [–bare stem], since verbs in these languages cannot surface as bare stems. Children acquiring Japanese learn the verb conjugations earlier than English-speaking children because, given the Japanese setting of the parameter, there is no option of omitting the verb conjugations.

3.2.2. The Post-Very-Early-Non-Finite Verb Stage (Head merger of V-Asp/V-T)

Sumihare started to produce the "correct" non-past form V-*ru* as in (21) in the proper contexts. around 1;11.

(21) a. Ik-u-yoo. (1;11) (present)
go-Pre-Mood

'(I)'ll go to (Tiiko's house).'

[12] Kim and Phillips (1998) argue that the overuse of the default mood-inflection '*-e*' in the earliest speech of Korean children parallels the RI in other languages, and report that there is no correlation between the RI analogue form and the number of null subjects produced at the stage. See Murasugi and Fuji (2008) for an argument in favour of a parallelism between the RI analogue stages of Japanese and Korean.

b. Okku a-ru-yo. (1;11) (present)
medicine be-Pres-Mood

'Here is the medicine.'

Sumihare also started to produce the abbreviated aspectual form *-teru* at around the age of 1;11. As shown in (22a) and (22b), the form is used for result states and progressives. The frequency of each verbal form is illustrated in Figure 4.

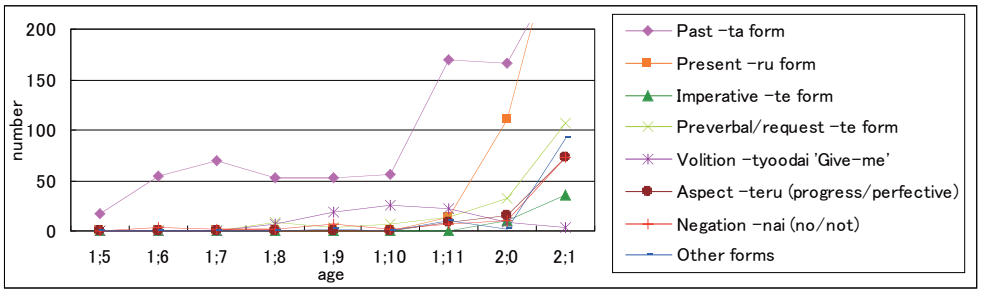
(22) a. Wanwan tyan si-teru. (1;11) (result state)
dog sit do-Asp

'A dog is sitting (here).'

b. Buranko ti-teru. (2;0) (progressive)
swing do-Asp

'(A scarecrow) is swinging.'

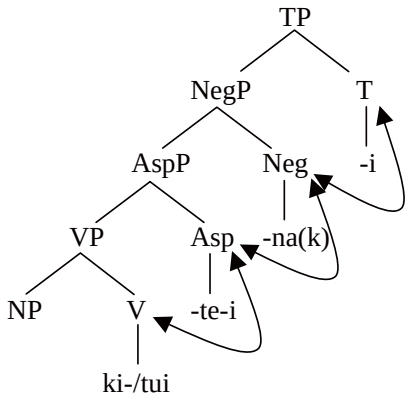
Figure 4: Frequency of Verbal Forms in Sumihare's Corpus



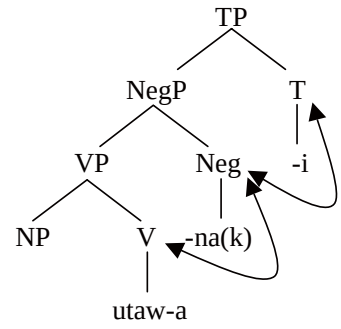
The *-ta* form is dominant in 1;6-1;11 (i.e., the Very Early Non-Finite Verb (RI analogue) Stage) in number; the non-past *-ru* form, the aspectual *-teru* and the preverbal *-te* form started to appear after 1;11. The other inflections began to be produced around 2;0. These facts indicate that at least the merge of the verb with inflection is available at around 1;11.

Evidence for the unavailability of two-step head movement at this stage is elicited from an analysis of the negative sentences Sumihare produced. In adult Japanese, the negative marker *-nai* (not) is a verbal predicate which itself carries a finite tense (Sano 2000), and two-step head movement (V-Neg-T) is involved. To form the adult negative predicates *ki-te-na-i* and *utawa-na-i*, multiple head merger is required.

(23) a.



b.



However, at around 1;11-2;2, the child consistently produced erroneous negative sentences such as (24) and (25). These examples clearly show that the child is not making the adult-like application of head movement (or multiple applications of merge under the PF merge analysis).

(24) a. Tinbun ki-ta-nai-yo. (1;11) (adult form: ki-te(i)-nai)
newspaper come-Past-Neg-Mood

'The newspaper has not come yet.'

b. MOT:Sekken-ga te-ni tui-te-i-ru kara arai nasai.
soap-Nom hand-Dat stick-Asp-Pres as wash Imperative

'Wash your hand. Some suds stick on your hand.'
SUM:Tui-ta-nai. (1;11) (adult form: tui-te(i)-nai)
stick-Past-Neg

'No, (they) don't.'

(25) Utaw-(r)u-nai. (2;0) (adult form: utaw-a-nai)
sing-Pres-Neg

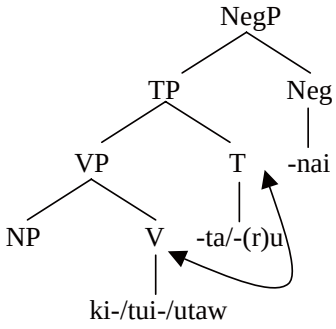
'(Mommy) doesn't sing.'

In the examples shown in (24), the negative marker *-nai* is not merged with the preverbal form *ki-te-i* or *tui-te-i*. Rather, *-nai* follows the complete past-tensed verb *ki-ta* (came) in (24a) and *tui-ta* (stuck) in (24b). In (25), *-nai* even attaches to the full present-tensed verb *utaw-(r)u*.[13] This fact suggests that the structure of (24) and (25) in child Japanese is

[13] Sumihare produced a few correct negative forms as in (ia-b). We consider these as unanalyzed form stored as chunks (by rote) in the child's lexicon. It is around 2;2 that Sumihare began to use the correct past tense form *-na-k-atta* productively.

something like (26), which is different from the ones in adult grammar (23a,b) in that NegP is located outside of TP.

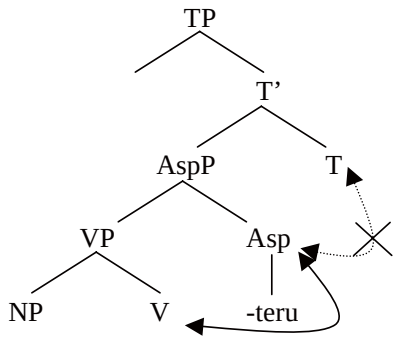
(26)



The consistent errors Sumihare made for negation with different types of verbs indicate that only one merge of the verb with inflection is available at around 1;11-2;0. Here, the negative morpheme *-nai* is base-generated as an unanalyzed form, i.e., Neg (*-na*) and T (*-i*) are not separated in child grammar.

Further support for the unavailability of two-step head movement inside the verbal projection around 1;11-2;0 is found in the morphology of aspect. Although the V-*teru* form is "correctly" used to refer to a result state in (22a) and a progressive in (22b), the form in this stage is always produced as *-teru* but never as *-te-i-ru*. As the past-tensed form *-te(i)-ta* is not produced either, the *-teru* form produced then would be a chunk (a rote form) as shown in (27).

(27)



At the Post-Very-Early-Non-Finite Verb Stage, other aspectual or mood forms such as

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(i) a. Mie-nai ne. (1;11)
see-Neg Mood

'(We) cannot see (that).'

b. Nakanaka ko-nai ne. (2;1)
not nearly come-Neg Mood

'(The train) has not come as yet, has it?'

V-*te-simat-ta* (V-Asp (perfective)-Past), V-*ta-i* (V-*v* (volition)-Pres), and so forth, which require two (or more) -step head movement, were not produced either.

3.2.3. The Onset of Finite Verb Stage (Multiple head merger)

Two-step head movement (or a second application of merger under the PF merger analysis) seems to be acquired around the age of 2;1, when the verbal conjugations explosively increased. The V-*te-i-ru* form (28), the V-*te-ta* form (29), and the V-*toru* form (30), which is the equivalent of the V-*te-i-ru* form in Sumihare's dialect (the Setouchi dialect),[14] appeared at this stage.

(28) a. Hasit-te-i-ru inu. (2;2) (progressive)
run-Asp-Pres dog

'A running dog.'

b. Ki-te-i-ru-yo. (2;2) (perfect)
come-Asp-Pres-Mood

'(It) has come.'

(29) Atti-ni tomat-te-ta. (2;2) (result state)
there-at stop-Asp-Past

'(The bus) had stopped there.'

(30) a. Oki-to-ru-yo. (2;2) (perfect)
awake-Asp-Pres-Mood

'(The baby) is awake.'

b. Keetyan-ga nai-to-ru. (2;3) (progressive)
K -Nom cry-Asp-Pres

'Keetyan (Ms. Keiko) is crying.'

The emergence of these forms leads us to conjecture that the *-teru* form is no longer a rote form. Thus, the derivation containing two-step head movement (or the second application of merger under the PF merge analysis) should be acquired.

---

[14] The Setouchi dialect is a dialect spoken around Ehime in the Western Japan. V-*toru* in this dialect corresponds to V-*te-i-ru* in the Tokyo dialect. They are both ambiguous between a progressive interpretation and a perfective interpretation (Aono 2007), as shown in (i).

(i) Happa-ga oti-to-ru.
leaf-Nom fall-Asp-Pres

'A leaf is falling.' / 'A leaf has fallen.'

It is also 2;1 when Sumihare started to produce the past-tensed negative form V-*na-katta*, as in (31).

(31) Naka-na-katta. (2;2)
cry-Neg-Past

'(I) did not cry.'

The fact that Sumihare came to distinguish the past-tensed form *-na-katta* from the present-tensed form *-na-i* suggests that the child now differentiated the tense morphemes *-i*/*-katta* from the verb stem and the negative marker.

Although it is not clear when children switch from two-step to three-step head movement (or learn multiple applications of merger under the PF merger analysis), it was only around the age of 2;3 when Sumihare used multiply-merged forms.

(32) Kazi-ni nat-te-na-katta. (2;4)
fire-Dat be-Asp-Neg-Past

'(It) has not caused a fire.'

The verbal form *nat-te-na-katta* is derived via three (or more)-step head merger as represented in (23a). Sumihare, at this stage, had become able to produce the complex, multiply-merged negative form V-*te-na-katta.*

Furthermore, complex verbs involving at least three-step head merger began to be produced around 2;3.[15]

(33) a. Kumot-te ki-ta-ne. (2;4)
cloud-Preverbal come-Past-Mood

'It's getting cloudy.'

[15] The erroneous use of V-*ta* instead of V-*ru* or V-*t-ei-ru* persisted even after the age of 2;2 until around 2;6. An example is given in (i).

(i) Kaatyan buranko timawa-na (=simawa-na). Ame-ga hut-ta-yo. (2;4) (progressive)
Mommy swing clean up-Mood rain-Nom fall-Past-Mood

'Mommy, (we) must put the swing back. It's raining.' (Adult form: hut-te-i-ru)
Context: Since it was raining, Sumihare asked Mommy to clean up the swing.

There are at least two possible accounts for the fact that this type of error continues to be produced even after head merger inside the verbal projection has been acquired. One is, in line with Phillips (1995), to consider that these errors are due to performance errors. The other is to consider them as the "Optional Infinitives" although they are not many in number. See Murasugi and Watanabe (2008).

b. Mata ame hut-te ki-ta-yo. (2;4)
again rain fall-Preverbal come-Past-Mood

'It started raining again.'

To summarize, there are at least three stages in acquiring head movement (or merger under the PF merger analysis): (i) No merger of the verb with inflection (Very Early Non-Finite Verb Stage or RI analogue stage),[16] (ii) the merger of the verb with inflection available (Post-Very-Early Non-Finite Verb Stage), and (iii) two (or more)- step head merger available (Onset of Finite Verb Stage).

3.2.4. Further Evidence from Japanese-Speaking Child Akkun

In subsections 3.2.1.-3.2.3., based on a corpus analysis of Sumihare (Noji 1973-1977), we argued that the V-*ta* form is the RI analogue. In this subsection, based on longitudinal data of Akkun, a Japanese-speaking child,[17] we show the further evidence that there is an RI analogue stage in child Japanese.

Just like Sumihare, Akkun started to use the past tense form, V-*ta* in the same way as an adults do at around 1;8, as shown in (34).

[16] Table 8 compares the numbers of the sentences involving V-Neg head movement produced at the Very Early Non-Finite Verb Stage and at the Post-Very-Early-Non-Finite Verb Stage found in the corpus of Sumihare.

Table 8: The Correlation between RI analogues and Head Movement with V-Neg Sentences

	no head movement	head movement
Very Early Non-Finite Verb Stage (1;6-1;10)	17	0
Post-VEN Verb Stage (1;11-2;6)	0	139

Total=156, χ^2 =156.21, p=0.0004 <0.001

We classify the negative forms such as *i-nai* (be-Neg) or *ika-n* (go-Neg) into the unanalyzed forms when they are used in a limited way (in number and variety). On the other hand, as for those V-Neg forms productively produced with other verbs productively, we classify them into the analyzed (differentiated) forms. The results shown in Table 8 would suggest that no sentence involving head movement (the merge of the heads) inside the verbal projection is produced during Very Early-Non-Finite Verb Stage, and the results are consistent with Phillips' (1995) insight that there is no head movement in RI clauses.

