Japanese Syntax: Implications From Language Acquisition

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Abstract

Child grammar is a window into linguistic variation in adult grammar. Examining children's knowledge of grammar in the course of language acquisition can bring new insights to cross-linguistic syntactic differences. This paper describes the typical errors Japanese-speaking children produce, i.e., Root Infinitive analogues, Case-marking errors, erroneous verbal forms, and the overgeneration of complementizer in complex NPs, and discuss the implications for the syntactic theory.

1. Introduction

The study of child language has implications for the theories of language variation. Not only adult languages, but children's intermediate acquisition stages are restricted within the permitted variation of human languages (Hyams, 1986; Murasugi, 1991; Roeper, 2007; Snyder, 2007; Sugisaki, 2003, among others). Child grammar is a window into linguistic variation, and the close examination of children's knowledge of grammar in the course of language acquisition can bring new insights to cross-linguistic syntactic differences. Linguistic theory seeks to specify the range of grammars permitted by the human language faculty and thereby to specify the child's "hypothesis space" during language acquisition.

Japanese is a non-nominative-accusative, agglutinating language with discourse *pro*-drop, TP/IP relative clauses (but not CP relative clauses), rich Case marking, and the operations of scrambling and argument ellipsis. Children born in the environment of such Japanese grammar hypothesize parametric values different from their target language at an intermediate stage of language acquisition.

In this paper, we view the properties of Japanese syntax through the window of grammar acquisition. We will discuss four types of syntactic errors that children typically make in the acquisition of Japanese: Root Infinitive analogues observed at around age of 1, Case-marking errors found in 2-year-old children, erroneous alternation between intransitive verbs vs. transitive/causative verbs, and erroneous CP structure for modifying complex NPs at around 2 to 3 years of age. The cases we discuss in this paper will indicate that children know a great deal about the morpho-syntactic properties and the functional structure of their language at a very early age, and even if children produce erroneous sentences, children's intermediate acquisition stages are restricted within the permitted variation of human languages.

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2. Language Acquisition and Language Variation

2.1. CP/TP Parameter for the Structure of Relative Clauses

A certain acquisition order commonly found in children would provide us insight into the theory of markedness in language. For example, Japanese- and Korean-speaking children's errors observed in the acquisition of relative clauses would provide a piece of evident support for the theorizing of the Principles-and-Parameters approach to language acquisition.

Japanese and Korean are languages where discourse plays an important role to license the gap not only in sentence but also in relative clauses, and sentential modifiers inside complex NPs are never followed by an overt complementizer as in (1a).

(1) a. Eri -ga robusutaa-o hazimete tabeta (*no) mise
-Nom lobster-Acc for the first time ate restaurant
'the restaurant that Ken ate lobster for the first time'

b. Eri-ga robusutaa-o hazimete tabeta-no-wa bosuton de da
-Nom lobster-Acc for the first time ate-C-Top Boston in is
'It is in Boston that Eri ate lobster for the first time.'

The complementizer *no,* obligatorily employed as the head of the presuppositional phrase in the cleft sentence as in (1b), is never allowed in relative clauses. This fact sharply contrasts with languages such as English, where the complementizer *that* is employed for both constructions.

Saito (1985) argues that a relative clause in Japanese, unlike in English, has an IP/TP structure, rather than a CP structure. According to him, Japanese relative clauses lack a C to host a complementizer; and they are not operator-oriented. The Aboutness Condition (Kuno, 1973) licenses the relative clause, when the "relativized" element is an argument base-generated as *pro* in the relative clause. Thus, Japanese does not have the counterpart of the complementizer *that* in English complex NPs such as *a pancake that Mighty baked for us last night.*

Saito's (1985) analysis is supported by the analysis of Japanese-speaking children's errors. Tokyo-dialect speaking children, at around 2-4 years old, overgenerate *no* (or *ga*, in Toyama dialect, and *to* in Kumamoto dialect), the complementizer, at a stage of language acquisition, when they start producing the complex NPs and realizing Tense on verbs (Murasugi, 1991, among others).[1]

[1] Abbreviations used in this paper are as follows: Acc=accusative Case, Asp=aspect morpheme, Benef=Benefactive, Cause=Causative, Comp=Complementizer, Dat=Dative Case, Decl=declarative, Gen=genitive Case, Ger=Gerund, Imper=imperative, INF=infinitive, Int=Interjection, Mood=mood marker, Neg=negation, Nom=nominative Case, Pass=Passive, Pres=present, Past=past, Prog=Progressive, Perf= Perfective, Req=Request, Q=question, Top=topic.

(2) a. tigau (*no) outi
different (+Pres) house
'the different car'

b. usatyan-ga tabeta (*no) ninjin
rabbit-Nom ate carrot
'the carrot that the rabbit ate'

c. iziwaru na (*no) obatyan
mean (+Pres) lady
'the lady who is mean'

d. suppai (*no) zyuusu
sour juice
'the juice that is sour'

Interestingly, the complementizer, which also appears in the presuppositional C projection in the cleft sentences as in (1b), is erroneously attached to the sentential modifiers in (2).

