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.

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Nanzan Linguistics 6, 47-78

(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)

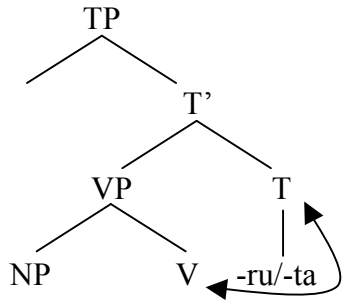
'(Please) eat.'

d. tabe-ta-i
eat-want-Pres

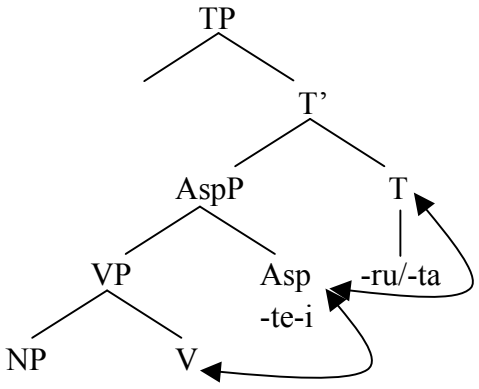
'(I) want to eat.'

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.'

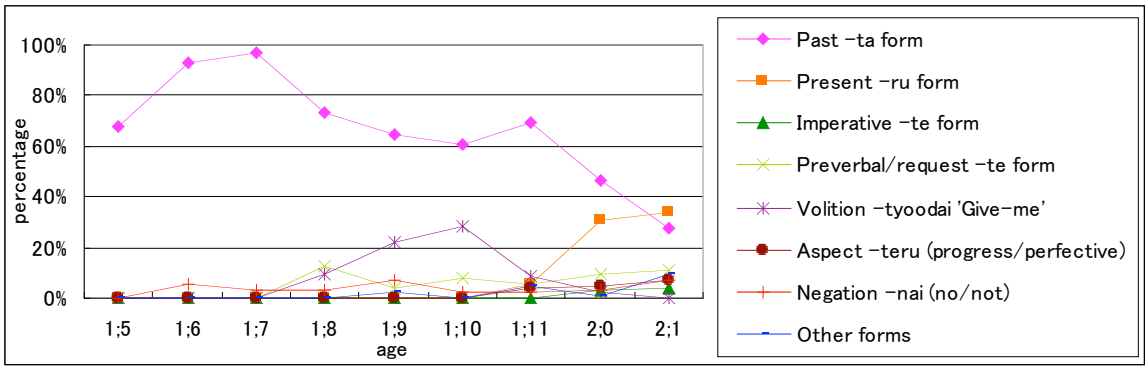
c. Meen-ta. (1;7) (irrealis) (adult form: meen to i-u)
"meen"(onomatopoeia)-Past

'(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.

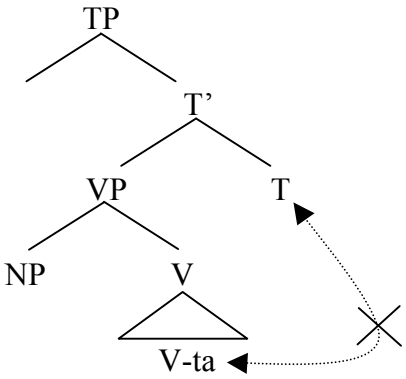
The percentage of the V-*ta* form decreases with age. At 1;6-1;7, he predominantly used the V-*ta* form almost 100% of the time.

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.

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[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.'