[17] The longitudinal study of Akkun was conducted from 1;7 until 4;0 of age. Tomoko Hashimoto, Akkun's mother, recorded/transcribed the naturalistic data 10 hours a week on average. Some crucial sentences were also elicited by Tomoko Hashimoto and Keiko Murasugi by using the method of elicited production in the course of the longitudinal study.

(34) a. Akkun tat-ta. (1;8)
A stand-Past

'Akkun(/I) stood.'

b. Wanwan at-ta. (1;9)
dog there is-Past

'There was a dog (SNOOPY).'

Interestingly, just like Sumihare, the past tense form, V-*ta* form, was used for volition and a request as shown in (35), and the other verb forms such as the present tense form and the progressive/perfective *-te(i)ru* form were not produced until 1;11.

(35) Akkun mama tat-ta. (1;9) (request) (adult form: tat-ase-te)
A Mommy stand-Past

'Akkun(/I) wants Mommy to stand up.'

In (35), Akkun asked his mother to stand up. In this context, he employed the past tense form, V-*ta*. At this stage, or the Very Early Non-Finite Verb Stage, and merger of the verb with inflection is not observed.[18]

It was around 1;11 that the conjugations of verbs started to appear in Akkun's natural production. He started to use another verb form, namely, the request V-*te* form, as shown in (36).

(36) a. Akkun doo-te (=doi-te). (1;9)
A step aside-Req

'Akkun (wants Mommy) to step aside.'

b. Mama mot-te. (2;2)
Mommy hold-Req

'Mommy, please hold (a broom).'

In (36a), Akkun asked his mother to step aside, employing the V-*te* form. In (36b), Akkun was watching a video, and wanted to imitate a situation in it. He asked his mother to hold a

[18] Compared to Sumihare, the number of utterances using the V-*ta* form for volitional expressions and requests is small. One plausible reason for this is that Akkun, unlike Sumihare, started using the adjective *hosii* ('want') at a very early stage.

(i) Akkun osii (=hosii) ziizi (1;9)
A want pen (*Lit*. letter)

'Akkun(/I) wants to use the pen.'

broom.

Although the V-*te* form was often used correctly in the same way as adults, interestingly enough, it was also erroneously used sometimes, as exemplified in (37). In (37a), Akkun was looking at a picture of a train in a picture book, and intended to mean that he wanted his mother to let him ride on the train. Here, the imperative form of the intransitive verb *noru* (to ride) was employed instead of the imperative form of the transitive *nose-ru* (to give a ride). In (37b), Akkun was talking about a past progressive event, and the past progressive form *-tei-ta* would follow the verb in the adult grammar. However, the past progressive form *-tei-ta* dropped here, and the request form, the V-*te* form, was used instead.

(37) a. Akkun koe (=kore) not-te. (2;1) (adult form: nose-te)
A this ride-Req

'Please give Akkun (/me) a ride on this (some day).'

b. Baanii mat-te. (2;2) (past progressive) (adult form: mat-tei-ta)
Barney wait-Req

'Barney was waiting.'

The examples above, then, indicate that it is the imperative V-*te* form that Akkun probably started to find that his target language has rich lexical realization of inflection, and Akkun found that there was another morpheme that could be attached to the verb stem in addition to *-ta*[19], just like Sumihare, who found that the non-past *-ru* form, the aspectual *-teru* and the preverbal *-te* form could be attached to the verb stem.

Suppose that the V-*te* form is the first form acquired after the stage of RIA, viz., the Post Ver-Early-Non-Finite Stage. One piece of evidence for the hypothesis is in fact found in the negative sentences that Akkun produced at around this stage. Just like Sumihare, Akkun attached the negative marker *-nai* to fully-tensed verbs. The crucial examples are given in (38).

---

[19] The present tense verb form is also produced after 1;11, although the number is very small.

(i) a. Akkun mot-(r)u. (1;11)
A hold-Pres

'Akkun (/I) will hold (it).'

b. De-yu (=de-ru) zyabuzyabu. (2;1)
get out-Pres onomatopoeia (bath)

'(I'll) get out of the bath tub.'

The present tense forms *mot-(r)u* (hold) and *de-ru* (get out) in (i) were are correctly used in appropriate situations.

(38) a. Owat-ta nai. (2;3) (adult form: owat-te(i)-nai)
finish-Past Neg

'(It is) not finished yet.'

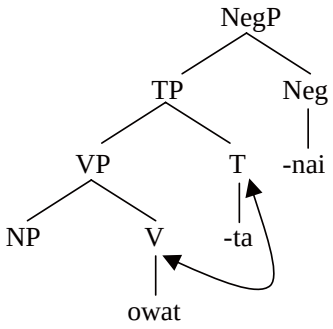
b. Nai-teru nai. (2;4) (adult form: nai-te(i)-nai)
cry-Progressive Neg

'(The bear) is not crying.'

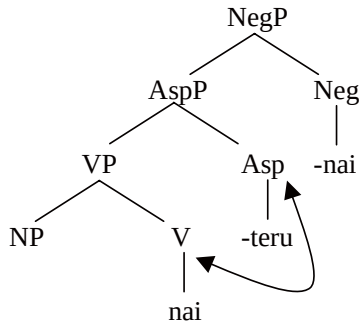
In (38), the negative marker *-nai* should follow the preverbal form *-te*. However, it was attached to a past tense verb in (38a) and the progressive form in (38b).

Thus, the child can produce a verb phrase involving only one-step head merger at this stage, but two-step head merger is still impossible, as illustrated in (39).

(39) a.

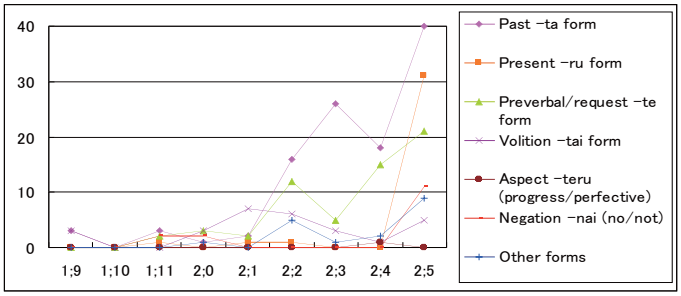


b.



If this line of argument is on the right track, then the onset of Finite Verb Stage must be found around 2;5. Akkun actually started to use various conjugated forms with respect to aspect and tense at around 2;5. The number of verbal forms produced by Akkun is shown in Figure 5.

Figure 5: Number of Verbal Forms Produced by Akkun



As shown in Figure 5, the number of various verbal forms, especially of the present tense form, increases after 2;5.

Furthermore, negative sentences were correctly produced at 2;5, as shown in (40).

(40)	Akkun	mama	aan	naite	nai.	(2;5)
	A	Mommy	onomatopoeia	cry	Neg	

'Akkun (/I) (just said) "Mommy", but not crying "aan".'

In (40), the negative marker *-nai* is correctly attached to the preverbal form *-te*. Hence, at this stage, more than two-step head merger inside the verbal projection is acquired.

To summarize, Akkun went through basically the same stages as Sumihare did. At the Very Early Non-Finite Verb Stage (1;9-1;10), only the past tense verb form was used, and the form had the Modal Reference Effects. Then, the Post-Very-Early-Non-Finite Verb Stage started around 1;11 and lasted until around 2;5. At this stage, only one-step head merger was available. The Finite Verb Stage started around 2;5, where Akkun used various verb forms in the same way as adults do.

To conclude this section, we propose that (i) there is an RI analogue stage as an intermediate stage of Japanese acquisition, (ii) our corpus analysis of Sumihare (Noji Corpus) indicates that the RI analogue is a verb associated with the past-tensed form *-ta*, (iii) the stage occurs much earlier than TI stages of the European languages, namely at the age of one, (iv) the form is initially (at around 1;6-1;7) used 100% of the time for past, perfective, imperative, and irrealis meanings, and (v) the stage basically exhibits nature summarized in (4) (except for (4a, c, g)). T (or I) and AspectP are underspecified, while the MoodP is active during the Very Early Non-Finite Verb Stage, as Hyams (2005) argues. Our study here suggests that RI analogues found in Japanese are <u>not merely</u> due to deficits in child performance, contra processing approach proposed by Phillips (1995, 1996).

However, Phillips's analysis gives us a very insightful guide to the understanding of the intermediate stages of verb acquisition of agglutinative languages. During the RI analogue stage, merger of the verb with inflection is <u>not,</u> in fact, available in Japanese. There is a

correlation between the RI analogue (Very Early Non-Finite Verb) stage in Japanese and the absence of head movement (merger). At the Post-RI analogue (Post-Very-Early-Non-Finite Verb) stage, only one-step head movement in Phillips' term is available, and a merger of the verb with T(I) is acquired. Then, the abbreviated aspectual or negative forms without recourse to multiple-step head movement. It is only the Post RI analogue stage when the multiple heads can be joined.

Our analyses suggest that in the [–bare stem] languages under the Stem Parameter proposed by Hyams (1986), so-called Root Infinitives are realized as the default complete verbal forms: the past-tensed *-ta* form in Japanese, the mood marker *-e* in Korean (Kim and Phillips 1998), imperatives in some languages like Italian (Salustri and Hyams 2003, 2006), American and Brazilian Sign Languages (Lillo-Martin and Quadros 2008), Chinese (Chien 2008), and Kuwaiti (Aljenaie 2000), and bare perfectives in Greek (Varlokosta,Vainikka and Rohrbacher 1996, Hyams 2005).

RIs (RI analogues) are the children's first step to the system of the verb. As Rizzi (2000) states, they exhibit whatever unmarked non-finite form the language possesses. Children, even at age one or two, pick up a default verb form in the target language, e.g., infinitives, bare forms, or full forms, depending on the language type, and use it. The children's common "errors" found across languages constitute evidence against the claim that children just imitate the adult usage.

4. Null Realization of Functional Category: The Acquisition of Small *v* in the VP shell

After the Root Infinitive analogue stage, or after having successfully learned to merge the verb and the inflection, do Japanese-speaking children already produce verbs just like adults? The answer is negative. There is another type of error that Japanese-speaking children typically make in the acquisition of verbs. After the Root Infinitive analogue stage, children start acquiring the conjugation system of verbs, without lexically realizing the small *v*.

Murasugi and Hashimoto (2004) report that 2-4 year-old Japanese-speaking children, despite being able to use unaccusative and ditransitive verbs "correctly", often show interesting and consistent errors. In the process of acquiring the lexical items that correspond to V-*v* combinations, Japanese-speaking children often use unaccusative verbs incorrectly as transitive or causative verbs, or vice versa sometimes, as shown in (41c-d).

(41) a. Dango-ga uta pakan tite, dango-ga atta. (Akkun, 2;9)
dumpling-Nom lid (onomatopoeia) doing dumpling-Nom there-be

'There was a dumpling (when I) opened the lid of the dumpling (box).'

b. Kinnou Akkun akatyan toki, papa-ni koe ageta. (Akkun, 2;10)
yesterday A baby when Daddy-to this gave

'Akkun gave this to Daddy when he was a baby yesterday (=in the past).'

c. Nee, ati-o hirogat-te. (Akkun, 3;7)
hei legs-Acc spread (unaccusative)-Request

'Hei, please spread your legs.' (Adult form: hiroge-te)

d. Todok-ok-ka, ano hito-ni todok-(y)oo todok-(y)oo. (Akkun, 4;8)
arrive-let's that person-to arrive-let's arrive-let's

'Let's send (it). Let's send (it) to that person.' (Adult form: todoke-yoo)
(Murasugi and Hashimoto 2004)

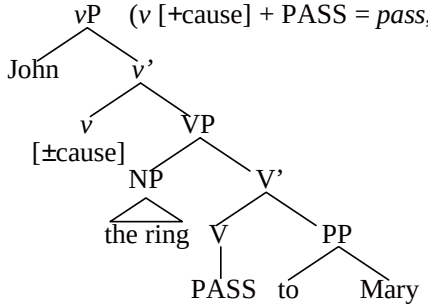
Murasugi and Hashimoto (2004) propose that children initially assume the pronounced verbs are bare V's and the [±cause] *v* is phonetically empty.

In adult English, a single lexical item can often be used both as a transitive and as an unaccusative. Thus, we have alternations as in (42).

(42) a. John passed the ring to Mary.
b. The ring passed to Mary.

If the argument structures of these sentences are realized as in (43), then *v* is a "zero morpheme" without phonetic content whether it is [+cause] as in the case of (42a) or [–cause] as in the case of (42b).

(43) *v*P (*v* [+cause] + PASS = *pass*, *v* [–cause] + PASS = *pass*)

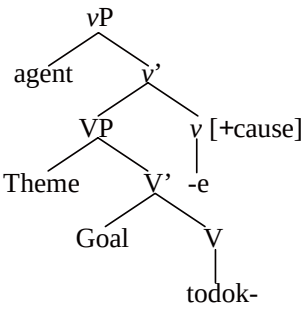


Consequently, both '*v* [+cause]+PASS' and '*v* [–cause]+PASS' are realized as 'pass'.