Within the Principles-and-Parameters approach, Murasugi (1991) argues that structure of complex NPs is parameterized; i.e., it is either IP/TP or CP, and Japanese- and Korean-speaking children initially take the CP value of the relative clause parameter, and realize the C head of the relative clause by inserting an overt morpheme. Positive evidence that C can be realized lexically as *no* is provided, for example, by cleft sentences such as (2). This implies that the unmarked setting for the CP/TP parameter for relative clauses is CP. Children later reset the value to IP/TP, based on the positive evidence available, and consequently retreat from overgeneration of *no* in the position of C.

2.2. Null Realization of Functional Category

The status of functional categories in early child language has been a central subject of debate for the last two decades. Demuth (1992) suggests that there are two approaches to acquisition of functional categories. The first termed Lexical Projection Hypothesis (Clasen, 1990) allows for a mopho-phonetic bootstrapping to take place, so that the phonetic realization of functional heads constitutes a positive evidence for the syntactic building of functional projections. The second termed Functional Projection Hypothesis (Whitman et al., 1991) calls for the acquisition of functional heads without morpho-phonetic evidence, but rather claims that the knowledge of functional heads is a prerequisite for the acquisition of a lexical realization of the functional head. Demuth (1992) further finds that evidence for the second hypothesis, Functional Projection Hypothesis: She argues that Sesotho-speaking children have acquired functional projections before they have acquired any phonetically realized functional heads.

Japanese, like Korean and Turkish, is an agglutinative language. This subsection discusses the errors within the verbal structure produced by agglutinative language-speaking children, and presents argument for Functional Projection Hypothesis. We support the Strong Continuity

Hypothesis (Deprez & Pierce, 1994, among others), which makes a claim that children's structures are of the same basic form as adult's and are constrained by the same principles of grammar.

Murasugi and Hashimoto (2004) report that 2-4 year-old Japanese-speaking children, who can use an unaccusative and a ditransitive as in (3a-b), often show interesting and consistent errors as they acquire the actual verbs. In the process of acquiring the lexical items that stand for V-*v* combinations, Japanese-speaking children often produce transitive and causative sentences with unaccusative verbs as in (3c-e).

(3) a. Dango-ga uta pakan tite, dango-ga
dumpling-Nom lid (onomatopoeia) doing dumpling-Nom
atta (Akkun, 2;9)
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 baby when Daddy-to this gave
'Akkun gave this to Daddy when he was a baby yesterday (=in the past).'

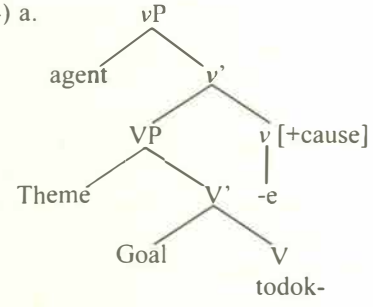
c. Mama Akkun *non-de* (Akkun, 2;8) (Adult form: noma-(s)ase-te)
Mommy drink-Request
'Mommy, please feed me(with milk).'

d. Nee, ati-o *hirogat-te* (Akkun, 3;7) (Adult form: hiroge-te)
Hey legs-Acc spread (unaccusative)-Req 'Hey, spread your legs.'

e. *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
(Adult form: todoke-yoo) (Murasugi & Hashimoto, 2004)
'Let's send (it). Let's send (it) to that person.'

Murasugi and Hashimoto (2004) analyze that the errors Japanese-speaking children make in the process of verbal acquisition as in (3c) through (3e) and suggest that children initially assume the pronounced verbs are Vs and that [±cause] *v* is phonetically empty.

(4) a.



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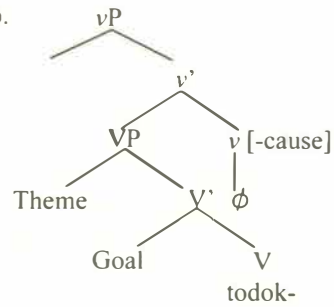
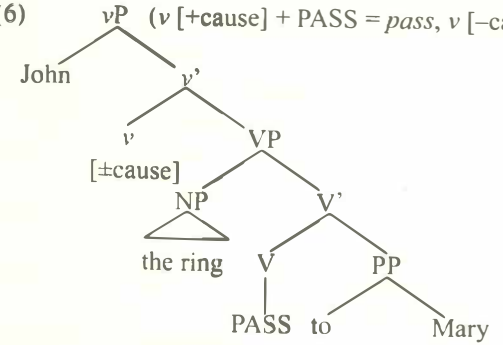


In English adult grammar, the same lexical item is often used as a transitive and as an unaccusative. Thus, we have alternations as in (5).

(5) a. John passed the ring to Mary b. The ring passed to Mary

If the argument structures of these sentences were realized as in (6), then *v* is a "zero morpheme" without phonetic content whether it is [+cause] as in the case of (5a) or [-cause] as in the case of (5b).

(6) *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 (7).

