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Negation in the Acquisition of Japanese and Its Implications for Universals*

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1. Introduction

In this paper, we will provide an analysis of certain errors found in the acquisition of Japanese verbal negation. It is well-known that negation in early child English is often sentence-initial, as in (1).

- (1) a. No I see truck.
b. Not Fraser read it.
c. No Mommy doing.
d. No lamb have it.
(a.,b. from Bellugi 1967, c., d. from Déprez and Pierce 1993)

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Déprez and Pierce (1993) argue that the structure of such neg-initial sentences is the same as that in adult English grammar except that subjects remain in Spec of VP, as in (2a), contrary to the traditional analysis which posits NEG in a clause-external position, as in (2b).¹

- (2) a.
- | | | | | | |
|------|----|-------|------|-----|-------|
| IP | | | | | |
| SPEC | I' | | | | |
| | I | NEGP | | | |
| | | NEG | VP | | |
| | | | SPEC | V' | |
| | | | V | | NP |
| | | no(t) | I | see | truck |
- b.
- | | |
|---------|-------------|
| IP/NEGP | |
| NEG | IP |
| no(t) | I see truck |

We will discuss corresponding negation errors in child Japanese. On the basis of morphological considerations, we will show that negation errors in child Japanese should *not* be analyzed by a structure analogous to (2b). Thus, our analysis of child Japanese negation will give indirect support to Déprez and Pierce (1993). Then we will discuss some further issues by comparing child Japanese with other child languages with respect to head movement and the Root Infinitive phenomenon (cf. Wexler 1992).

1.1. *Negation in Japanese*

The Japanese negative marker *na-i* is different from those in Germanic or Romance languages in several respects (for negative markers in Romance, see Zanuttini 1991). Here we focus on just one fact: *na-i* is a finite predicate.

Japanese verbs and adjectives exhibit the paradigm of tense inflection by changing affixes, as illustrated by examples in (3).

- (3) a. mi-ru 'see (non-past)'
 mi-ta 'see (past)'
 b. hair-u 'enter (non-past)'
 hait-ta 'enter (past)'

¹We will not be concerned with whether the topmost node in (2b) is IP or NEGP. If it is IP, NEG may be considered to be clause-internal, but it is irrelevant for our discussion in any case.

- c. aka-i 'red (non-past)²
 aka-kat-ta 'red (past)'
 (non-past: present and future)

Basically, finite verbs and adjectives are produced by attaching tense affixes to their stems: for verbs, *-(r)u* is non-past and *-ta* is past; for adjectives, *-i* is non-past and *-kat-ta* is past. When finite verbs and adjectives are negated, as in (4), the tense morphology is realized on the negative marker *na-i*, rather than on the verb or the adjective. *Na-i*'s tense inflection is the same as adjectives: the past form is *na-kat-ta*.

- (4) a. mi na-i 'not see (non-past)'
 mi na-kat-ta 'not see (past)'
 b. hair-a na-i 'not enter (non-past)'
 hair-a na-kat-ta 'not enter (past)'
 c. aka-ku na-i 'not red (non-past)'
 aka-ku na-kat-ta 'not red (past)'

Thus, in Japanese negative sentences, verbs and adjectives themselves are non-finite, unlike in affirmative sentences. Since the negative marker *na-i* is finite, negating finite verbs and adjectives cannot be just adding a negative marker to them, unlike most Germanic or Romance languages, for that would result in having two finite tenses in a sentence.

1.2. *Children's External Negation: Preliminary Observation*

Let's now look at the acquisition of the morphological alternation associated with Japanese negation. At a very early stage of children's acquisition of Japanese, it has been observed that negative forms of verbs and adjectives are often produced by adding *na-i* to the right of verbs or adjectives which are given tense-inflections, instead of adding the tense-inflection to *na-i*. This is not the correct formation of negation in the adult grammar of Japanese. The contrast between the children's negation and the adults' is illustrated by examples in (5) for verbs and (6) for adjectives.

- (5) CHILD (age) ADULT
- a. nor-u nai (2;6) nor-a na-i
 ride(-P) not ride(IR) not(-P)
 '(it) will/does not ride.'
- b. hait-ta nai (2;6) hair-a na-kat-ta
 enter(+P) not enter(IR) not(+P)
 '(it) did not enter.'

²Strictly speaking, this affix *-i* for adjectives is not used for the future, hence it is rather present than non-past. However, we call it non-past to be consistent with the terminology for verbal tense affixes, since this does not affect our discussion here.