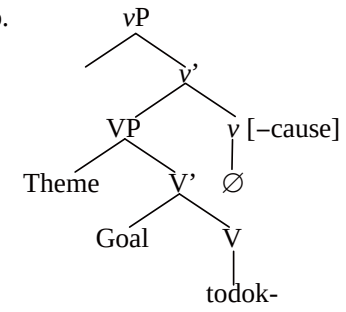
In contrast, in adult Japanese, transitivity and unaccusativity are often marked by distinct suffixes, as illustrated in (44) and (45).

(44) a. hirog-e-ru (=spread (vt.)) / hirog-a-ru (=spread (vi.))
b. todok-e-ru (=deliver-present) / todok-(r)u (=be delivered-present)

(45) a.



b.



These examples indicate that the forms of the suffixes are idiosyncratic and probably have to be learnt one by one by children. The suffixes plausibly occupy the *v* position in the structure of the VP-shell, e.g., [+cause] *v* is realized as *-e* and [–cause] *v* as *-a*, in the case of (44a), and accordingly, to the children making such errors as (41c-d), unaccusatives and their transitive counterparts are homophonous, as is the case in English. They only later realize that the surface forms of the verbs are derived by suffixing *v* to the verbal root. As the actual realization of the [±cause] *v* is idiosyncratic and sometimes even null, the acquisition of verbs requires a complex morphological analysis. Murasugi and Hashimoto (2004) suggest that Japanese-speaking children are equipped with the *v*-VP frame from the early stage of acquisition, but they initially hypothesize the English *pass*-type verbs, and it requires them to take some time to discover the actual morphological make-up of the verbs, which are formed by combining V and *v*.[20]

5. Conclusion

In this paper, we first showed that there is a very early non-finite stage, or an Root Infinitive analogue stage in child Japanese at the age of one, where the V-*ta* form is used for

[20] Murasugi and Hashimoto's (2004) analysis is supported by a data analysis of another Japanese-speaking child Sumihare (Noji 1973-1977) in the CHILDES database (MacWhinney 2000). Sumihare went through acquisition stages which are exactly parallel with Akkun's. Erroneous alternations between intransitive verbs and transitive/causative verbs were observed likewise (see Murasugi, Hashimoto and Fuji 2007).

(i) a. Kutyu ha-ite. (Sumihare, 2;1) (Adult form: hak-(s)ase-te)
a pair of shoes put on-Request
'(Please) put a pair of shoes on me.'

b. Kaatyan ai-te. (Sumihare, 2;1) (Adult form: ake-te)
mother be open (unaccusative)-Request
'(Please) open (the door), mother.'

c. Nui-ta koko. (Sumihare, 2;1) (Adult form: nuke-ta)
pull-Past here
'(This) comes out from here.'

an irrealis meaning, just like Root Infinitives in European languages. Japanese-speaking children, instead of using the infinitive form or bare form, attach a default morpheme to the non-finite verb. We showed that at the Root Infinitive analogue stage, the operation of merging the verb with an inflection is not yet observed. Second, we argued that after having successfully learned to merge the verb and the inflection, children speaking an agglutinating language have difficulties in the intransitive-transitive/causative alternation of the verbs, that is, in learning the lexical realization of small *v*. Children erroneously use intransitive verbs as transitive/causative verbs, and sometimes vice versa.

This paper showed that children borne into the circumstance of such Japanese grammar, even at the age of one, know the basic nature of agglutinative languages: The stem of the verb cannot stand by itself without being associated with a bound morpheme. What's acquired later in Japanese, an agglutinative language, is the specification of Tense features, the merger operation of the verb with an inflection, and the correct lexical realization of small *v* in complex predicates.

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STEPS IN THE EMERGENCE OF FULL SYNTACTIC STRUCTURE IN CHILD GRAMMAR *

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1. Introduction

Between the ages of 11 and 19 months, the first utterances (or holophrases) make their appearance in child language. It has generally been believed that children's knowledge of syntactic structure is not well developed during the initial period of language acquisition. Japanese-speaking children, just like children speaking other languages, start with the holophrase stage, followed by the two-word stage and the multi-word stage. But children do not necessarily start just with nouns and verbs. They also produce the uppermost elements that link the speaker and the addressee, or discourse markers/sentence-final particles, at a very early stage of language acquisition as well. This paper explores two topics pertaining to children's early syntactic structure, Root Infinitives and the acquisition of discourse markers.

In this paper, we report the finding that Japanese- (and Chinese-) speaking children produce sentence-final particles earlier than tense-marked verbs, but argue that this is consistent with the Truncation Hypothesis proposed by Rizzi (1993/1994) for children's early

* I would like to take this opportunity to thank Mamoru Saito, Diane Lillo-Martin, William Snyder, Željko Bošković, Mona Anderson, Michiya Kawai, Luigi Rizzi, Adriana Belletti, Memo Cinque, Ken Wexler, Ian Roberts, Jim Huang, Dylan Tsai, Jonah Lin, Madelaine Chien, Audrey Li, Andrew Simpson, Thomas Lee, R. Amritavalli, K.A. Jayaseelan, Kamil Deen, Bonnie Shwartz, Lillian Haegeman, Kensuke Takita, Koji Sugisaki, Yuji Takano, Hideki Kishimoto, Daiko Takahashi, Yoichi Miyamoto, Hiroaki Tada, Hisa Kitahara, Hide Tanaka, Mika Kizu, Peter Sells, Bjarke Frellesvig, Haruo Kubozono, Taro Kageyama, Hiromu Sakai, Masatake Arimoto, Tomo Fujii, Tomoko Kawamura, Tomoko Hashimoto, Tomomi Nakatani, Chisato Fuji, KeikoYano, Yasuki Ueda, Mayumi Dejima, Eriko Watanabe, Naoko Sawada, Yuma Iwatani, Yasuhito Kido, and the colleagues in the Center for Linguistics at Nanzan University, University of Connecticut and NINJAL, and the researchers I've met through them for their suggestions on the topics discussed in this paper, although I cannot name them all here. My sincere thanks go to Mamoru Saito, Chisato Fuji, Yuma Iwatani and Anthony Cripps for their invaluable comments on this paper, and to Atsushi Sato for his editorial help.

The research presented in this paper was supported in part by the Nanzan University Pache Research Grant I-A 2012, JSPS Grant-in-Aid (C) (# 23520529, Keiko Murasugi), the Japanese Ministry of Education and Science Grant-in-Aid for 'Strategic Establishment of Centers for Advanced Research in Private Universities' (Mamoru Saito, Center for Linguistics, Nanzan University), and the National Institute for Japanese Language and Linguistics (NINJAL) Collaborative Research Project "Linguistic Variations within the Confines of the Language Faculty: A Study in Japanese First Language Acquisition and Parametric Syntax" (Keiko Murasugi, Project Leader, Nanzan University).

Nanzan Linguistics 9, 85–118
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syntactic structure. We show that a Japanese-speaking child at around 1;05 through 1;08 produce Root Infinitive (Analogues) such as the Verb+*ta* form with speech act heads such as *ne*, and later, at around 1;10, the complementizer *no*, which is the head of a Finite Phrase for propositions, productively. The empirical fact that it is only after 1;11 when the full conjugation of the verbs and Nominative Case marker start to appear suggests that children do not simply construct the phrase structure in a bottom-up way. Rather, very young children's syntactic structures are truncated, and the sentence-final particles or discourse markers bootstrap the acquisition of their full syntactic structure.

2. Grammatical Tense Deficits in Children

2.1. Root Infinitives

Young children have troubles with tense-marking. It has been found that in languages with relatively "rich" morphology such as Dutch, German and French, children may optionally use the infinitival forms of inflection (e.g., affix) on the verbs, rather than finite ones, in the root clause.

(1) a. Mama radio aan doen (Dutch) (2;00)
mummy radio on to-do

'Mummy switch on radio.' (Wijnen, Kempen and Gillis 2001)

b. Thorsten Caesar haben (German) (2;01)
Thorsten Caesar to-have

'Thorsten has [the doll] Caesar.' (Poeppel and Wexler 1993)

c. Voir l'auto papa (French) (2;02)
to-see the car daddy (Intended meaning: On-going activity) (Pierce 1992)

In languages which are relatively "poor" in inflectional morphology like English, on the other hand, the bare verb forms appear in finite (root) contexts. In adult English, infinitive forms are generally the bare stems, and English-speaking children produce the bare stems within the age range of 20-36 months as shown in (2).

(2) a. Papa have it (English) (1;06)

b. Cromer wear glasses (English) (2;00)

The non-finite verb forms employed by children in finite (root) contexts are termed Root Infinitives (RIs), and their properties have been extensively examined in child language research.

It has been pointed out that RIs/Root Infinitive Analogues (=RIAs) are associated with some morpho-syntactic and semantic properties.

(3) Properties common among Root Infinitives/Root Infinitive Analogues

a. At the RI stage, no T-related/C-related items are found.

b. RIs are produced to describe events in real time, that is, as an on-going activity in the past, present or future that the child is involved in.

c. RIs occur in modal contexts (Modal Reference Effects).

d. RIs are restricted to event-denoting predicates (Eventivity Constraint).

e. Head Merger is not available during the RI(A) stage.

As shown in (3a), at the stage where non-finite verbs are used in finite (root) contexts, C-related elements such as *wh*-phrases and complementizers (Haegeman 1995), and T-related elements such as *be*-copula and auxiliaries are not found. In addition, two peculiar types of contextual interpretations have been identified. One type refers to the so-called extensional contexts, whereby RI(A)'s are produced to describe events in real time, that is, on-going activities in the past, present or future that the child is involved in. For example, the non-finite forms in child French like (1c) are produced to describe an on-going activity. The other type of interpretation refers to the so-called intentional contexts, whereby RI(A)s are produced to express children's intention, desire or volition in various "irrealis" modal contexts. This is termed the Modal Reference Effects (MREs) (Hoekstra and Hyams 1998). In addition, RIs, in general, are largely restricted to the eventive predicates (Hoekstra and Hyams 1998), and the head merger between V and T is not available during the stage of RI(A)s (Phillips 1995, 1996; Murasugi and Fuji 2008b).

Deen (2002) argues that Swahili also has an RIA, whose form is a bare verb just like English. He argues that Swahili-speaking children omit prefixes in a pattern quite consistent with Schütze and Wexler's (1996) Agreement and Tense Omission Model (ATOM). According to ATOM, subjects need to check both tense and agreement features for adults, but for kids, only one is possible. Either T or Agr is left out, and hence, the case errors (e.g., *Him want it*) and the RIs are both observed at around 2 to 3 years old. Crucially, tense and agreement have distinct properties and play distinct roles in licensing the subject and inflection. Table 1 summarizes the possible combinations of the features of INFL. When agreement is fully specified in English, nominative Case must be assigned. When agreement is underspecified, nominative Case cannot be assigned, and hence, a default case, accusative Case, may arise. When tense is underspecified, the verb appears as a bare verb. When tense and agreement are both underspecified, subject is marked with genitive Case with a bare verb.

Table 1: Summary of possible features of INFL and the Case on Subject

INFL features	Subject	English Examples
+Tense, +agreement	NOM-Case marking	he cries
+Tense, - agreement	ACC-Case marking	him cry, him cried
-Tense, +agreement	NOM-Case marking	he cry
-Tense, - agreement	GEN-Case marking	his cry

(Schütze and Wexler 1996)

Accordingly, young children speaking Swahili omit functional elements such as tense and subject agreement, as shown in (4).

(4) Swahili RIAs: Bare Verbs (Deen 2002)

a. Child: mimi Ø -na -ruk -a (2;10)
Adult: mimi ni -na -ruk -a (present tense)
SA1s -pres -jump -IND

'I jump down.'

b. Child: ni -Ø -kw -ambi -a (1;10)
Adult: ni -na -kw -ambi -a
SA1s -pres -OA2s -tell -IND

'I am telling you.'

c. Child: Ø -Ø -tak -a tuwadh -a (2;06)
Adult: ni -na -tak -a tuwadh -a
SA1s -pres -want -IND bathe -IND

'I want to bathe.'

(4a) is a clause which lacks subject agreement; (4b) is a clause which lacks tense. (4c) shows that the child uses the bare stem of the verb which lacks both subject agreement and tense.

Deen (2002) typologically classifies child languages into three types: languages that allow "true" RIs such as German and French, languages that have no RI phenomenon such as Italian and Japanese, and languages like Swahili whose very early non-finite verb forms appear as bare verbs. Deen's typology has been supported, in part, by the tendency of subject NPs being phonetically null at the RI(A) stage in the non-pro-drop languages in general, and the empirical findings that Italian-speaking children (e.g., Martina (1;08-2;07), Diana (1;10-2;06), Guglielmo (2;02-2;07)) (Guasti 1993/1994) and Japanese-speaking children (e.g., Toshi (2;03), Ken (2;08-2;10), Masanori (2;04)) (Sano 1995) produce inflected forms in the

adult way at an early stage of language acquisition. It has been considered that children acquiring pro-drop languages do not go through the RI(A) stage.