(7) a. utu-s-(r)u (=copy-present) / utu-r-(r) u '=be copied-present'
b. todok-e-ru (=deliver-present) / todok-(r)u '=be delivered-present'

These examples show that the forms of the suffixes are idiosyncratic and probably have to be learnt one by one by children. The suffixes would

plausibly occupy the *v* position in the structure of VP-shell, e.g., [+cause] *v* is realized as *-s* and [-cause] *v* as *-r*, in the case of (7a), and accordingly, to the children making such errors as (3), unaccusatives and their transitive counterparts should be homophonous, as 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 [± cause] *v* is idiosyncratic and sometimes even null, the acquisition of verbs requires complex morphological analysis. Murasugi and Hashimoto (2004) indicate that children are equipped with the *v*-VP frame from the early stage of acquisition, but Japanese-speaking children initially hypothesize the English *pass*-type verbs, and it requires some time for them to discover the morphological make-up of the actual verbs, which are formed by combining V and *v*.[2] This case also indicates that even if children produce erroneous sentences, children's intermediate acquisition stages are restricted within the permitted variation of human languages.

2.3. Root Infinitive Analogues

Some aspects of child languages vary in systematic ways reflecting the nature of the adult grammar. Children know a great deal about the inflectional structure of their language when they enter the two-word stage.

Children speaking "European" languages such as English, Dutch and French are well known to produce Root Infinitives (RIs), or non-finite verbal forms in matrix clauses, where they are not possible in adult grammar at around two years of age. (Blom & Wijnen, 2000; Haegeman, 1995; Wexler, 1994, among others):

(8) a. Eve sit floor (1;7) (English)
b. That truck fall down (2;0) (English)
c. Peter bal pakken (2;1) (Dutch)
Peter ball get-INF 'Peter (wants to) get the ball.'
(Blom & Wijnen, 2000)

[2] Murasugi and Hashimoto's (2004) analysis is supported by the data analysis of another Japanese-speaking child, Sumihare (Noji, 1973-1977) in CHILDES database (MacWhinney, 2000). Sumihare goes through acquisition stages exactly parallel with Akkun: The erroneous alternation between intransitive verbs and transitive/causative verbs is also found (Murasugi, Hashimoto, & 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-Pas there '(This) comes out from here.'

d. Dormir petit bébé (1;11) (French)
sleep-INF little baby 'A little baby sleeps.'

The very early non-finite verbal forms, termed RIs, are known to have some salient morpho-syntactic and semantic properties, as listed in (9).

(9) a. RIs are optional: RIs occur side by side with fully inflected verbs.
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 (Modal Reference Effects (MRE)).
f. RIs are restricted to event-denoting predicates (Eventivity Constraint).
g. RIs are very rare in pro-drop languages.
(Deen, 2002; Hyams, 2005)

As (9g) states, it was once considered in researches of language acquisition that RIs are not found in the early grammar of such pro-drop languages as Italian, Spanish, Catalan, and Japanese (e.g., Guasti, 1993/1994; Sano, 1995, among others).

However, recent researchers have proposed that there is an RI analogue stage in the pro-drop languages as well. Hyams (2005) argues, for example, that the bare perfective is an RI analogue in Greek; Kim and Phillips (1998) suggest that the RI analogue is the V with mood marker *-e* for Korean.[3]

Japanese is an agglutinating *pro*-drop language where bare stems cannot stand alone without, for example, tense or aspect morphemes, as shown in (10). That is, Japanese is, like Italian and Spanish, a [-stem] language whose verbs cannot surface as bare forms.

(10) a. *tabe- (to eat) b. *suwar- (to sit)

Unlike Italian and Spanish verbs, however, Japanese does not have a rich verbal inflection that indicates number and gender. Japanese verb inflects for tense, negation, aspect, and mood. Following are some inflections for the verb "to eat," which has the root *tabe-*.

[3] Kim and Phillips (1998) analyze the V-e (e being a mood marker) form as an RI analogue in Korean. In Adult Korean, the tense morpheme *-ess* is obligatorily attached to refer to the completive events, but Jiyoung from 2;2 through 2;3 did not use past-tense morphemes even in obligatory contexts, but used V-*e* form only. Salustri and Hyams (2006) suggest that the RI analogue in Italian is the imperative, and a parallel proposal is made for Kuwaiti (Aljenaie, 2000), American and Brazilian Sign Languages (Lillo-Martin & Quadros, 2009), and Chinese (Chien, 2008).

(11) a. tabe-ru (eat) present/dictionary form
b. tabe-ta (eated) past
c. tabe-(a)nai (not eat) negation
d. tabe-(i)te iru (is eating) progressive
e. tabe-te (eat) imperative
f. tabe-tara (if (you) eat) conditional

The verb stem *tabe-* (to eat) is followed by the present-/past-tense morphemes as in (11a-b), and it is followed by the aspectual morpheme *-te-i* to indicate either the ongoing process or the result state of the event as in (11d).[4] For request or imperative, the morpheme *-te* forms are employed as in (11e).

The conjugations are acquired at around 2 of age. The number of each verbal form in Sumihare (Noji, 1973-1977) is shown in Figure 1.

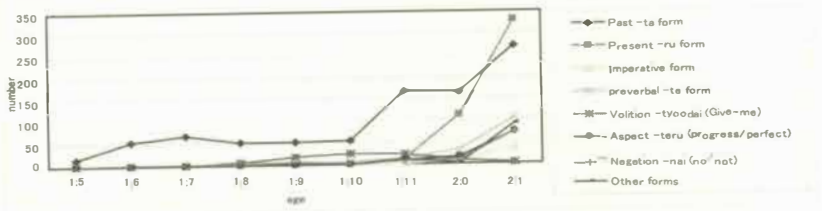


Figure 1. Frequency of verbal forms in Sumihare's corpus.