((-P)=nonpast, (+P)=past, (IR)= irrealis= Stem (+Affix /a/) (for Verbs);
a. MANABU, b. TOSHI; child's data are accompanied by the child's name, the
data source is my corpus unless specified otherwise.)

(6)	CHILD	(age)	ADULT
a.	okki-i nai	(2;10)	okki-ku na-i
	big(-P)not		big(CT) not(-P)
	'(it) is not big'		
b.	atarashi-i nai	(2;6)	atarashi-ku na-i
	new(-P) not		new(CT) not(-P)
	'(it) is not new'		
c.	oichi-kat-ta nai	(2;1)	oishi-ku na-kat-ta
	delicious(+P)not		delicious(CT) not(+P)
	'(it) was not delicious'		

((-P)=nonpast, (+P)=past, (CT)= continuative= Stem+ Affix /ku/ (for
Adjectives); a. KEN, b. MASANORI, c. SUMIHARE (cf. Noji 1974-77,
Morikawa 1989))

Japanese has empty pronominal noun phrases and the examples in (5) and (6) are all sentences with such null subjects. These children's examples contain either a (+P(ast)) or (-P(ast)) inflection inside the verbs or the adjectives and *na-i* is to the right of the tense-inflected words.³ In the adult counterparts, however, verbs and adjectives are inflected with irrealis or continuative (non-finite) affixes and the (+P) or (-P) inflection appears inside the negation marker, as evident in (5c) and (6c). See (7) for summaries.

(7)	CHILD form
	Stem(V or A)+Tense Neg
	=External Negation
	ADULT form
	Stem(V or A)+Affix(Non-finite) Stem(Neg)+Tense
	=Internal Negation

Henceforth, we will refer to the child's form as External Negation and the adult's as

³The child example (6c) is preceded by an adult utterance (i) below, and, although it would be desirable to list an example without such a preceding utterance, there are no good examples of External Negation with past adjectives in my data.

(i) oishi-kat-ta? (FATHER)
delicious(+P) (= '(was it) delicious?)

In general, External Negation is very rare with past tense, and this must be taken into consideration. Cf. fn. 4. Finiteness of *na-i* in child Japanese will be discussed in section 4.

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Internal Negation. Whether Neg in External Negation is finite non-past or non-finite will be discussed later.

The phenomenon of External Negation has been noted in several previous studies of the acquisition of Japanese, such as Clancy (1986), Ito (1990) and Okubo (1967). Some of their examples are in (8).

- (8) a. tabe-ru nai
eat (-P) not
'(I will) not eat'
- b. deki-ta nai
can.do(+P) not
'(I) couldn't do it'
- c. ku-ru nai
come(-P) not
'(xxx will) not come'
- d. kowa-i nai
scared(-P) not
'(I) am not scared'
- e. samu-i nai (2;2)
cold(-P)not
'(it) is not cold'
- f. ooki-i nai (2;5)
big(-P) not
'(it) is not big'
- (a.b., from Clancy 1986, c.e.f., from Ito 1990, d. from Okubo 1967)

The fact that the same observation is reported by various researchers demonstrates its generality.

Moreover, although there are some children who do not exhibit External Negation, the phenomenon cannot be taken to be accidental in the data of those children who do, as shown in Table 1.

Table 1: Development of Negation Types with Tensed Verbs and Adjectives

Child Name: TOSHI	Neg with Verbs		
		2;3-2;8	2;9-2;11
	External Negation	26	4
	Internal Negation	23	35
	Neg with Adjectives		
		2;2-2;6	2;7-2;11
	External Negation	0	0
	Internal Negation	0	8

Child Name: KEN	Neg with Verbs		
		2;8-2;10	
	External Negation	34	
	Internal Negation	74	
	Neg with Adjectives		
		2;8-2;10	
Child Name: MASANORI	Neg with Verbs		
		2;4	2;5
	External Negation	8	0
	Internal Negation	17	17
	Neg with Adjectives		
		2;4	2;5
(*= A-stem+i+ku+nai)	External Negation	2*	0
	Internal Negation	3	1
Child Name: MANABU	Neg with Verbs		
		2;5-2;6	2;7-2;9
	External Negation	3	0
	Internal Negation	12	27
	Neg with Adjectives		
		2;5-2;9	
	External Negation	0	
	Internal Negation	2	

The data here are not presented for the purpose of illustrating stage-like development. The point is, simply, that External Negation is not too rare for serious consideration. It is quite frequent in the first stage of three of the four children, and thus it does not seem to be a negligible peripheral phenomenon in the relevant cases.⁴ Given this, we take

⁴Some comments on the data are in order. First, the data are not completely satisfactory in a few respects. The recording may have started too late for the observation of MANABU, who produced few cases of External Negation. In contrast, KEN's recording had to be terminated before he began to produce Internal Negation.