Table 2: Typology of Root Infinitives (Deen 2002)

True RI Languages	Non-RI Languages	Bare Verb Languages
German	Italian	English
Swedish	Japanese	Quechua
French	Spanish	Sesotho
Icelandic	Catalan	Inuktitut
Dutch		Siswati
Russian		Swahili

In the next section, we argue that there is an RI stage in Japanese, and the languages categorized as Non-RI languages above are, in fact, the languages which have surrogate verb forms as the Root Infinitive Analogues.

2.2. Surrogate Verbs in Child Japanese: Verb+*ta* Form

Japanese is an agglutinating argument-drop language where bare stems cannot stand alone without, for example, tense or aspect morphemes, as shown in (5). Japanese is, like Italian and Spanish, a [-stem] language whose verbs cannot surface as bare forms.

(5) a. *tabe- (to eat)

b. *suwar- (to sit)

Unlike Italian and Spanish, however, Japanese does not have rich verbal inflection that indicates number and gender. Japanese verbs inflect for tense, negation, aspect and mood. The following are some inflections for the verb "to eat," which has the root *tabe-*.

(6) a. tabe-ru (eat) present/dictionary form

b. tabe-ta (ate) past

c. tabe-(a)nai (not eat) negation

d. tabe-(i)te iru (is eating) progressive[1]

[1] The abbreviated V-*teru*/-*teta* forms are used as colloquial expressions in Adult Japanese.

(i) Tabe-te-ru/-ta
eat-Asp-Pres/-Past

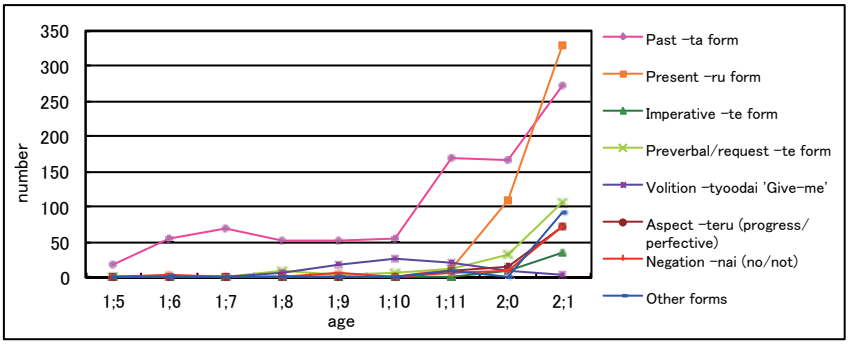
'(I) have/had eaten.' / '(I) am/was eating.'

e. tabe-te (eat) imperative

The verb stem *tabe-* (to eat) is followed by the present-/past-tense morphemes as in (6a-b), and it is followed by the aspectual morpheme *-te-i* to indicate either an ongoing process or a result state of the event as in (6d). For request or imperative, the *-te* form is employed as in (6e).

The conjugations in Japanese are acquired at an early stage, at around the beginning of age two. The numbers of each verbal forms in Sumihare (Noji 1973–1977) are shown in Figure 1.

Figure 1: Frequency of verbal forms in Sumihare's corpus



Murasugi, Fuji and Hashimoto (2007), Murasugi and Fuji (2008a, b) and Murasugi, Nakatani and Fuji (2010), based on the corpus analysis of Sumihare (CHILDES) and the longitudinal study with Yuta, a Japanese-speaking child, argue that there is a stage of RIAs in Japanese acquisition. According to them, some of the typical properties of RIs given in (3) are also observed in Japanese in early non-finite verbal forms: (i) T-related (e.g., Nominative Case and copula) and C-related items are not observed with the early non-finite verbs, and tense is underspecified, (ii) the past-tense morpheme is not found with adjectives (i.e., only present-tensed adjectives are produced), (iii) Verb-*ta* forms (past-tensed verb forms) are produced to describe an on-going activity, (iv) Verb-*ta* forms (past-tensed verb forms) are used in matrix clauses for the irrealis or volition meaning (Modal Reference Effects (=MRE)), (v) Verb-*ta* forms are restricted to event-denoting predicates, and (vi) no merger of heads inside the verbal projection are observed at the RIA stages Phillips (1995) proposes.

Sumihare, for example, at around 1;06 through 1;11, used the Verb-*ta* form in a different way from adults, semantically denoting the meaning of volition (desire) or request.

(7) a. Atti Atti Atti i-*ta* (1;06) (irrealis/volition) (Adult form: ik-u/ik-e)
there there there go-TA

'I want to go there. / Go there.'

b. Tii si-*ta* (1;07) (irrealis/volition) (Adult form: si-ta-i)
onomatopoeia (pee) do-TA

'I want to pee.'

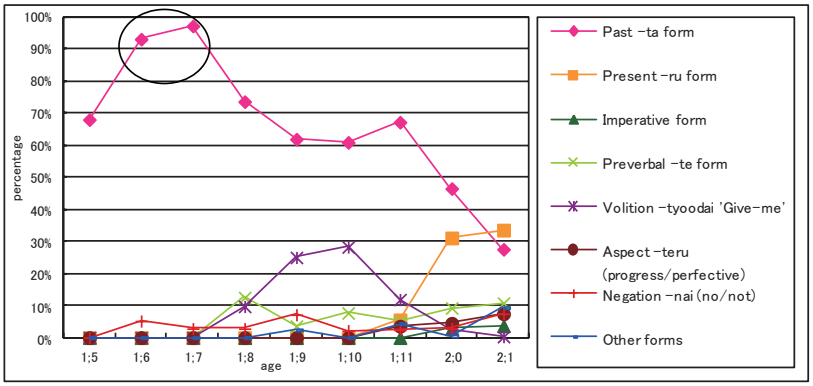
c. Baba pai-*ta* (1;08) (request) (Adult form: pai-si-te)
mud onomatopoeia (throw away)-TA

'Throw (the mud) away.'

Noji (the observer) describes that *i-ta* in (7a)[2] means *ik-u* (go-Pres), and states, "Sumihare uttered *i-ta* as he could not say *ik-u*" (Noji 1973–1977 I: 195). Noji also writes important comments for (7b), which convinces us of the Modal Reference Effects at the early stage of Japanese acquisition: Sumihare used *tii-si-ta* in a volition context when he wanted to pee. As for (7c), Sumihare produced *pai-ta*, attaching *-ta* on the onomatopoeia *pai* (to throw away), in order to ask his mother to remove mud from a potato.

The percentage of V-*ta* forms decreases with age, as is clear from Figure 2. At 1;06-1;07, he used the V-*ta* form almost 100% of the time. RIAs are not "optional infinitives" in Japanese-type languages.

Figure 2: The overall proportion of verbal forms in Sumihare's corpus at each stage.



Parallel data are found in a longitudinal study with another Japanese-speaking child, Yuta, as in (8) (Nakatani and Murasugi 2009).

(8) a. Ai-*ta* Ai-*ta* (1;07.1) (irrealis/volition) (Adult form: ake-te)
open-TA openPast

'I want to open this cabinet./ Open this cabinet.'

[2] The context for (7a) is the following: Sumihare's father (Noji, the observer) went out for a walk with Sumihare on his back. Noji tried to go back home, but Sumihare pointed to a different direction and produced "atti (there)" twice. Sumihare got frustrated and said, "atti i-ta (there go-Past)=(Literal meaning: I went, Intended meaning: I wanna go there)" angrily again.

b. Hait-*ta* Hait-*ta* (1;07.16) (volition) (Adult form: ire-tai)
enter-TA enter-TA

'I want to put this notebook into this bag.'

c. Oti-*ta* Otyoto(=Osoto) Oti-*ta* (1;07.13) (progressive)
drop-TA outside drop-TA(Adult form: otosi-teiru)

'I am putting this doll out outside.'

d. Oti-*ta* Oti-*ta* Oti-*ta* (1;07.5) (result) (Adult form: oti-teiru)
fall-TA fall-TA fall-TA

'A container of the video tape is lying there.'

The empirical evidence that V-*ta* forms, but not the other verbal forms such as present-tensed forms, are consistently used by the very young children under two to denote intentional meaning exemplified in (8a) and (8b) and extensional meaning exemplified in (8c) and (8d), suggests that the verbal conjugation, i.e., the merger of V and inflection, is not yet available then. This is the stage where a default morphological form in the target language is used as the first verbal form by a child.

Then, why is it the case that V-*ta* form is chosen as the RIA in Japanese by different children out of several inflected forms, despite the fact that each child receives different input? Here arises a bridge between child language and syntactic theory. Murasugi (2009) proposes that V-*ta* is the default infinitive form in both child and adult Japanese.

Cinque (2004) and Kawai (2006), for adult Syntax, propose that there are non-finite "surrogate" verbs that look like finite verbs, and the surrogate forms are derived by an operation to make the verbal stems well-formed morphological words in the adult grammar of Salentino/Serbo-Croatian and Japanese, respectively. Furthermore, there is evidence that the past-tense form, V-*ta,* which children pick as an RIA is most unmarked among the possible forms in Japanese.[3]

Two conjuncts unspecified for tense, for example, are conjoined with -*ta* forms as in (9a-b), and -*ta* forms can be used for future as in (10a-b) and with irrealis meaning as well, as exemplified in (10c).

(9) a. Tabe-**ta** ri non-**da** ri si-yoo/su-ru/si-ta
eat-TA drink-TA let's do/do-Pres/do-Past

'We eat/ate, and we drink/drank.'

[3] Non-finite verb forms are found in the embedded clauses in Adult Japanese. The past verbal inflection -*ta* lacks tense interpretation (but it is rather aspectual) in such relative clauses as "*yude-ta tamago*" (boil-past egg, meaning boiled egg (property reading)) in Adult Japanese.

b. It-**ta** ri ki-**ta** ri de taihen da/dat-ta
go-TA come-TA for troublesome is /was

'It is/was troublesome to go back and forth.'

(10) a. Asu-wa nani-o suru-no-dat-**ta**-ka-na?
tomorrow-Top what-Acc do-Nom-Cop-TA-C-Speech Act

'What am I going to do tomorrow?'

b. Sooda! Asu-wa paatii-dat-**ta**!
so-Cop Tomorrow-Top party-Cop-TA

'Aha! Tomorrow is a party!'

c. Mosimo watasi-ga ie-o tate-ru/-**ta** nara tiisana
if I-Nom house-Acc build-pres/TA then small
ie-o tate-ru/-ta (deshoo)
house-Acc build-pres/-TA (would)

'If I built a house, I would build a tiny one.'

Furthermore, just like infinitives in Italian (Rizzi 1993/1994), Japanese V-*ta* forms can be used as non-finite surrogate forms to express strong imperatives as shown in (11).

(11) a. Partire immediatamente!
go immediately (Rizzi 1993/1994)

b. Sassato Kaet-**ta**! Kaet-**ta**!
immediately go back-TA go back-TA

'Go back immediately.'

Thus, the *ta*-form seems function as a non-finite form as well as a past-tense form in adult Japanese. Children, without being taught by caretakers, even at one year old, choose the non-finite V-*ta* form as the surrogate form, attaching a "default" morpheme *ta* to the verb stem, before they fully acquire the conjugation system of the verbs.

Suppose that the unmarked surrogate form in Japanese is the non-finite V-*ta* form in adult Japanese. The agglutinative language-speaking children, even at the age of one, know the morphological property that verbal stems **cannot** stand **without** tense/aspect morphemes in their target language. And when Tense Phrase is not projected, the unmarked verbal suffix(es) is (are) chosen for the surrogate form(s), i.e., the RIA(s).

2. 3. Typology in Root Infinitives Revisited

There are in fact a lot of important cross-linguistic studies reporting that very young children produce verbs which appear to be finite, but are, in fact, non-finite. For example, as

shown in (12), Kim and Phillips (1998) find that Korean-speaking children, at the beginning of age two, attach a mood marker *-e* and the form is used in the full range of environments almost 100 percent just like Japanese *-ta*. According to Kim and Phillips (1998), in adult Korean, *-e* functions as a default mood marker. And their subject uses the Verb+*e* form in all contexts, even in contexts where the V-*e* form is not allowed in the adult Korean.[4]

(12) Korean RIAs: Stem + Mood particle *-e(/a)* form (Kim and Phillips 1998)

a. mek-e emma (2 yrs) (adult form: *mek-ca* (eat-Propositive))
eat-Decl mommy

'Let's eat, Mommy.'

b. ayki pwo-a (2 yrs) (adult form: *pwo-l-kkeya* (look-Presumptive))
baby look-Decl

'Baby (I) will look at it.'

In (12a) instead of the propositive morpheme, and in (12b) instead of the presumptive morpheme, *a(e)* is used. Just like Japanese, T-related (e.g., Nominative Case) and C-related items are <u>not</u> observed with the early non-finite verbs, and tense is underspecified. Table 3 summarizes the child languages that have what we call "the surrogate verbs".

Table 3: Child languages that have Surrogate Infinitives

	±bare stem	Forms	Source
Italian	−	Imperative form	Salustri and Hyams (2003, 2006)
Kuwaiti Arabic	−	Masculine imperative form	Aljenaie (2000)
Spanish	−	3rd person singular form	Grinstead (1994), Pratt and Grinstead (2007)
Catalan	−	3rd person singular form	Grinstead (1994), Torrens (1995)
Romanian	−	Verb+Past participle form	Nicoleta (2006)
Greek	−	Bare perfective form	Varlokosta, Vainikka and Rohrbacher (1998), Hyams (2005)
Turkish	−	Verb+*-di* (Past tense marker)	Aksu-Koç and Ketrez (2003)
K'iche' Maya	−	Stem+*ch/ik* (sentence terminator)	Pye (2001)
Korean	−	Stem+Mood particle *e(/a)* form	Kim and Phillips (1998)

For example, Arabic is a synthetic language with rich bound morphology. As shown in (13),

[4] See Murasugi and Fuji (2008a) for the details.