Murasugi, Fuji and Hashimoto (2007) and Murasugi and Fuji (2008a, b) argue that there is a stage of Root Infinitive analogues in Japanese. According to them, some of the typical properties of RIs given in (9) are also observed in Japanese early non-finite verbal forms: (i) Verb-*ta* forms (past-tensed verb forms) are used only in matrix clauses for the irrealis or volition meaning as in (12a, b) (Modal Reference Effects (=MRE)), and for progressive and result state as in (13d) at 1 year of age, (ii) 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, (iii) the past-tense morpheme is not found with adjectives (i.e., only present-tensed adjectives are produced), and (iv) no merger of heads inside the verbal projection are, as Phillips (1995) proposes, observed at the Root Infinitive analogue stage.

Sumihare, for example, at around 1;6 through 1;11, used V-*ta* form in a different way from adults, semantically denoting the meaning of volition

[4] 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.'

(desire) or request.[5]

(12) a. Atti Atti Atti *i-ta* (1;6) (irrealis/volition) (Adult form: ik-u/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 onomatopoeia (throw away)-Past 'Throw (the mud) away.

Noji (the observer) describes the meaning of *i-ta* in (12a)[6] as *ik-u* (go-Pres) while Sumihare uttered *i-ta*, because he could not say *ik-u* (Noji, 1973-1977 I: 195). Noji also writes important comments for (12b), 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 (12c), 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 exactly parallel data is found in a longitudinal study with another Japanese-speaking child, Yuta, as in (13) (Nakatani & Murasugi, 2009).

(13) a. Ai-*ta* Ai-*ta* (1;7.1) (irrealis/volition) (Adult form: ake-te)
open-Past open-Past 'I want to open this cabinet./ Open this cabinet.'
b. Hait-*ta* Hait-*ta* (1;7.16) (volition) (Adult form: ire-tai)
enter-Past enter-Past 'I want to put this notebook into this bag.'
c. Oti-*ta* Otyoto(=Osoto) Oti-ta (1;7.13) (progressive)
drop-Past outside drop-Past (Adult form: otosi-teiru)
'I am putting this doll out outside.'
d. Oti-*ta* Oti-*ta* Oti-*ta* (1;7.5) (result) (Adult form: oti-teiru)
fall-Past fall-Past fall-Past
'A container of the video tape is lying there.'

The percentage of V-*ta* forms decreases with age; as is clear in Figure 2. At 1;6-1;7, he predominantly used the V-*ta* form almost 100% of the time. RI

[5] RI typically has a modal or irrealis meaning, expressing volition or request (Hoekstra & Hyams, 1998, among others). The infinitive verb expresses the speaker's volition as in (i).
(i) vrachtwagen emmer doen (2;4) (Dutch)
truck bucket do-INF
Context: The speaker wants the observer to put the truck in the bucket.

[6] The context for (12a) 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.

analogues are not "optional" "infinitives" in Japanese-type languages.

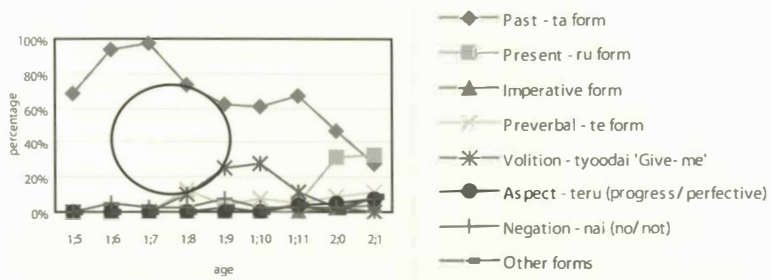


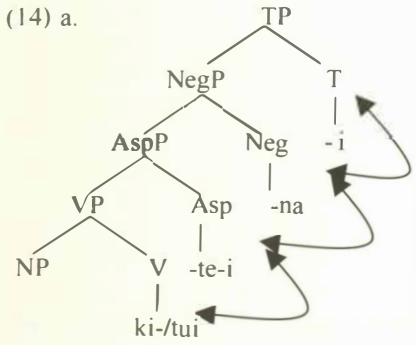
Figure 2. The overall proportion of verbal forms in Sumihare's corpus at each stage.

Based on the analysis of the Sumihare corpus (Noji, 1973-1977), the fact that *-ta* forms, but not the other verbal forms, such as imperatives and present-tensed forms, are consistently used to denote different meanings, would suggest that the verbal conjugation, i.e., the merger of V and inflection, is not yet available then, and this is the stage where a default form is picked up by a child for the verbal element.

In fact, Phillips (1995) argues that the verb and the inflectional features are not syntactically joined (merged) when RIs are produced. Murasugi and Fuji (2008a) support Phillips (1995), arguing that during the RI analogue (RIA) stage, the merger of a verb with inflection is not available in Japanese. They argue that even after the stage where only Verb-*ta* form is employed (which is termed RIA stage), at the post-RIA stage, where some inflected forms come to be employed at around 1;11, the child uses, for example, the abbreviated aspectual or negative forms without making multiple step head merger.