Second, examples with potential targets of imitation such as (i) below are excluded from counts.

- (i) ADULT: chodai.
 give(to me) ='Give (it to me).'
- CHILD: chodai na-i.
 give(to me) NEG ='(I will) not give (it to you)'

External Negation as a grammar-based phenomenon which can (optionally) arise in the acquisition of Japanese. Hereafter, we focus on the negation of verbs only, for which we have better evidence, though our analysis could extend to the negation of adjectives as well.

2. Two Types of Analyses

2.1. *Morphological Error or Outside NEG?*

We assume that negative sentences in adult Japanese have the structure in (9) (cf. Kato 1985). The negative marker is finite and it raises from NEG to I:⁵ V or A is inflected as non-finite.

(9)			IP	
		NEGP		I
	VP		NEG	
	Stem+NF-affix (=non-finite)	na-	-i/-kat-ta (=finite)	

Child Japanese differs from adult Japanese in that the negative marker appears to the right of V or A with Tense-inflection. Assuming the left-branching structure, this means that NEG is higher than the V or A with Tense-inflection affixes.

Broadly speaking, there are two ways to describe External Negation in child Japanese. One is to claim that the child's structure is essentially the same as the adults', except that V or A is non-finite, as in (10), despite the apparent finite Tense-inflection on the verb. This would be similar to the analysis of child English negation in Déprez and Pierce (1993), in that the sentential structure itself remains the same for child grammar and adult grammar.

(SUMIHARE's data presented at the conference is deleted from Table 1 because it turned out that the data have a number of such imitative cases).

Third, it seems to be the case that External Negation with past forms is very limited when the imitative examples are excluded, though previous studies do not appear to make such a distinction. This fact is consistent with the proposal to be presented in this paper.

Fourth, External Negation with adjectives may develop differently from external negation with verbs, but this has yet to be shown with concrete evidence.

⁵In this paper, we posit morphemes under relevant syntactic nodes such as NEG or I and assume that they merge by head-to-head raising, following Chomsky (1991). The proposals in this paper are translatable into the feature-checking system of Chomsky (1992), which does not decompose morphemes in building phrase-structures, but for our purposes, there are no obvious merits for the translation. Since morphological alternations are crucial in our discussion, we here choose the system in Chomsky (1991), which presents morphological mergers in a more visual manner.

- (10)
- | | | | |
|---------------|------|-----|-----------|
| | | IP | |
| | NEGP | | I |
| VP | | NEG | |
| Stem+T-affix | na- | | -i |
| (=non-finite) | | | (=finite) |

On this view we would have to assume that verbs or adjectives are merged with T(ense)-affixes in the lexicon and this makes them non-finite in some sense. A variant is to have *nai* in NEG, without raising to I, but this should not allow LF V-to-I raising over NEG, since it induces the Blocking effect of NEG, which should derive from UG Principles (e.g., ECP in Chomsky 1991). This variant will be discussed later in section 4.

The other analysis is to posit NEG structurally higher than I, as in (11). This is suggested in Ito (1990) and Nakamura (1992). It would be similar to the analyses of External Negation in child English proposed in Bellugi (1967), Menyuk (1969), etc.

- (11)
- | | | | |
|------|-----------|---------|---------------|
| | | IP/NEGP | |
| | IP | | NEG |
| VP | | I | |
| Stem | T-affix | | na-i |
| | (=finite) | | (=non-finite) |

A variant of this analysis is to have a second finite IP above the NEGP in (11) and assume that the NEG stem incorporates into *-i* in the higher I by raising. This would result in a bi-clausal structure. Since arguments against (11) to be presented in section 3 will apply to the bi-clausal analysis as well, we put it aside, to make the comparison simple.