Aljenaie (2000) finds that Kuwaiti Arabic-speaking children at around the age of two typically produce verbs which lack present and past tense, and mark the stem with another inflection.

(13) Kuwaiti Arabic ([-bare stem]) RIAs: Masculine imperative form
Eh xalis (1;11-2;05) (adult form: *xalis-at* (finish-3f))
yes, finished

'Yes, it is finished.' (Aljenaie 2000)

Children never leave a verb uninflected as it does not constitute a well-formed word in Kuwaiti Arabic, but alternatively, children choose a default masculine imperative form as the surrogate verb form. Many children, who speak the languages whose verb stems cannot stand alone, produce surrogate verbs at around late one or very early two years old. These children consistently use the default "apparently conjugated" infinitive form during the RIA period.

Note here that RIAs with the so-called "surrogate infinitives" are found at around age one, much earlier than RIs are found in European languages, and the non-finite form is not optionally used either. The non-finite form is initially (at around 1;06-1;07) used 100% of the time in a full range of environments, and there is no correlation between null subjects and non-finite verb forms in Japanese and Korean, for example, unlike the case of European RIs.

The sharp contrast indicates that the so-called "Root Infinitive (Analogue) stage" is actually twofold: tense-truncated stage and tense-unspecified stage. The RI(A)s found before two are the default verb forms in the target language, and they are used either when Tense Phrase is not projected as the Truncation Hypothesis (Rizzi 1993/1994) predicts or when there is no functional categories as Radford (1990, 1991) and Galasso (2011) propose.[5] In fact, Galasso (2011) finds that the stage where D is missing (as in **Jim book* (=Jim's book)) comes before the Root Infinitive stage where T is optionally morphologically realized and non-nominative subjects appear in the subject position (as in **Her eat it* (She eats it.)).

RIAs found at a later stage after two correspond to the so-called Optional Infinitives. Optional Infinitives, the infinitives optionally used in the matrix clauses, are produced when features in Tense and Agreement are underspecified as ATOM (Schütze and Wexler 1996) predicts. In fact, just like English-speaking children, children speaking Japanese[6], for example, also optionally mark the subject of the sentence "erroneously" with genitive or dative after the verbal conjugations are acquired after two or so, and this is the stage observed

[5] Rizzi (1993/1994) presents "the truncation model", under which very young children may "stop early" as they are building up the phrase structure. Adults build their trees all the way to CP as a root, but children might not.

[6] See Radford (1990, 1999) and Galasso (2011) for the detailed analysis of non-nominative subjects in Child English. And see Murasugi and Watanabe (2009), Sawada, Murasugi and Fuji (2010) and Sawada and Murasugi (2011) for the analysis of non-nominative subjects in child Japanese. See also Mahajan (2004) for the syntax of non-nominative subjects.

in a lot of languages.[7]

2.4. Imperatives (Bare Verbs) in Child Chinese

The discussion so far indicates that if a language L has verbs whose stem cannot stand alone, children speaking L would produce the "surrogate infinitival" forms (e.g., as in Japanese) or infinitival form (e.g., as in Italian). Then, what about an isolating pro-drop, or more precisely, isolating argument-drop language, Chinese? Adult Chinese is an isolating language which does not have the so-called "infinitives". Do Chinese-speaking children go through the RIA stage? If so, which form do Chinese-speaking children use as their RIA?

Given the argument so far, we would predict that Chinese-speaking children would use the bare forms as the RIAs. In what follows, we will present a piece of evidence to indicate that the prediction might be accurate.

RI(A) phenomenon is very much related to the imperative. In fact, the bare stem of the verb in English, the Japanese V-*ta*, and infinitives in European languages are generally used as imperatives as well. And there are a lot of cross-linguistic studies reporting that the first non-finite verbal form children produce is imperative.

Salustri and Hyams (2003) observe that the proportion of imperatives is significantly higher than that of RIs. According to Salustri and Hyams (2003, 2006), Italian-speaking children begin using imperatives before the age of 2, and the verbs have appropriate morphology.

(14) dammi! (1;10)
give-to me$_{cl}$

'give it to me.' (Salustri and Hyams 2003)

There are cases where two forms are observed even in a single language as RIs. For instance, Bar-Shalom and Snyder (2001) report that children speaking Russian produce two forms of RIs: infinitives and imperatives. Dutch has been considered a typical RI language, but still, there are some mysterious descriptions. As shown in (15), Wijnen, Kempen and Gillis (2001) report that verbal forms resembling imperatives are found, in addition to the infinitive forms, at the early two-word stage. If this is the case, then Dutch-speaking children

[7] The absence of agreement is connected with the parameter of argument-drop (Saito (2007), Takahashi (in press)). Japanese is a language that allows argument ellipsis, and argument ellipsis in Japanese is proposed to arise from the absence of overt agreement. Mamoru Saito (p.c.) suggested a possibility that when the agreement system is not fully acquired at around two, the English-speaking children may allow argument ellipsis as well, just like Japanese. His suggestion may naturally explain the well-known empirical fact that robust null subjects are observed at the stage of "Root Infinitives" when the features of Tense and Agreement are not fully specified, and the subject NPs are marked with either nominative, genitive or dative optionally at around two in a lot of languages including English.

produce the imperative forms as well as the infinitive forms as their first verbs.

(15) "…Starting with the early two-word stage, forms resembling imperatives were discarded from the analyses, as it is unclear whether they are finite or non-finite." (Wijnen, Kempen and Gillis 2001)

The findings independently obtained from Russian, Italian and Dutch given above may not be coincidental. The very early non-finite verbs do not necessarily appear in a single form per language. Furthermore, the imperative forms, it seems, are chosen as the RIAs in more than a few languages.

Lillo-Martin and Quadros (2009) also argue that imperative forms are RIAs in American Sign Language (ASL) and Brazilian Sign Language (LSB). These languages have both agreeing verbs which move from one location to another associated with their arguments, and plain verbs which do not require modification to indicate the subject or the object. Lillo-Martin and Quadros (2009) argue that children produce notably more imperatives with agreeing verbs than with plain verbs, and further, that the ratio of imperatives is quite high. Grinstead (1998), Bel (2001) and Montrul (2004) find that imperatives are quite frequent in the early stage and decrease over time in Spanish and Catalan. In child Hungarian and Slovenian, the imperative forms are reported to start out very high and decrease with age, too (Londe 2004, Rus 2004).

As for Chinese, Chien (2009), based on the corpus analysis of two children (1;9-3;1, 1;11-3;0) and two adults from Tsing-Hua Mandarin Child Language Corpus, argues that children speaking Mandarin use imperative forms as RIAs. The imperative RIA is exemplified in (16):

(16) a. (ni) qu chi mian-bao (2;05)
(you) go eat bread

'You go to eat the bread.'
(Context: The child (=speaker) asks the adult to eat the bread.)

b. (ni) yong na ge he cha (2;06)
(you) use that CL drink tea

'You use the one to drink tea.'
(Context: The child (=speaker) asks the adult to use that cup to drink tea.)

c. Ni bao ta (2;05)
you hold it

'You hold it.'
(Context: The child (=speaker) asks the adult to hold a toy.)

d. Ni qian ge-ge (2;05)
You pull along brother

'You pull along my brother.'
(Context: The child (=speaker) asks the adult to pull along his/her brother.)

Chien's (2009) finding has striking parallels with Salustri and Hyams' (2003, 2006) proposal that Italian RIAs are imperatives. The evidence is elicited based on the criterion given in (17):

(17) a. In null subject languages imperatives will occur significantly more often in child language than in adult language.

b. In child language imperatives will occur significantly more often in the null subject languages than in the RI languages.

(Salustri and Hyams 2003, 2006)

Chien (2009) finds that the frequency of imperatives in child Mandarin is higher than the frequency of imperatives in the adult speech, and argues that the results obtained in her study are consistent with those of Salustri and Hyams' (2003, 2006). According to Salustri and Hyams (2003, 2006), Italian-speaking adults use only about 5.6% imperative forms; while Italian-speaking children use about 16.4% to 31.1% imperative forms (and use only 0% to 2.8% infinitive forms). In contrast, in German, a typical RI language, adults use 35.6% imperatives, and children use about 10% imperative. Chien's (2009) data is basically parallel with Salustri and Hyams' (2003). For example, according to Chien's (2009) counting, Mandarin-speaking adults use only about 10% imperative; while a Mandarin-speaking child, at 2;5, use about 47% imperatives. A closer examination of Chien's (2009) findings indicates that the contrast between child and adult imperatives is much more salient in Chinese than the Italian case. For a Mandarin-speaking child at 1;11, her study shows that 60% of the utterances is in imperative form. Thus, just like Salustri and Hyams (2003, 2006), Chien's (2009) finding suggests that there is a RIA stage in Chinese, and the form is imperative in Mandarin Chinese.

Now, given Chien's (2009) finding, we predict that the very young children producing imperatives as their RIAs would produce the strings that lack or are underspecified with tense. And there is a piece of evidence to suggest that this might be correct.

Lin (2008) argues that there is a finite and non-finite contrast in adult Mandarin. According to Lin (2006, 2008), epistemic and obligation modals take a finite TP complement and can only appear in finite contexts. By contrast, future and other types of root modals take a non-finite TP complement and can occur in finite and non-finite clauses.[8] He argues that epistemic modals always scope over *le* since *le* can be licensed within their finite TP

[8] As a result, Lin (2006) proposes that modals that take finite TP must precede modals that take a non-finite TP, and Lin thereby sets up the following hierarchy of modals in Mandarin Chinese.

(i) Necessity > Possibility/Obligation > Future > Ability/Permission/Volition

complements. Conversely, root modals always scope under *le* because *le* cannot be licensed within their non-finite TP complements. If *le* is to appear, it must be generated in the matrix Asp and takes the modal verb as its complement. See (18) (Lin 2006).

(18) a. Zhangsan$_i$ T_F [$_{AspP}$ [$_{VP}$ keneng [$_{TP}$ t$_i$ T_F [$_{AspP}$ [$_{VP}$ qu Taipei] le]]] Ø]
Zhangsan likely go Taipei Prf Stc

'It is likely that Zhangsan has gone to Taipei.'

b. Zhangsan$_i$ T_F [$_{AspP}$ [$_{VP}$ nenggou [$_{TP}$ PRO T_{NF} [$_{AspP}$ [$_{VP}$ qu Taipei] Ø]]] le]
Zhangsan able go Taipei Stc Prf

'Zhangsan has (become) able to go to Taipei.'

What crucially matters for the argument here is the fact that the sentence-final particles *le* (and the progressive aspect marker *zai,* according to Lin (2008)) in adult Mandarin distinguishes finite sentences from non-finite ones. Given the adult grammar, the perfect sentence particle *le* (and *zai*) is predicted to be (at least optionally) absent/underspecified at the stage of RIAs in child Mandarin.

Liu (2009), interestingly enough, observes that Mandarin-speaking children drop the perfective sentence particle *le* at a very early stage of language acquisition. HY (1;09), for example, dropped *le* in the obligatory context as shown in (19). In (19), the child dropped *le* even when repeating what his mother has said to him.

(19) Mom: Xie huir, lei le
rest a-bit tired LE

'Let's rest a bit; you are tired.'

HY (1;09): Xie huir, lei Ø

A similar example in (20) in found in the production of BB (1;10).

(20) BB (1;10) : Nainai qu nar Ø
grandma go where

'Where does Gramma go?'
(Intended meaning: 'Where did Gramma go?')

Mom: Ta nainai qu Hangzhou le.
his gramma go LE

'His Gramma went to Hangzhou.'

As shown in (21), the achievement verb *po* (to be torn, worn out) should be marked with the perfective marker *le* in adult Mandarin, but a child, LC (1;09), dropped it.

(21) LC (1;09) : po Ø
wear-out

'It's worn out.'

Needless to say, we need to confirm that the Mandarin-speaking children using imperatives as RIAs also drop *le* at the same time. We also need to examine carefully whether or not the typical RI(A) properties listed in (3) are observed in Mandarin Chinese. However, the fact that Mandarin-speaking children dominantly use imperatives (as RIAs) and drop the perfective marker *le* at the age of one suggests that there is an intermediate stage where the sentence is underspecified with or lack tense even in the acquisition of a typical argument-drop language, Mandarin Chinese.

To sum up the argument so far, we have addressed two questions: (i) "what" question, i.e., the descriptive adequacy of the claim that the pro-drop language-speaking children do not go through the RI(A) stage, and (ii) "how" question, i.e., why it is the case that there are cross-linguistic variations in the form or RIAs. We argued that children acquiring Japanese, Korean and Chinese, typical pro-drop or argument-drop languages, do go through the RI(A) stage. Non-finite verbs in finite (root) contexts are common in the very young child production cross-linguistically, and the early verbal forms in child languages reflect the core morphological properties of the adult grammar.