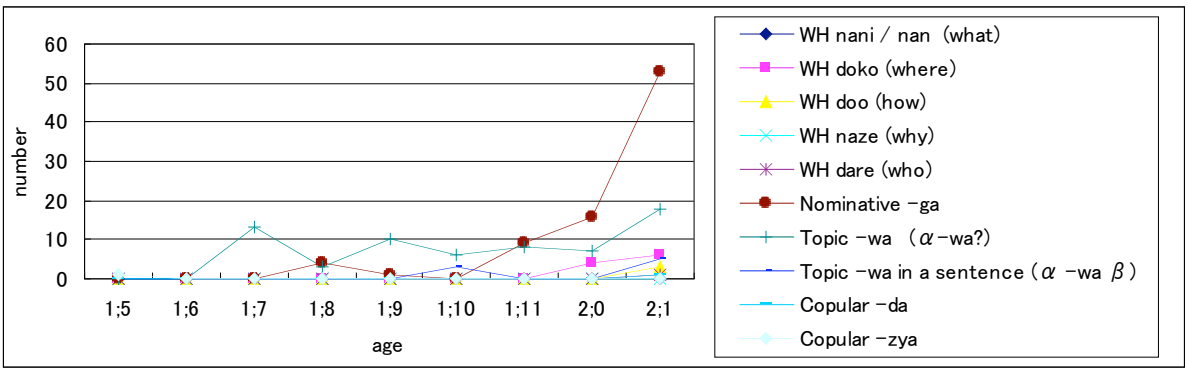
The appropriate form to refer to the result state in (20a) would be *si-te-i-ru* in adult grammar, but Sumihare employed the *-ta* form instead in order to inform his mother of the situation. In (20b), *-ta*, instead of *-te-i-ru*, is attached to the onomatopoeia *maimai* (onomatopoeia, meaning go around) 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

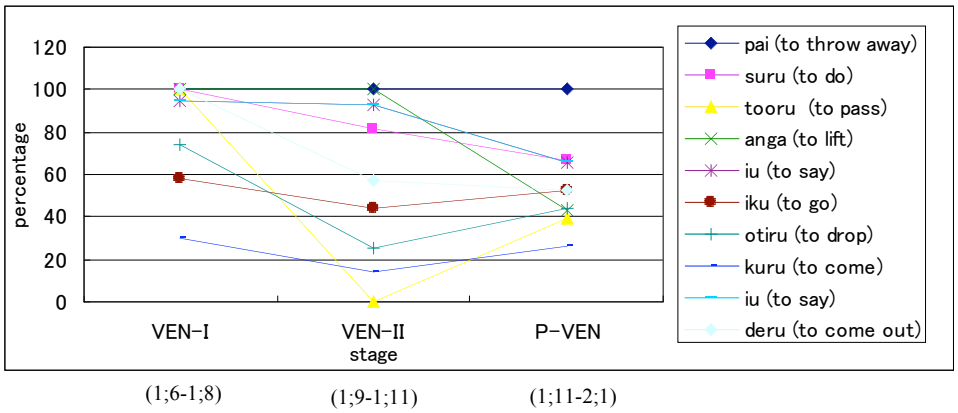
[9] The topic marker -*wa* was produced at a very early stage, only in the form of NP-*wa*, without ever being followed by verbal predicates.

[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.

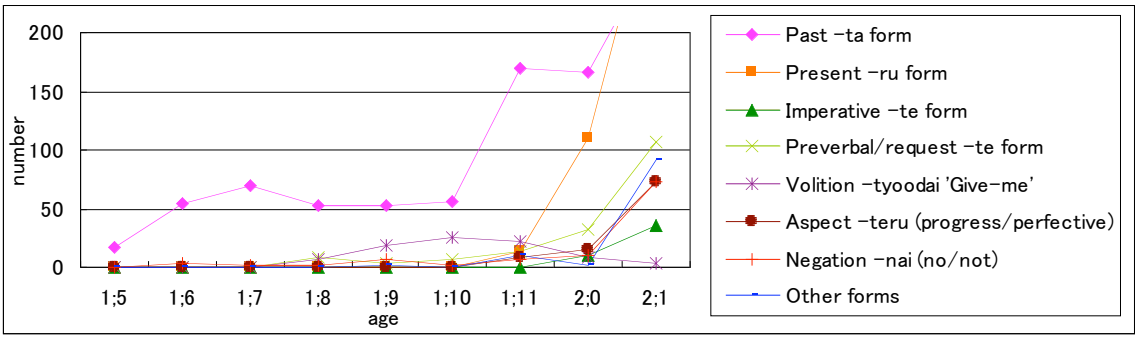
(22) a. Wanwan tyan si-teru. (1;11) (result state)
dog sit do-Asp