2.2. *Some Reasons to Prefer Outside NEG*

There are some preliminary reasons to prefer the structure in (11), though we will not adopt it in the end. First, Japanese past/non-past inflection for verbs is acquired very early in affirmative sentences. For example, Nakamura (1992) examined data FROM four Japanese children and he found that all of them acquired the verbal past/non-past morphology before the age of two (cf. Clancy (1986, p.425-7) and references therein for the acquisition of Japanese inflectional morphology in general). Thus, it is plausible to estimate that the Tense-inflections in children's External Negation are finite.

Secondly, although the Negative word *na-i* is finite and becomes *na-kat-ta* for past tense, it is very rare to find the past tense form of negation at the stage of External Negation, as shown in (12).

(12)	Child (age)	Occurrences of <i>na-kat-ta</i> (past of <i>na-i</i>)
	TOSHI (2;3-2;8)	Not Found
	KEN (2;8-2;10)	1 (<i>aketa nakatta naa</i>)
	MASANORI (2;4)	2 (<i>baggu nakatta; nakatta no?</i>)

Thus, it is possible to take *na-i* to be unanalyzed and non-finite at first, like negative markers in Romance or Germanic.

If it turns out that External Negation in child Japanese is indeed generated by the structure in (11), then it raises various questions. In particular, it is not consistent with Déprez and Pierce (1993)'s structure of child English negation, hence it either calls for an additional parameter or argues against their analysis.

3. External Negation as Morphological Error

As we will see shortly, however, there is a curious asymmetry in External Negation in child Japanese, which cannot be explained by the analysis of Outside Neg in (11), but which can be accounted for by the analysis in (10). First, we must digress briefly to discuss the morphology of Japanese verbs.

3.1. Two Kinds of Stems in Japanese Verbal Morphology

The basic paradigm of Japanese inflectional morphology consists of stems and affixes. For verbs, there are several patterns in the paradigm, but here we want to identify just two classes which distinguish themselves by the final sound of the stem.

In the first class, the stem ends with a consonant (i.e., Godan-katsuyoo in traditional Japanese grammar). We will call it the Consonantal Verb. The paradigm of the Consonantal Verbs is exemplified in (13). This class takes *-u* as a nonpast affix, and undergoes some phonological change(s) when it combines with the past affix *-ta*. Negation in this class is derived by having the finite negative predicate to the right of the irrealis form derived by a stem plus an affix /a/.

(13)	Consonantal:			
		'enter'	'attach'	'drink'
	(-P):	hair-u	tsuk-u	nom-u
	(+P):	hait-ta	tsui-ta	non-da
	NEG,(-P):	hair-a na-i	tsuk-a na-i	nom-a na-i
		((-P): non-past, (+P): past)		

Verbs of the second class have a stem ending with a vowel, and we will call it the Vocalic Verb here. The paradigm is in (14). It takes *-ru* as a nonpast affix and *-ta* as a past affix. There is no phonological change in forming the past in this class. A

negative form of this class is derived by directly combining a stem and a negative predicate, since the irrealis of a Vocalic Verb is equal to the stem.

(14) Vocalic:

	'be/exist'	'sleep'	'eat'
(-P):	i-ru	ne-ru	tabe-ru
(+P):	i-ta	ne-ta	tabe-ta
NEG,(-P):	i na-i	ne na-i	tabe na-i

((-P): non-past, (+P): past)

In addition, an auxiliary construction with *-te-(i)ru* is classified as a Vocalic Verb here. The paradigm is in (15). This construction consists of a non-finite verb, ending with *-te*, and an auxiliary *i-ru*. The /i/ sound in the auxiliary is optionally pronounced after *-te*. This construction is ambiguous between progressive and resultative.

(15) *-te-(i)ru* (Vocalic):

	'is entering/has entered'	'is sleeping'
(-P):	hait-te (i)-ru	ne-te (i)-ru
(+P):	hait-te (i)-ta	ne-te (i)-ta
NEG,(-P):	hait-te (i)-na-i	ne-te (i)-na-i

((-P): non-past, (+P): past)

The alternating parts in the paradigm, *-ru*, *-ta*, *-na-i*, are always preceded by a vowel, which may be either /e/ or /i/, depending on the optional sound /i/. Hence, the *-te-(i)ru* construction is grouped with the Vocalic Verbs.

3.2. *A Stem-Oriented Asymmetry in Child External Negation*

Given the dichotomy of verbs according to the stem-final sound, an asymmetry emerges in the data of External Negation between the Consonantal Verbs and the Vocalic Verbs. As shown in Table 2, for Consonantal Verbs, there is a period in which children produce External Negation as often as Internal Negation. However, it turns out that, in the same period, External Negation is exceedingly rare with Vocalic Verbs.