In particular, we argued that V-*ta*, or the past-tense/strong imperative form, V-*e*, or verb followed by the default mood, and the imperative form (or the bare form), are the RIAs in Japanese, Korean and Chinese, respectively. Child language reveals that Japanese and Korean are grouped together as the "surrogate"-RI(A)-type language just like Turkish and Kuwaiti-Arabic. Child Chinese, on the other hand, indicates that the RIA in Chinese is the imperative form just like Italian and ASL. Interestingly enough, the imperative form in Chinese is the bare form just like English and Swahili at the same time. Chinese-speaking children, thus, naturally pick up the imperative form, or the bare form of verbs as their first verb, i.e., an RIA.

3. The Truncation Model

Then, what are Root Infinitives and Root Infinitive Analogues? What does it exactly mean that T in child grammar is not marked for tense or agreement? The findings discussed so far show the RIAs in Japanese, for example, are the verbs very young children produce when Tense element is missing. Japanese-speaking children under two, consistently, not optionally, produce just a single verb form, i.e., V-*ta* form. Just like other languages, no auxiliary-relative items or C-related items appear then. No nominative Case markers are produced either. The adverbials related to time such as *kinoo* (yesterday) are not used with the RIAs. These empirical facts lead us to conjecture that this is the stage where TP is missing. There are languages that do not project Tense such as Dravidian languages (Amritavalli and Jayaseelan 2005). According to Amritavalli and Jayaseelan (2005), the tense morphology that

appears on verbs in some clauses is more appropriately labeled aspect.

At around two, in contrast, children speaking Japanese start producing several conjugated verb forms as well as "erroneous" genitive/dative subjects just like English-speaking children do. At this stage, non-nominative subjects optionally appear in the subject position (e.g., **Her eat it* (She eats it.) in English). Just like English-speaking children, children speaking Japanese, for example, optionally mark the subject of the sentence "erroneously" with genitive or dative. Interestingly enough, this stage is observed in a lot of languages.

The sharp contrast found between the two phases of "Root Infinitives" shown above indicates that the so-called "Root Infinitive (Analogue) stage" actually has two stages. A natural hypothesis for the first stage would be to suppose that the sentences in which the (default) verb is not tensed might be those where TP is missing in the child structure as Truncation Hypothesis (Rizzi 1993/1994), for example, predicts. And the RIAs found at a later stage after two would correspond to the so-called Optional Infinitives. Optional Infinitives, or the infinitives optionally used in the matrix clauses, are produced when T is there, but Tense and Agreement features are underspecified as ATOM (Schütze and Wexler 1996) predicts.

The former stage of RIA can be explained neatly by the Truncation Hypothesis. The Truncation Hypothesis (Rizzi 1993/1994) states that children's structures can be as complex as adult structures, but child grammar allows the option of optionally truncating structures. To be more concrete, adults build their phrase structure all the way to CP because CP is the root of all clauses, while children might build just a VP or an IP (TP) and stop. According to Rizzi (1993/1994), the axiom that "CP is the root of all clauses" is part of adult grammar. Children, however, lack the specific knowledge that every well-formed clause is CP in adult grammar (until the initial stage of Root Infinitive stage in our term ends). Until children "acquire" the axiom, they hypothesize that phrase structures can only go partway up to CP.

This hypothesis clearly explains why the children's non-finite verbs do not move to I (T): There is no place for them to move to. This would also explain why auxiliary-related items never occur with Root Infinitives, if we assume that auxiliary-related items start in I (T). Under the Truncation Hypothesis, we also expect that there are no elements above IP (TP) that are produced by the children at the Root Infinitive stage. If Root Infinitives are missing IP (TP), then they should be missing CP as well, and the hypothesis naturally explains why C-related items are not observed at the stage in question.

The Truncation Hypothesis can also account for the licensing of null subjects in child grammar. Root Infinitives are likely to occur with null subjects because the infinitive is a non-finite form, which lacks Tense, and hence it can license null subjects of the type PRO.

Furthermore, we conjecture that the Truncation Hypothesis can also elegantly explain the reason why English-speaking children go through an early stage of acquisition during which

subjects are base-generated within VP and may optionally stay in their original position located internal to the predicate (Déprez and Pierce 1993).

It is very well known that English-speaking children, at around the age of two, produce negative sentences in which negative element occurs to the left of the subject as shown below.

(22) a. No mommy doing. David turn. (2;00)

b. No lamb have it. No lamb have it. (2;00)

c. No lamb have a chair either (2;00)

d. No dog stay in the room . Don't dog stay in the room. (2;01)

e. No Leila have a turn. (2;01)

f. Never Mommy touch it. (2;01)

g. Not man up here on him head. (2;02)

h. No my play my puppet. Play my toys. (2;02)

Déprez and Pierce (1993) argue that the pre-sentential negative element (e.g., *no*, *never*, *not*) is an instance of sentential negation. According to Déprez and Pierce (1993), there is a parameter of nominative Case assignment, and young children start producing such examples as (22) based on the assumption that nominative Case may be assigned under government by Infl (rather than the assumption that nominative Case is assigned in the Spec-head relation with Infl). Thus, children produce the sentence-initial negative element as sentential negation as shown in (22). According to Déprez and Pierce's (1993) analysis, the structure children hypothesize for (22a) is (23):

(23) $[_{IP}$ ____ $[_{NegP}$ no (negative element) $[_{VP}$ mommy doing]]]

Then, why is it the case that subject remains in the VP-internal position in child grammar? In the adult grammar, the arguments of the verb appear within the Verb Phrase but they may be forced to leave that position by different principles of grammar. If the principles are part of Universal Grammar (UG), then, we expect that the principles should be applied once the sentence in question (meeting the theta theory) is produced. However, children produce subjects VP-internally without raising it to the Spec of IP (TP).

Given the UG, a possible explanation for the acquisition stage of VP-internal subject in child grammar would be that there is no position for the subject, which is VP-internally base-generated, to move to. Children start producing subject in the VP-internal position because there is no IP (TP).[9] This is because the phrase structure children hypothesize is

[9] For a different analysis, see Sugisaki (2013).

truncated then. Thus, during the stage where the phrase structure is truncated, children produce such sentences as (22).

This proposal is further supported by the fact that the verbs that children produce exemplified in (22) are bare forms, or Root Infinitives. The fact that children producing subjects VP-internally without raising it to the Spec of IP (TP) also produce RIs would support the hypothesis that there is no I (T) projection at the stage.

However, a detailed analysis of child Japanese indicates that the case might not be so simple. As we noted above, if Root Infinitives (Analogues) are missing IP (TP), then they should be missing the syntactic heads above IP (TP) as well. Japanese-speaking children, however, do produce sentence-final particles at the RIA stage. The sentence-final particle, which resides in the position up above the CP layer in the adult grammar is apparently added on the "truncated" structure. Observe, for instance, (24).

(24) Buuwa tui-ta **ne** **ne** (Sumihare, 1;09)
candle light-ta Sentence-final particle Sentence-final particle

Intended meaning: Please light the candle.
Literal meaning: The candle lit, didn't it?

(24) is quite interesting because the Japanese-speaking child Sumihare produces (i) the intransitive form *tuite* instead of the transitive form *tukete*, (ii) the V-*ta* form (RIA) instead of imperative form V-*te*, and crucially, (iii) the sentence-final particle *ne* followed by *tuita*, the RIA. Then, does such empirical evidence as (24) indicate that the RIA phenomenon cannot be explained by the Truncation Hypothesis? In the following section, based on the analysis that sentence-final particles are Speech Act heads, we argue that the early appearance of sentence-final particles does not constitute a counter example to the Truncation Hypothesis.

4. The Co-occurrence of Sentence-final Particles with RIAs

Sentence-final particles are in fact produced often at a very early stage of Japanese acquisition. Okubo (1967), based on her longitudinal study with a Japanese-speaking child, finds that sentence-final particles such as *ne* are acquired much earlier than Case particles such as *ga*. Murasugi and Fuji (2008b) report that the Modal Reference Effects of RIAs are often observed with the sentence-final particle *na* as shown in (25).

(25) a. Pan **naa** (1;05)
bread Sentence-final particle

'I want a piece of bread.'

b. Sii **si-ta** **naa** (1;07) (adult : **volition** *si-tai*)
pee do-TA Sentence-final particle

'(I) want to pee.'

c. Rii **na** **na** (1;07)
go down Sentence-final particle

'I want to go down.'
Context: Sumihare is on his father's shoulder. (Murasugi and Fuji 2008b)

The volition or modal in the early stage are expressed by the *-ta* form with the sentence-final particle *-na*.

There are languages that have particles (derived from a verb whose full lexical meaning has been lost) which are used to establish discourse relations between the speaker and the hearer (Haegeman and Hill 2011). According to Haegeman and Hill (2011), in West Flemish, a dialect of Dutch, for example, there are sentence-initial and sentence-final discourse markers, which encode the speaker's attitude with respect to the (content of the) speech act and/or with respect to the addressee. The discourse markers are optional in that an utterance remains grammatical even if they are removed, but their deletion results in a change in interpretation. There are some "rules" that sentence-final discourse markers in West Flemish obey.

First, sentence-final discourse markers in West Flemish co-occur only in a specified order. When sentence-final discourse marker *né* and *wè* co-occur, *né* must be to the right of *wè* shown in (26a) and (26b).

(26) a. Men artikel is gedoan wè né.

b. * Men artikel is gedoan né wè.
My paper is done

'My paper is finished.' (Haegeman 2010)

When sentence-final discourse markers *zè* co-occurs with *né* or *wè*, *né* follows *zè* as shown in (27a,b) but *wè* precedes *zè* as in (28a,b).

(27) a. Men artikel is gedoan zè né.

b. * Men artikel is gedoan né zè.

(28) a. Men artikel is gedoan wè zè.

b. * Men artikel is gedoan zè wè. (Haegeman 2010)

Second, West Flemish has just two positions for discourse markers. Though *né* can

co-occur with *zè* as in (27a) and with *wè* as in (26a), and though *wè* can also co-occur with *zè* as in (28a), the three discourse markers cannot co-occur, regardless of the order, as we can see in (29).

(29) a. * Men artikel is gedoan wè zè né.

b. Men artikel is gedoan wè zè. Né! (Haegeman 2010)

(29b) is acceptable because *né* is clearly set off from the preceding segment.

Sentence-final discourse markers in West Flemish are not clause typers, and they co-occur with clauses that are independently typed. Though some of them are insensitive to clause type, others are sensitive to the type of the sentence. For example, *zè* (and its variant *ghè*) co-occurs mainly with declaratives and with some imperatives. With regard to interrogatives, only rhetorical questions can co-occur with *zè*/*ghè*.

The properties found in West Flemish are shared by Japanese sentence-final particles. Japanese has sentence-initial and sentence-final discourse markers, such as *ne*, which encode the speaker's attitude with respect to the (content of the) speech act and/or with respect to the addressee. The discourse markers are optional in that an utterance remains grammatical even if they are removed, but their deletion results in a change in interpretation.

There are also "rules" that sentence-final discourse markers in Japanese obey just as in West Flemish. The sentence-final particles such as *ne*, *na*, and *yo*, among others, are pragmatic markers used to profile the speaker-hearer relationship in Japanese. The particles are involved in the licensing of vocatives. The initial vocative has an "appeal" or attention seeking function, aiming at establishing a discourse relation; the final vocative consolidates the already established relation of the speaker with an "addressee". Examples are shown below:

(30) a. **Nee** **Nee** Otoosan, torampu siyoo **yo** (Koko, 8;03)
NE NE Daddy card do-Vocative Sentence-final particle

'Hey, Daddy, let's play cards.'

b. Kono kootya-wa oisii **ne** (Koko, 8;03)
this tea -Top yummy-is NE

'This tea is tasty, isn't it?'

Just like West Flemish, the sentence-final particles display rigid ordering restrictions as shown in (31).

(31) a. Kobe-no pan-wa oisii yo ne/yo na.
Kobe-Gen bread-Top tasty

'Kobe's bread is tasty.'

b. *Kobe-no pan-wa oisii ne yo/na yo.

The sequences, *yone* and *yona*, are grammatical, but *neyo* or *nayo* are ungrammatical as shown in (31b). When sentence-final discourse markers *yo* and *ne* co-occur, *ne* must be to the right of *yo*.

Second, just like West Flemish, Japanese basically only has two positions for discourse markers. Though *yo* can co-occur with *ne* (32a) and with *na* (32b), the three discourse markers cannot co-occur, regardless of the order as we can see in (33):

(32) a. Taro-wa mikan -o taberu yo ne.
Taro-Top orange-Acc eat

b. Taro-wa mikan -o taberu yo na.
Taro-Top orange-Acc eat

(33) *Taro-wa mikan -o taberu yo ne na.
Taro-Top orange-Acc eat

'Taro eats oranges.'

(33) is only acceptable when *na* is clearly set off from the preceding segment.[10] Just like sentence-final discourse markers in West Flemish, Japanese sentence-final particles are basically not clause-typers either, and they co-occur with clauses that are independently typed. For example, *yo* co-occurs mainly with declaratives and imperatives.

Now, the important question to be addressed here is whether the discourse markers are part of the CP system or not. In fact, it has been pointed out that the property of the right periphery of Japanese parallels with that of left periphery in head-initial languages such as Italian in many respects (Saito 2009), and the discourse markers such as *ne*, *na*, and *yo*, all seem to reside outside the CP system.