Evidence for the unavailability of two-step head merger at the post-RIA stage is provided by the analysis of the negative sentences Sumihare produced, for instance. In adult Japanese, the negative marker *-nai* (not) is a verbal predicate which itself carries finite Tense, and two-step head movement (V-Neg-T) is involved. To form the adult negative predicates *ki-te-na-i* or *utawa-na-i*, two- (or more) step head movement (or merge in the PF merge analysis) is required:

(14) a.



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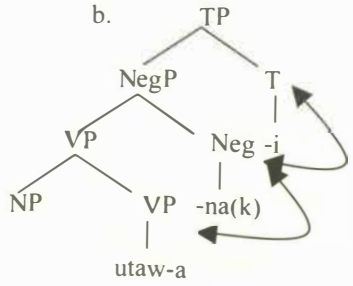


However, the child (Sumihare) at around 1;11-2;2, consistently produced erroneous negative sentences such as (15) and (16), without making the adult-like application of multiple application of merge in the PF merge analysis.

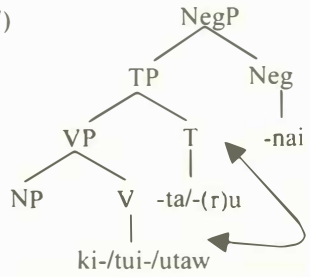
(15) a. Tinbun ki-**ta**-nai yo (1;11) (Adult form: *ki-te(i)-nai*)
newspaper come-Past-Neg Mood (The newspaper hasn't come yet.)
b. MOT: Sekken-ga te-ni tui-te-i-ru kara arai nasai
soap-Nom hand-Dad put-Asp-Pres as wash Imper
'Wash your hand. Some soup sticks on your hand.'
SUM: Tui-**ta**-nai (1;11) (Adult form: *tui-te(i)-nai*)
put-Past-Neg 'No, (they do) not stick (on my hand) .'

(16) Utaw-**u**-nai (2:0) (Adult form: *utaw-**a**-nai*)
sing-Pres-Neg '(Mommy) doesn't sing (a song).'

In these examples, the negative marker *-nai* is not merged with the preverbal form *ki-te-i* or *tui-te-i*. Rather, *-nai* follows the full past-tensed verb *ki-ta* (came) in (15a) and *tui-ta* (stick-past) in (15b). In (16), *-nai* even attaches to the full present-tensed verb *utaw-(r)u*.[7] This would suggest that the structure of (15) and (16) in child Japanese would be something like (17), which is different from the ones in adult grammar (14a, b) in that NegP is located outside of TP.

[7] There are a few correct negative sentences like (ia-b). The unanalyzed "negative forms" are stored as chunk (rote) in the child lexicon: the past tense form *-na-k-atta* comes to be productively produced by Sumihare with different verbs after 2;2.
(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) does not come, does it?'

(17)

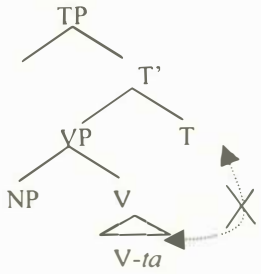


The productive errors Sumihare made for negation with different types of verbs would indicate that only one merger of a verb and inflection is available at around 1;11-2;0. Here, the negative morpheme *-nai* would be base-generated as an unanalyzed form, i.e., Neg (*-na*) and T (*-i*) are not separated in the child grammar.

Murasugi and Fuji (2008a), providing further support for the unavailability of two head merger inside the verbal projection at around 1;11-2;0 in the morphology of aspectual or mood forms, argue that only one-step head merger, or the merger of a verb and T(I) in Phillip's term, is available at the post RIA (Post-Non-Finite Verb) stage, at around 1;11. It is only after the RIA stage at around age 2;1, when the multiple heads are joined.

Thus, although Japanese-type RI analogues are quite different from European RIs in that they are not "optional" "infinitives," and that they are observed at the very early stage even at 1 year of age, the step-by-step acquisition of head-mergers is commonly observed. When the RI analogues are produced, the limitation of processing English RIs, as Phillips (1995) states, is observed in Japanese as well. When children start producing the "verbal" elements, the verb and the inflection are not merged as independent syntactic categories. The whole V-*ta* form in Japanese RIA stage would be base-generated as an unanalyzed rote form as illustrated in (18). This stage is characterized as the one where the verbs are not merged with the head of TP.

(18)



Then, why do Japanese-type languages have RIAs instead of the RIs observed in European languages? Why is it that the children's very early verbal forms show cross-linguistic variations? Murasugi, Fuji, and Hashimoto (2007) argue that children learning [-stem] languages, whose verbal stem obligatorily requires the morpheme to be attached, go through the stage of the Root Infinitives analogues.