'A dog is sitting (here).'

b. Buranko ti-teru. (2;0) (progressive)
swing do-Asp

'(A scarecrow) is swinging.'

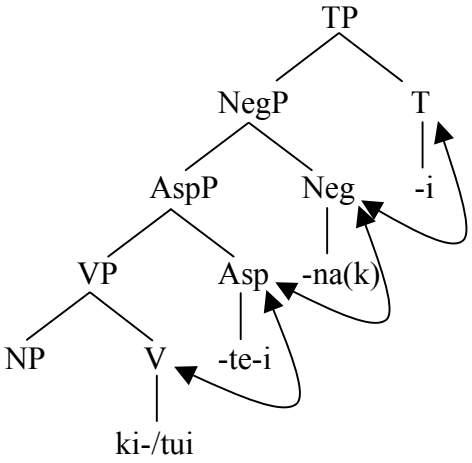
Figure 4: Frequency of Verbal Forms in Sumihare's Corpus



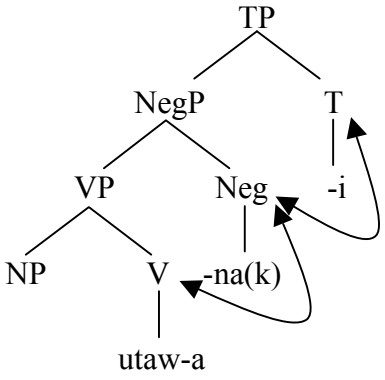
The *-ta* form is dominant in 1;6-1;11 (i.e., the Very Early Non-Finite Verb (RI analogue) Stage) in number; the non-past *-ru* form, the aspectual *-teru* and the preverbal *-te* form started to appear after 1;11. The other inflections began to be produced around 2;0. These facts indicate that at least 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

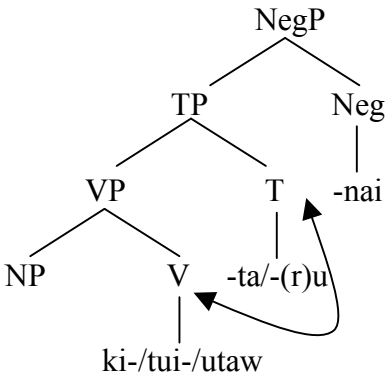
'(Mommy) doesn't sing.'

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.

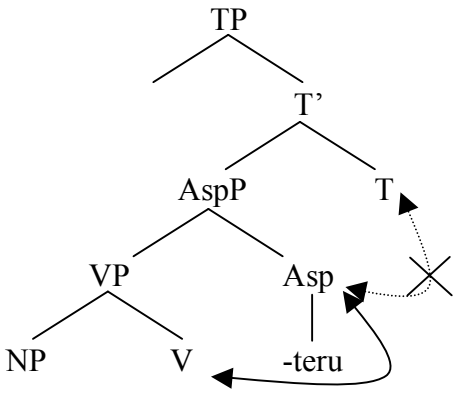
(26)



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.'

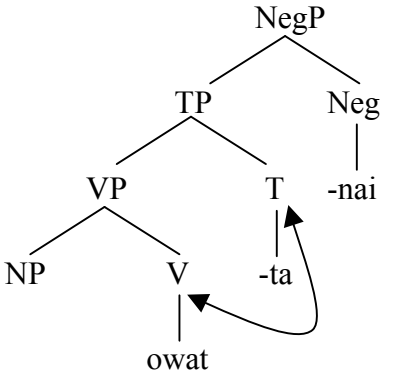
b. Nai-teru nai. (2;4) (adult form: nai-te(i)-nai)
cry-Progressive Neg

'(The bear) is not crying.'