According to Saito (2009), *to* is the complementizer that heads a Report Phrase, which expresses paraphrases or reports of direct discourse in the sense of Plann (1982); *ka* is a head of Force Phrase (ForceP), for questions. And *no* is the complementizer that heads a Finite Phrase, for propositions. The structure is schematized below.

[10] Three sentence-final particles are allowed only when *wa* comes first.

(i) Anata asita gakko-ni iku wa yo ne.
You tomorrow school-Dat go WA YO NE

'You are going to school tomorrow, aren't you?'

(34) a. [CP [CP… [CP… Finite (*no*)] Force (ka)] Report (to)]

b. [CP… [CP… [CP… [CP… Finite (no)] (Topic*)] Force (ka)] Report (to)]

c. [CP… [CP… [CP thematic topic [C'[CP [TP ...] Finite (no)] Topic]] Force (ka)] Report (to)]

And the discourse markers *ne*, *na*, and *yo* follow *ka*, which is the sentence-typer.

(35) a. [Force[Fin[TP Taroo-wa unagi-o taberu] no] ka] **ne**
-Top eel-Acc eat Finite Force Sentence-final particle

'I wonder whether or not Taro eats eels.'

b. [Force[Fin[TP Taroo-wa unagi-o taberu] no] ka] **na**

c. [Force[Fin[TP Taroo-wa unagi-o taberu] no] ka] **yo**

ForceP is a sentence typer, and if the sentence is interrogative, *ka* appears in the head of ForceP. As (35a-c) indicate, sentence-final particles follow *ka,* and this shows that the discourse markers are above ForceP at least. And children acquire such discourse markers as *ne* and *na* earlier than *no* or *ka*. Okada and Grinstead (2003), in fact, show that *ne* appears at 1;11, while *no* and *te* appear later in 2;02, and *ka* appears even later at 2;04, based on the corpus analysis of Aki (CHILDES).

Sumihare at 1;06, for example, produces *na* quite clearly when he tries to speak to the addressee, and the observer (Noji) states that it is around then that the social and communicative skills of the child becomes noticeable. *Ne* is also a discourse marker observed at a very early stage of Japanese acquisition. Sumihare, for example, distinguishes *ne* from *na* just like adults do: He employs *na* when he talks to himself, while he employs *ne* when he talks to the addressee who holds him, as the contrast between (36b) and (36c) indicates:

(36) a. …**ne** (1;07)
Sentence-final particle

'isn't it?' (Sumihare pronounces *ne* clearly.)

b. Tyun mien **naa** (talking to himself) (1;09)
the plane is-not-visible sentence-final particle

'(I) cannot see the plane.'

c. Tyun mien **ne** (talking to father, the addressee who holds him)(1;09)
the plane is-not-visible sentence-final particle

'(I) cannot see the plane.'

In fact, it has been noted by many researchers that some of the discourse markers are

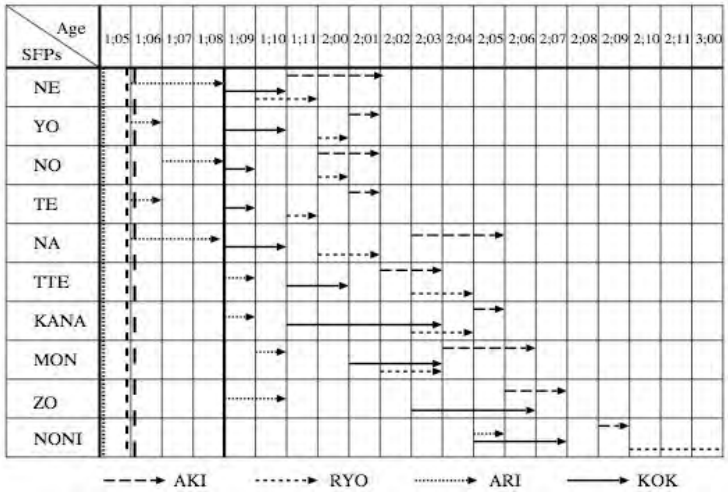
acquired at a very early stage of language acquisition. Shirai, Shirai and Furuta (1999), for instance, based on the corpus analysis of four Japanese monolingual children's longitudinal data (Aki 1;05-3;00, Ryo 1;03-3;00, Ari 1;06-3;00 and Kok 1;09-3;00 from CHILDES), observe that every child began to use sentence-final particles when their MLU (Mean Length of Utterances) was below 1.2 as shown in Table 4.

Table 4: Sentence-final particles each child began to produce (Shirai, Shirai and Furuta 1999)

Name	Age	MLU	SFPs
AKI	2;00	1.1	*ne, no*
RYO	1;10	1.1	*Ne*
ARI	1;06	1.2	*ne, yo, te, na*
KOK	1;09	1.1	*ne, no, yo, te, na*

Figure 3 shows when the four children came to use sentence-final particles and when they productively came to use them. The onset is marked by the root of an arrow, and the productive use is marked by the head.

Figure 3: The onset of sentence-final particles (Shirai, Shirai and Furuta 1999)



Here, most crucially, as shown in (37), the discourse markers are observed at the RIA Stage, before the full conjugation of the verbs appears in the production. The examples in (37) indicate that the discourse markers follow nominal elements, RIAs, and mimetic/ onomatopoeic expressions. Note here that *na* is used in the adult way as a separate item as shown in (37f) as well (just like *ne* in (36a)).

(37) a. Onbu **na** (1;08)
Hold-me-on-your back Sentence-final particle

'Please hold me on your back.'

b. Atti i-ta **na** (1;07) (volition) (talking to his mother, the addressee)
over there go-TA Sentence-final particle

'(I) want to go over there'

c. Pan **naa** (1;05)
bread Sentence-final particle

'I want a piece of bread.'

d. Sii **si-ta** **naa** (1;07) (adult : **volition** *si-tai*)
pee do-TA Sentence-final particle

'(I) want to pee.'

e. Rii **na** **na** (1;07)
go down Sentence-final particle

'I want to go down.'
Context: Sumihare is on his father's shoulder. (Murasugi and Fuji 2008b)

f. ….**na** (talking to his daddy) (Sumiahre, 1;05)

Now, the question is why it is the case that such sentence-final particles as *ne* and *na* follow any syntactic constituent so productively. Crucially, it is intriguing that the sentence-final particles are produced as separate items, i.e., *ne* and *na* follow null phrases (as (36a) and (37f)) in child Japanese.

Here, note that the difference between the discourse markers in adult West Flemish and adult Japanese resides in the fact that the former has them at the sentence-initial or final position only[11], but the latter allows the discourse markers to be attached basically on any syntactic constituent.

(38) Neko(-ga) **ne**, yane-kara **ne**, otita **ne**
Cat (-Nom) roof-from fell

'The cat fell from the roof.'

Japanese discourse markers can follow NPs, PPs, and VPs, and so on, as far as the structure constitutes a well-formed syntactic constituent. Then, the co-occurence of RIA with a sentence-final particle in child grammar would indicate that a discourse marker or a Speech

[11] Thanks to Lillian Haegeman (p.c.) for the information.

Act element can be preceded by the truncated element or a child's syntactic constituent, even if there is no T head, and even if there is no phonetically realized sentence.

If Speech Act elements are acquired earlier than TP and CP, then, as we noted before, we expect that the sentence-final particles are acquired earlier than complementizers. In fact, this predication is borne out. Although it is well-known that *no*, the head of FiniteP in the CP layer, is acquired at a very early stage of language acquisition, it appears in child production later than such discourse markers as *na* and *ne*.

(39) a. Nenne ta **noo** (Sumihare, 1;10)
sleep Past NO

'(I) am sleeping with my daddy.'

b. Katai **no** (Sumihare, 1;10)
is-hard NO

'(This candy) is (very) hard.'

c. Katai yo zya **no** (talking to his mother, the addressee) (1;10)
hard is NO

'(It) is very hard and difficult to take.'

d. Teen **no** (talking to his mother, the addressee) (1;10)
mimetic NO

(Context: sitting on the Kotatsu)

e. Tantan-wa? Tantan-wa, **no**, **no** (talking to his mother, the addressee) (1;10)
Tantan-top tantan-top NO NO

(Context: Putting a pencil on the floor near the window)

The observer Noji states that he does not understand the intended meaning of (39d) and (39e). However, the data at least show that *no* indicates the end point of the sentence. And they appear only after 1;10, much later than the stage where the discourse markers are produced. Furthermore, Sumihare produces such discourse markers as *ne* and *na* earlier than the head of ForceP *ka*, too. Exactly like what Okada and Grinstead (2003) find based on the corpus analysis of Aki (CHILDES), Sumihare starts producing *ka* at 2;03, much later than *ne* and *na*, and even after *no*.

Interestingly enough, sequences of two discourse markers (or sentence-final particles) such as *yo ne* start to appear a bit before *no* does in the production. Observe examples in (40).

(40) a. Atui yo ne (Sumihare, 1:09)
hot YO NE

'It is hot, isn't it?'

b. Hairan yo ne (Sumiare, 1;09)
dosn't fit YO NE

'(The feet) do not fit (in the socks).'

c. Oimo oiti yo ne. (Sunmiare, 1;10)
potato delicious YO NE

'The potatoes (are) delicious, aren't they?'

d. Toofu kita yo ne. (Sumihare, 1;11)
Tofu came YO NE

'A man selling Tofu came over, didn't he?'

At around the time children find out the nature of sentence-final particles, i.e., that more than one sentence-final particle can be attached to a phrase, the head of FinP and the verbal conjugations start to appear.

Given these descriptive findings, let us come back to our original question. Does the early appearance of the sentence-final particles constitute a counter example to the Truncation Hypothesis because the sentence-final particles are the uppermost element above CP? A detailed analysis of child Japanese indicates that it is not the case.

Japanese-speaking children do produce sentence-final particles at the RIA stage and the sentence-final particles look as if they are added on the "truncated" structures, or phases, as shown in (24), repeated below:

(41)(=(24)) Buuwa tui-ta **ne** **ne** (Sumihare, 1;09)
candle light-ta Sentence-final particle Sentence-final particle

Intended meaning: Please light the candle.
Literal meaning: The candle lit, didn't it?

However, given that sentence-final particles follow any syntactic constituent in adult Japanese, and given the fact that child discourse markers not only follow various constituents but also appear as separate items as shown in (36a) and (37f), the child structure of the sentence-final particles following such a truncated phrase as an RIA would be something like (42).

(42) [$_{XP}$ _____] ***ne/na***
X= Syntactic Constituent

XP is a well-formed syntactic constituent, and can be phonetically realized null in such an argument-drop language as Japanese. Children produce truncated sentences or a phonetically null form, followed by a discourse particle that links the speaker and the addressee. Tense Phrase is projected only at around the stage where two particles come to appear in a sequence as in (40) and several conjugation forms of verbs come to be used.

The analysis given above presupposes that the discourse markers or the elements above the CP layer are directly attached on the child RIAs. It should be mentioned here, however, that adult RIAs or tense-less phrases with strong speech act is somehow difficult to be selected by the discourse markers. In Japanese, the verb-*ta* form is RIA for both child grammar and adult grammar. Even in the adult grammar, V-*ta* forms, such as "*Kaetta! Kaetta!* (Go back! Go back!)" given in (11), for example, cannot be directly followed by such discourse markers as *ne* and *na*.

(43) a. Sassato Kaet-**ta**! Kaet-**ta**!
immediately go back-TA go back-TA

'Go back immediately.'

b. * Sassato Kaet-**ta** **ne/na**! Kaet-**ta** **ne/na**!
immediately go back-TA Sentence-Final Particle

'Go back immediately.'

It is quite intriguing that children, unlike adults, use such sentence-final particles as *ne* and *na* with RIA at the age of one as shown in (25). Given our analysis so far, the co-occurrence of the child RIA and the sentence-final particles would be explained naturally by assuming that children do not fully know the syntactic properties of the sentence-final particles at the stage yet, although they know the pragmatic properties associated with them.

Before closing this section, it might be worth mentioning that a cross-linguistic data in support of the analysis presented so far can be also found. The emergence of discourse markers at a very early stage of language acquisition is commonly observed in child Chinese. According to Yang (2010), for example, Chinese-speaking children start producing discourse markers (sentence-final particles) such as *a* at around the age of one.

(44) Qui a (1;04)
ball Discourse-marker

'It is the ball.'

The fact that the discourse markers are probably produced earlier than the RIA (the imperative form) and the tense/aspect marker *le* supports the analysis presented in this

paper.[12]

Children's phrase structures are truncated. However, the Truncation Hypothesis does not entail that young children do not know the semantic/pragmatic properties of the uppermost element in the phrase structure. The evidence from Japanese indicates that children in fact know the semantic/pragmatic properties of the discourse elements and use them just like adults even at the age of one. Just like a jigsaw puzzle, children would assemble the border pieces first to get a defined area to work in. Information regarding discourse relations can thus guide the child to identify the missing tense-related items between the Speech Act Phrase and the truncated structure. This leads us to suggest that "discourse bootstrapping" should be probably added to the child's toolkit.

5. Conclusion

In this paper, based on children's production of discourse markers and RIAs in Japanese and Chinese, we presented evidence for the Truncation Hypothesis proposed by Rizzi (1993/1994) for children's early syntactic structure.