It has been observed that children speaking the agglutinative languages, e.g., Tamil (Raghavendra & Laurence, 1989) and Turkish (Aksu-Koç & Slobin, 1985), acquire verb inflections at a very early stage. The early emergence of RI analogues in such languages as Japanese, Korean (Kim & Phillips, 1998), Italian (Salustri & Hyams, 2006), American and Brazilian Sign Languages (Lillo-Martin & Quadros, 2009), Chinese (Chien, 2008), Arabic (Aljenaie, 2000), and Greek (Hyams, 2005, among others), will be explained by a morphological parameter, the Stem Parameter proposed by Hyams (1986), which is responsible for the well-formedness of verbal bare stems in a language. (See also Aljenaie, 2000) According to this hypothesis, English, for example, takes a value [+inflected stem], as verbs can surface as bare stems. On the other hand, in such languages as Japanese, the parameter takes the opposite value, [-inflected stem], because verbs cannot surface as bare stems. Children acquiring Japanese will 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.

Then, why is it the case that *-ta* form is chosen as the RI analogue in Japanese by different children out of several sentence-ending morphemes, despite the fact that each child receives different input?

Here arises a bridge between child language and syntactic theory. 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 of non-finite verbs are derived by an operation to make the verbal stems the well-formed morphological words in the adult grammar of Salentino/Serbo-Croatian, and Japanese, respectively. Furthermore, there is some evidence to show that the past-tense form, Verb-*ta* that children pick up as Root Infinitive Analogue seems to be most unmarked among the possible surrogate forms in Japanese.[8]

Two conjuncts unspecified regarding Tense, for example, are conjoined by the verbal conjunct with *-ta* forms in (19a-b), and *-ta* forms can be used

[8] Although the non-finite verb forms of Japanese children are found only in matrix clauses, it has been well known that the non-finite verb forms are found in the embedded clauses in Adult Japanese. It has been argued that the past verbal inflection *-ta* lacks a tense interpretation (but it is rather aspectual) in such relative clauses as "*yude-ta tamago*" (boil-past egg, meaning the boiled egg (property reading)) in Adult Japanese (Abe, 1992; Miyagawa, 2008, among others).

for future as in (19a), and with irrealis meaning as well as shown in (20).

(19) a. Tabe-**ta** ri non-**da** ri su-ru/si-ta
eat- drink- do-Pres/do-Past
'We eat/ate, and we drink/drank.'
b. It-**ta** ri ki-**ta** ri de taihen da/dat-ta
go- come- for troublesome is /was
'It's troublesome to go back and forth.'

(20) a. Asu-wa nani-o watasi-wa suru-no-dat-**ta**-ka na?
tomorrow-Top what-Acc I-Top do-Nomi-Cop-Past-C mood
'What am I going to do tomorrow?'
Sooda! Asu-wa paatii-dat-**ta**!
Aha! Tomorrow-Top party-Cop-Past (Aha! Tomorrow is a party!)
b. Mosimo watasi-ga ie-o tate-ru/-**ta** nara tiisana
If I-Nom house-Acc build then small
ie-o tate-ru/-ta (deshoo)
house-Acc build-pres/-past
'If I built a house, I would build a tiny one.'

Furthermore, like infinitives in Italian (Rizzi, 1993/1994), in Japanese *ta* forms can be used as non-finite surrogate forms with the meaning of strong imperatives as in (21).

(21) a. Partire immediatamente!
Go immediately (Rizzi, 1993/1994)
b. Sassato Kaet-**ta**! Kaet-**ta**!
Immediately go back-Past go back-Past
'Go back immediately.'

The parallelism between infinitives in Italian and the past tense *-ta* form in Japanese indicate that whether or not the target language has an infinitive form and the form children choose as Root Infinitive analogues are independent issues. Despite the fact that Italian has infinitives in the adult grammar, children use imperative or perfective forms as the Root Infinitive analogues, as Italian is, like Japanese, a [-stem] language.

Suppose that the unmarked surrogate form in Japanese is the non-finite Verb-*ta* form in adult Japanese. Then, one of the non-finite surrogate forms in Cinque's term, probably the unmarked form in adult Grammar, is the so-called Root Infinitive analogue. The agglutinative language-speaking children, even at the age of 1, know that verbal stems **cannot** be present **without** tense/aspect morphemes in their languages, and when tense is still

underspecified, the unmarked sentence-ending morpheme(s) is (are) chosen as the surrogate forms, i.e., the Root Infinitive analogues. Root Infinitive analogues in Japanese are found at around age 1, much earlier than RIs found in European languages, and the non-finite form is initially (at around 1;6-1;7) 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, unlike the European RIs.

2.4. Erroneous Non-Nominative Subjects When Tense is Underspecified

European Root Infinitives are considered to reflect the acquisition stage where the Tense is underspecified (Schütze & Wexler, 1996), and the verb forms, correct and incorrect (without inflection), are both produced by children at around 2. On the other hand, Root Infinitive analogues in Japanese (and Korean) are productively used at around age 1, earlier than RIs found in European languages, and the non-finite form is initially (at around 1;6-1;7) used 100% of the time in a full range of environments.

A natural explanation is provided for the latter point regarding why "Optional Infinitives" are not found in Japanese, if we adopt the "surrogate form (Cinque, 2004)" analysis: Optional use of correct form is not observed in Root Infinitive analogue stage, because it is the stage where the unmarked form is picked up as the onset of the verbal element by very young children. Then, how about the former point regarding the acquisition of Tense? Do we expect that Japanese-speaking children acquire the Tense system much earlier than European language-speaking children?