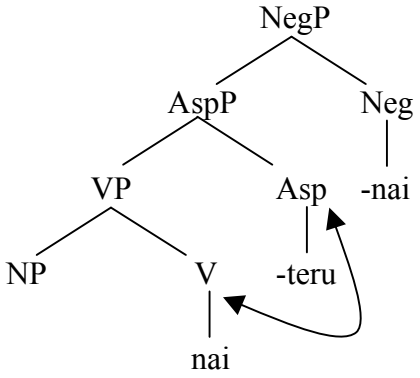
In (38), the negative marker *-nai* should follow the preverbal form *-te*. However, it was attached to a past tense verb in (38a) and the progressive form in (38b).

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.

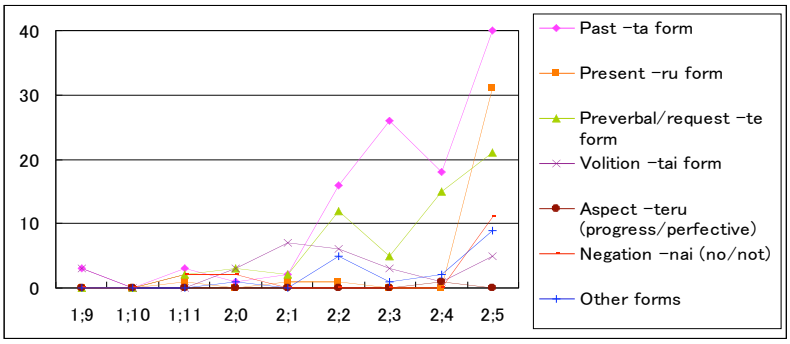


b.



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 not merely 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 not, 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)

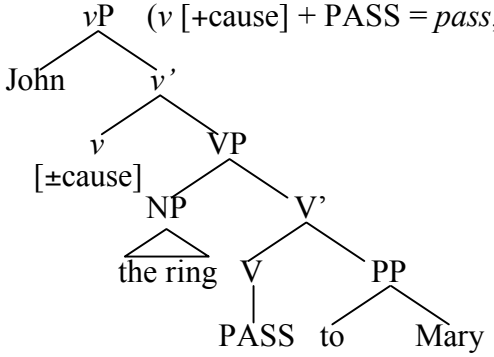
Murasugi and Hashimoto (2004) propose that children initially assume the pronounced verbs are bare V's and the [±cause] *v* is phonetically empty.

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*)

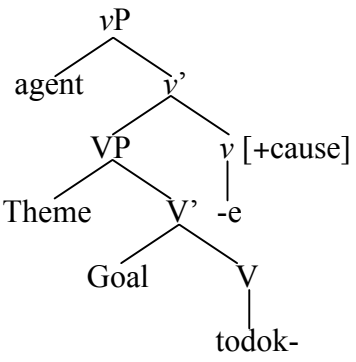


Consequently, both '*v* [+cause]+PASS' and '*v* [−cause]+PASS' are realized as 'pass'.

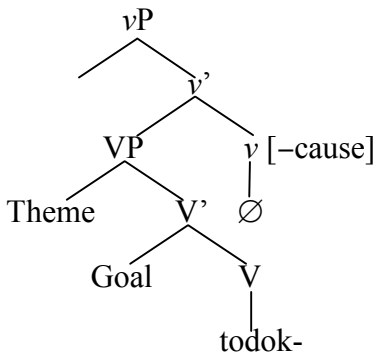
In contrast, in adult Japanese, transitivity and unaccusativity are often marked by distinct suffixes, as illustrated in (44) and (45).

(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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