We argued that Root Infinitives (RIs) and Root Infinitive Analogues (RIAs) are non-finite (infinitival) verbal forms which children at around one to two years of age use in matrix (root) clauses, where they are not possible in their adult grammar, and that there are two stages: (i) the stage where there is no T-projection, and (ii) the stage where TP is projected, but the features of Tense/Agreement are yet underspecified.

Note here that the forms of child RI(A)s *per se* are not different from adult ones. As Akmajian (1984) first drew attention to "mad magazine sentences," infinitive constructions are used in matrix contexts in adult English and adult Spanish, for example.

(45) a. Me go to that party?! I would never do such a thing! (English)

b. John go to the movies?! No way, man!

(46) Yo ir a esa fiesta?! Jamás! (Spanish) (Etxepare and Grohmann 2005)

Mad magazine sentences or adult RI(A)s consist of two overtly expressed parts: the Root Infinitive proper, orthographically indicated by '?!' (evoking a question-like exclamation), and the Coda (a further exclamation that seems to deny the truth value of the mad magazine sentences) (Etxepare and Grohmann 2005). Child Chinese RIAs are in fact imperatives in adult Chinese; child Japanese RIAs are strong imperatives (and past declaratives) in adult Japanese; child Korean RIAs are modal phrases in adult Korean. Child RIAs are possible "well-formed" verbs in the adult grammar.

[12] See Murasugi and Nakatani (2005, 2007) and Dejima, Nakatani and Murasugi (2009) for evidence based on their longitudinal studies that the properties of Speech Act Phrase are found even at the babbling stage in Japanese acquisition.

The very young children's use of non-finite verbs in root contexts is a universal phenomenon. Whether or not the target language is *pro*-drop or argument-drop, children universally go through the very early non-finite verb stage. Yet, there are morphological variations: RI(A)s can be infinitives, bare verbs, participles, or certain (surrogate) full forms. The morphological parameter that determines whether or not the stem can stand by itself is acquired at the very early stage of language acquisition. This finding indicates that even during the stage where the phrase structure is truncated, very young children know the morphological property of the target language. Without being directly taught by caretakers, children voluntarily express the intentional and extensional meanings by picking up their first verbal forms among the possible non-finite forms in their mother tongue. The early emergence of the morphological knowledge would constitute an important ground for the proposal of the inborn grammatical principles, parameters, and the Universal Grammar (Chomsky 1965, Huang 1982).

The only difference between child grammar and adult grammar is in that (i) the child root clause is not CP like adults', but the phrase structure may be truncated, as Rizzi (1993/1994) argues, at a very early stage of grammar acquisition until around two or so, and (ii) even after TP comes to be projected after the age of two, features in Tense/Agreement are underspecified initially, thereby genitive subjects or quirky subjects (which are not possible in the adult target grammar) are optionally used with the optional infinitives, as Schütze and Wexler (1996) suggest. With regard to the trigger for children to attain the adult axiom that "CP is the root of all clauses", we suggested in this paper that acquiring the possible selection of sentence-final particles might bootstrap the children's knowledge of the missing part in their syntactic structure.

The argument led us to a suggestion for the learnability theory. For children to acquire their mother tongue, "discourse bootstrapping" would be employed to acquire the full syntactic structure. Syntactic and semantic bootstrapping would be useful toolkits for children to acquire language in a bottom-up way, while discourse bootstrapping would be a useful toolkit for children to acquire the full syntactic structure in a top-down way.

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Chapter 4: Project Meetings

（研究報告会）

第一回研究会

開催日時

平成 23 年 2 月 19 日　(土) 13:30～18:40

平成 23 年 2 月 20 日　(日) 10:00～11:50

開催場所

南山大学名古屋キャンパス Ｄ棟 3 階 Ｄ34 教室

発表テーマ・発表者氏名

（１）“Constraints on Argument Ellipsis in Child Japanese” 杉崎鉱司 （三重大学）

（２）「主節不定詞としてのオノマトペ」中谷友美・村杉恵子（南山大学）

（３）「幼児の言語獲得からみる言語の多様性」村杉恵子 （南山大学）

（４）言語獲得討論

（５）“Parallelism for Argument Ellipsis”： 高橋大厚 （東北大学）

（６）「併合による格認可仮説の再考」齋藤衛 （南山大学）

（７）「日本語の所有者上昇について」岸本秀樹 （神戸大学）

第二回研究会

開催日時

平成 23 年 12 月 23 日　(金)

開催場所

神戸大学大学院人文学研究科

発表テーマ・発表者氏名

（１）“Acquisition of Argument Ellipsis” 高橋大厚（東北大学）

（２）「複合語形成パラメターの実在性について一縦断的観察によるアプローチー」中村友美（南山大学）

（３）「共同研究プロジェクトの方向性：“言語獲得と言語理論”」村杉恵子（南山大学）

（４）「幼児の統語構造から探る周辺領域の分化」村杉恵子、木戸康人（南山大学）

（５）「日本語の節の投射：相関等位節からみた場合」岸本秀樹（神戸大学）

（６）「幼児日本語に見られる『の』の分布と Finite Head」斎藤衛（南山大学）

（７）“Locality Constraints on *Wh*-questions in Child Japanese” 杉崎鉱司（三重大学）

国立国語研究所　理論・構造研究系プロジェクト研究成果合同発表会

開催日時

平成 24 年 2 月 19 日　(日) 10:00～17:00

開催場所

国立国語研究所 2 階講堂

発表

15:40-16:20　「幼児言語から探る文法のメカニズム」村杉恵子（南山大学）

ポスター発表　「日本語の節の投射：等位節と主節不定詞」岸本秀樹（神戸大学）

第三回研究会

開催日時

平成 24 年 3 月 7 日　(水) 10:00～18:00

開催場所

南山大学 L 棟 9 階大会議室

発表テーマ・発表者氏名

（1）「幼児日本語に見られる属格主語と Finite Head の性質」斎藤衛（南山大学）

（2）「日本語の節構造、語彙認可、および、主節不定節現象」岸本秀樹（神戸大学）

（3）「主節不定詞と談話不変化詞から探る幼児の文法構造」村杉恵子（南山大学）

（4）「普遍的制約の早期発現：日英語における移動現象の獲得から」杉崎鉱司（三重大学）

（5）「焦点標識の幼児による解釈について」佐野哲也（明治学院大学）

第四回研究会

開催日時

平成 24 年 10 月 31 日　(水) 10:00～18:00

開催場所

南山大学 L 棟 9 階大会議室

討論会：テーマ・議題提案者・コメンテーター

10:00-11:30「幼児の語彙的・統語的複合動詞の獲得について」

議題提案者：木戸康人（南山大学大学院生）

コメンテーター：Susan Fischer

13:00-15:00「日本語の統語的特徴について」

議題提案者：岩谷 悠馬，林 希朗，山本 晃之（南山大学大学院生）

コメンテーター：Susan Fischer

研究発表: 発表テーマ・発表者氏名

16:30-18:00 “Historical Change in Sign Languages” Susan Fischer (CUNY Graduate Center)

第五回研究会

開催日時

平成 24 年 12 月 23 日　(水) 10:00～18:00

開催場所

南山大学 L 棟 9 階大会議室

発表テーマ・発表者氏名

（１） “The Acquisition of Nominal Structure, Word Order and Referentiality in Chinese: Corpus and Experimental Findings” Thomas Hun-tak Lee and Zhuang Wu (Chinese University of Hong Kong)

（２） “On the Learnability of Japanese Scrambling” 杉崎鉱司（三重大学）

（３） “Cognitive Neuroscience of Linguistic Diversity – A View from an ERP Study on Japanese Honorific Processing” 酒井弘（広島大学）

（４） “On the Role of Selection in Syntactic Word Formation” 斎藤衛（南山大学）

（５） Comments on the Issues Presented in the Workshop. Thomas Hun-tak Lee (Chinese University of Hong Kong)

国立国語研究所　理論•構造研究系プロジェクト研究成果合同発表会

開催日時

平成 25 年 3 月 2 日　(土) 10:00～17:00

開催場所

国立国語研究所 2 階講堂

発表

10:30-11:00　「幼児の誤用からみる普遍文法」村杉恵子（南山大学）

ポスター発表　The Ban on Adjunct Ellipsis in Child Japanese 杉崎鉱司（三重大学）

第六回研究会

開催日時

平成 25 年 5 月 18 日　(土) 13:00～17:00

開催場所

南山大学 L 棟 9 階大会議室

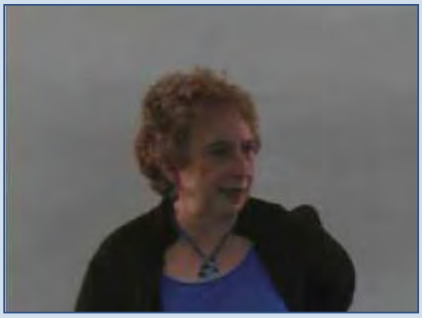
発表テーマ・発表者氏名

（１） “A Theory of Deletion and its Implication for Non-constituent Deletion” 後藤亘（三重大学）

（２） “The Layered Internal Structure of PP and N’-deletion within PPs” 高橋久子（三重大学）

（３） “Case and Labeling in a Language without φ-feature Agreement” 斎藤衛（南山大学）

第一回研究会



第四回研究会

第五回研究会

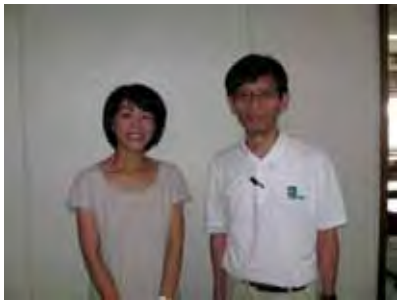
Portraits of the Project Members

Kensuke Takita, Keiko Murasugi, Tomohiro Fujii
Hideki Kishimoto, Koji Sugisaki, (Zeljiko Boskovic,) Mamoru Saito, Daiko Takahashi

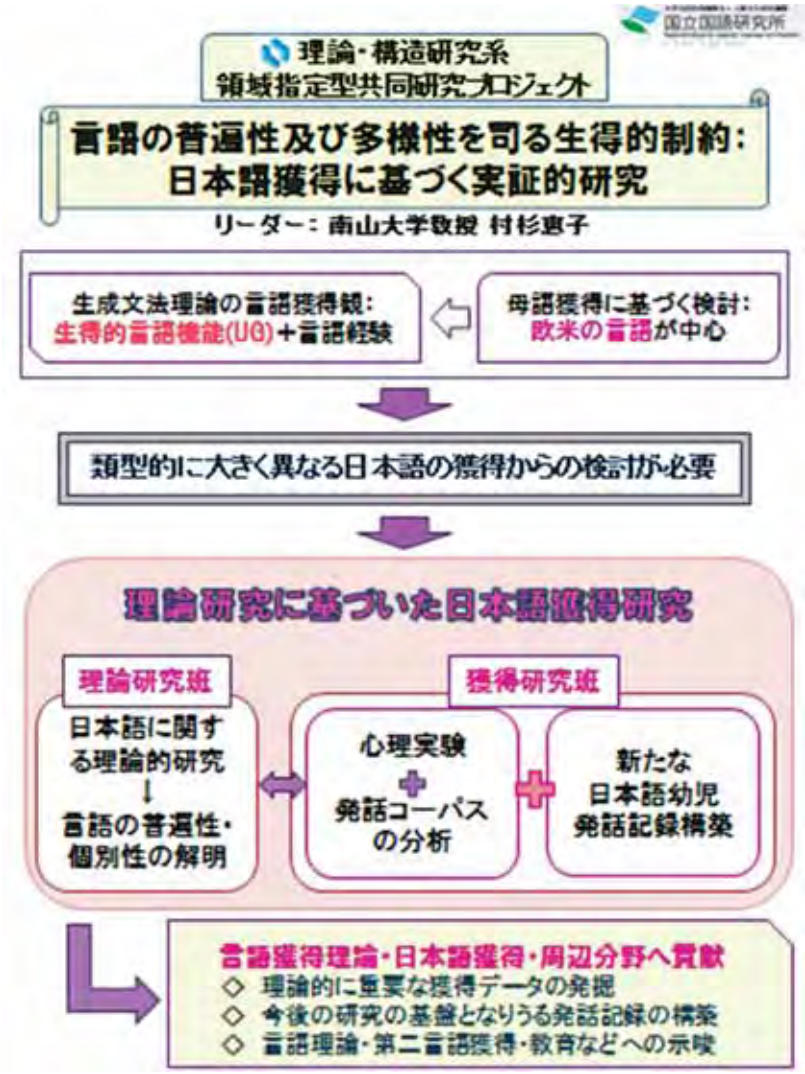
Hiroaki Tada

Yoichi Miyamoto

Yuji Takano



Tomomi Nakatani （日本語を母語とする幼児の発話記録作成者), Haruo Kubozono



大学共同利用機関法人　人間文化研究機構　国立国語研究所
理論・構造研究系　領域指定型プロジェクト

言語の普遍性及び多様性を司る生得的制約：日本語獲得に基づく実証研究
Linguistic Variations within the Confines of Language Faculty: Studies in the Acquisition of Japanese and Parametric Syntax

発行日　2013 年 9 月
編集・発行　南山大学　村杉恵子
(プロジェクトリーダー)