The answer is probably negative. Rather, the immature specification of Tense features at around age 2 would be realized in a different manner depending on the language types.

Japanese is a language with a rich Case-marking system: Not only nominative subjects as in (22a), but also dative subjects (in the sentence) and the genitive subjects (in the NPs) in (22b) and (22c) are subject-like.

(22) a. Taroo-ga eigo-o hanas-u
Taro-Nom English-Acc speak-Pres 'Taro speaks English.'
b. Taroo-ni/ga eigo-ga dekir-u
Tato-Dat/Nom English-Nom understand-Pres
'Taro understands English.'
c. Taroo-no/ga hanas-u eigo
Taro-Gen/Nom speak-Pres English 'The English that Taro speaks'

After the Root Infinitive analogue (RIA) stage is over, Japanese-speaking children start to productively use the verb conjugations and Case-marking on subjects in the adult way, but at the same time, not a few Case-marking

errors are observed. Japanese-speaking children, at around 2, erroneously mark subjects with Dative Case *-ni* as in (23a-b), or Genitive Case *-no* as in (24a-d), instead of Nominative Case *-ga,* although these children at this point optionally produce the correct Nominative Case marker *-ga* also as in (23c-d) and (24e).

(23) a. watasi-**ni* katazyuke-ru (=katazukeru) kara (2;1)
I-Dat clean-Pres as (Adult Form: watasi-ga)
'As I'll clean (it, let me play with it).' (Moko corpus)
b. Papa-**ni* it-ta (2;3) (Adult Form: Papa-ga)
father-Dat go-Past
'Daddy went away.'
c. Kaatyan-ga neta (2;3)
mother-Nom sleep-Past ((My) mother went to bed.)
d. kore nani-ga haittoru n? (2;4)
this what-Nom is-inside Q 'What's in here?'

(24) a. Ee-tyan-**no* tukat-teru no (2;1) (Adult Form: Ee-tyan-ga)
-Gen use-Prog Particle 'Ee-tyan is using (it).'
(Suzuki, 2007)
b. Moko mo se-**no* ookii (1;11) (Adult Form: se-ga)
also height-Gen tall
'Moko is also tall.'
c. hizya (=hiza) -**no* akaku-nat-teyu(=teru)(1;11)(Adult From: hiza-ga)
knee -Gen red-become-Perf
'My knees have become red.'
d. Moko-**no* warat-tyatta (2;3) (Adult Form: Moko-ga)
-Gen laugh-Perfective
'Moko has laughed.'
e. Boosi-ga tonda (2;2)
cap-Nom fly-Past
'The cap flew away.'

Murasugi (2008) proposes that the (Optional) Subject Case marking is observed in Japanese-type languages instead of erroneous (Optional) Infinitives found in European languages at around the age of 2, due to the immature specification of features in Tense.

As for the erroneous dative subjects like (23) and (25), Watanabe (2008), based on the analysis of CHILDES corpora, generalizes that they co-occur with transitive and unergative verbs, but not with unaccusative verbs (which assign Nominative Case *-ga* to the subject inside VP.

(25) a. Ee-tyan-**ni* tabe-tyau yo (2;7) (Adult form: Ee-tyan-ga)
-Dat eat-perfect Mood 'Ee-tyan will eat it up.'
b. Taa-tyan-**ni* dakko site age-ru (3;11) (Adult form: Taa-tyan-*ga*)
-Dat hold do give-Pres (Taa-tyan corpus 1983)
'Taa-tyan will give (someone) a favor of holding him/her.'

To explain the erroneous dative subjects, Murasugi and Watanabe (2009) propose that there is a stage where the nominative Case-feature on T remains unchecked in the course of acquisition, and the value of Impersonal Parameter (Ura, 1996) is yet unset, and hence, a subject, without moving to TP-spec, gets the default Case *-ni* inside VP. According to Ura (1996), there is a parameter, Impersonal Parameter, concerning the checking of the nominative Case of T. If the Impersonal Parameter is set as negative in a language L, the finite T in L always has a nominative Case-feature to be checked off; on the other hand, if the setting of this parameter is positive in a language L', the nominative Case-feature need not be checked off in L'. The parametric value in the adult Japanese is [-impersonal], and T's nominative features, though weak, must be checked off. At the stage when the parametric value is not yet set, a subject, sometimes without moving to TP-spec, gets the default Case marker inside VP, *-ni*. Hence, the children at the stage produce erroneous dative subjects as well as "correct" nominative subjects.

Unlike the parameter that has a subset-superset character, the Impersonal Parameter would be initially labeled as "unset," and remains so until the child receives clear evidence for one of the settings. In Japanese, a [-impersonal] discourse-pro language, a (phonologically) overt expletive is not found in the adult grammar. Rather, Japanese employs a (phonologically) null expletive, which checks off T's nominative Case features. Then, in the input available to the children, there is no clear positive evidence that their target language is a [-impersonal] language. As a result, the erroneous dative subjects in question would be produced because the [+/-impersonal] parametric value is "unset" at this stage. Then, children produce utterances conforming to the [-impersonal] value, but sometimes ones conforming to the [+impersonal] value, and wait for the specific setting of an as-yet unset parameter.[9]

The underspecification of features in T at an acquisition stage would also trigger the erroneous genitive subjects given in (24). The erroneous genitive subjects appear almost at the same time as (sometimes earlier than) the erroneous dative subject. However, the two types of Case errors are not, in fact, randomly selected, but are almost in complementary distribution

[9] See Chomsky (1981), Snyder (2007), among others, for the issues on parameter setting.

with respect to the properties of the predicate. Sawada, Murasugi and Fuji (in preparation) argue that the erroneous genitive subjects appear with the predicates containing unaccusative verbs, adjectives, and the verbs associated with aspectual expressions such as verb-*te(i)ru* (progressive/perfective) and verb-*tyatta* (perfective), unlike the case of datives.

The findings in child language shown above are, again, neatly tied with findings in adult Syntax. The properties of the predicate observed with the erroneous genitive Case errors are parallel with those found with genitive subjects within the sentential modifiers (relative clauses) in adult Japanese (i.e., *Ga/No* conversion) as in (26).[10]

(26) [John-ga/no e_i yon-da] hon_i
-Nom/-Gen read-Past book (the book that John read)

The sentences children produce with genitive (not dative) subjects generally lack the phonetically overt object NP; if the discourse requires, they appear in the topic (*kore*) or dislocated position as in (27), thereby obeying Transitivity Restriction that forbids accusative objects from occurring in structures with the genitive subjects in adult Japanese as in (28).

(27) a. Okaasan-**no* osiete age-ru dake (2;8) (Adult Form: Okaasan-**ga**)
Mommy-Gen teach give-Pres just
'Mommy (=I) just teaches (something to the doll).' (Moko corpus)
b. Kore, Ee-tyan-**no* tukut-ta no (2;3) (Adult Form: Ee-tyan-**ga**)
this -Gen make-Past Particle 'This one, Ee-tyan(=I) made'

(28) John-no (*hon-o) kasi-ta hito (Miyagawa, 2008)
-Gen book-Acc lend-Past person
'The person to whom John lent a book'

Although the genitive subject is allowed only in the embedded clause in NPs in Adult Japanese, there are not a few languages (e.g., Dravidian languages) where the non-nominative subjects, either dative or genitive, are allowed in matrix clauses. (See Amritvalli, 2004; Jayaseelan, 2004; Lin, 2008; Mahajan, 2004, among others). The parametric account for the non-nominative subjects would provide an elegant explanation for both the adult syntax and the erroneous non-nominative subjects found at the intermediate

[10] Miyagawa (2008) argues that an adult relative clause with the genitive subject in Japanese is Aspectual Phrase, not Tense Phrase, which, in turn, confirms the underspecification of Tense in Child Grammar.

acquisition stage in Japanese.[11]

3. Conclusion

Languages vary, though not randomly. Some aspects of languages are universally invariable (e.g., Universal Grammar), but some aspects of languages vary in systematic ways within possible human grammar. This is also true for child languages. They vary, though not randomly. Some aspects of child languages are universally invariable, but some aspects of child languages vary in systematic ways reflecting the possible grammar in human language. Children's errors are not simply the coincidental deviant strings, but rather, they reflect a possible grammar different from their target grammar. The errors in child production show how it is unlike target adult grammar, and hence, antinominally tell us the range of possible grammar(s) in human language. There is an abundance of input available to children. Still, children commonly make syntactic errors, producing the strings they have never heard in the input. We cannot provide a natural explanation without assuming an unconscious innate knowledge of grammar in human mind.

The cases we discussed in this paper indicate that children's intermediate acquisition stages are restricted within the permitted variation of human languages. Child grammar is constrained in some principled and predictable way by the properties of Universal Grammar, and Japanese-speaking children's intermediate grammar corresponds to the adult grammar in other languages, sometimes English, sometimes Hindi, sometimes Tamil, and so on. The errors children make are often the best teachers to demonstrate that

[11] "Erroneous" dative subjects in children's production are, in fact, not unique to Japanese. 2-3 year-old Children's erroneous subjects are widely observed cross-linguistically (Huxley, 1970; Pierce, 1992; Radford, 1990, 1999, among others.) as in (i) and (ii), and the analysis here would explain those cases as well.

(i) a. Her holding a balloon (2;0) b. Her too cold (2;1) (Pierce, 1992)
c. No me take it off (2;1) d. Does him fish? (2;2) (a-d: Pierce, 1992)
e. Her crying now (2;3) (Vainikka, 1994)
f. Her fell off(2;3)(Radford, 1999)
g. Look what my got (2;3) (Vainikka, 1994)
h. Him does go there (2;4) (Radford, 1990)
i. Know what me keep for you?(3;0) j. Him pulled out the telephone (3;2)
k. Him is bear (3;3) l. Her would just break it (3;4)
m. No us buyed this in a shop (3;9) (i-m: Huxley, 1970)

(ii) a. Moi dessiner la mer (1;10) b. Aller dedans moi (2;3)
me draw the sea (I draw the sea.) go inside me (I go inside.)
c. Moi fais tout seul moi (2;1)
me do all by myself/me (I do all by myself.) (Pierce, 1992)

language is parameterized and how the parameters are related with each other.

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