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Table 2: Negation Types in child Japanese data divided into two Stem-Classes⁶

Child:	TOSHI (2;3-2;8)		KEN (2;8-2;10)		MASANORI (2;4)	
Consonantal Verbs:	External	26	External	31	External	6
	Internal	10	Internal	25	Internal	5
(% of External Neg:		72%		55%		55%)
Vocalic Verbs:	External	0	External	3	External	2
	Internal	26	Internal	58	Internal	34
(% of External Neg:		0%		5%		6%)

For each child, the Consonantal Verbs and the Vocalic Verbs exhibit a very significant difference with respect to the negation types by the Binomial Test ($p < 10^{-9}$).⁷

Note that the asymmetry is completely unexpected on an analysis which posits clause-external NEG, as in (11), repeated here.

(11)

		IP/NEGP	
	IP		NEG
	VP	I	
	Stem	T-affix (=finite)	na-i (=non-finite)

External Negation should occur uniformly across the two stem-classes if it is derived by having NEG structurally higher than I. But this is not the case; External Negation occurs in significantly different proportions in each stem-class, as shown by the data of all the three children in Table 2.

In contrast, the asymmetry is plausibly expected on the analysis which attributes External Negation to a morphological error, namely, using forms with T-affixes wrongly as non-finite irrealis. This is illustrated in (10), which is repeated below.

⁶Note that Table 2 includes the negation data of the *-te-iru* constructions, unlike Table 1. Since there are no cases of External Negation of *-te-iru* in my data, the total number of cases of Internal Negation is larger in Table 2 than in Table 1, as a result. This may be due to the auxiliary status of *iru* in *-te-iru*, and if so, it can be considered to be a case of the general phenomenon in (22) of this paper.

⁷Each category of Table 2 includes a diverse group of verbs. It is not the case that, for example, all instances of Internal Negation of a child consist of *i-nai* only.

- (10)
- | | | | |
|------------------|-----------|-----|---|
| | | IP | |
| | NEGP | | I |
| VP | | NEG | |
| Stem+T-affix na- | -i | | |
| (=non-finite) | (=finite) | | |

Under this analysis, External Negation occurs when a stem and its T-affix are merged in the lexicon and hence non-finite. To derive adult-like Internal Negation, the stem of a verb must be isolated and turned into irrealis. This is the source of the asymmetry under the analysis in (10).

It is plausible that the isolation of stems, which is necessary for deriving the irrealis form, is relatively more difficult for Consonantal Verbs than for Vocalic Verbs, because Japanese phonology prohibits Coda consonants except for /n/ (cf. J. Ito 1986), which triggers various phonological changes in the stem-final consonants. When the nonpast form and the past form of Consonantal Verbs are compared in (13), we see that there are phonological alternations in the final sound of the stem (i.e., Gemination, Velar-Vocalization, and Place-Assimilation, respectively). In contrast, the underlying form of the nonpast/past pair of Vocalic Verbs is equal to the stem and transparent, as we can observe with examples in (14).

In this way, the two classes differ with respect to the complexity of stem-isolation. Then, it is expected that children acquire the irrealis form earlier with Vocalic Verbs than Consonantal Verbs, and hence the asymmetry of External Negation follows, if the structure is (10).⁸ It is the structure in (10) which can account for this difference of stem-types. Note that on this account, a tense-inflected form in children's External Negation is a substitute of irrealis.

To sum up so far, despite the initial plausibilities, the structure with NEG outside IP has turned out to be inadequate for External Negation in child Japanese. We have arrived at quite surprising conclusions: i) NEG is lower than I in child Japanese, as well as in adult Japanese, ii) finite forms of Consonantal Verbs are used as substitutes for irrealis and hence non-finite in External Negation in child Japanese.

The first conclusion supports Déprez and Pierce's analysis of English children's negation partially, and, more generally, the fixed status of NEG in language development proposed in Lebeaux (1989) and Roeper (1974). These studies, as well as the present study, claim that NEG in child grammar is in the adult-like configuration and that constituents other than NEG cause non-adult-like negative sentences: in Déprez and

⁸Nina Hyams (p.c.) suggested that this account may be supported if children do not produce past forms of Consonantal Verbs with misanalyzed stems, such as **hai-ta* 'enter', **tsu-ta* 'attach', etc., for that indicates that children at the early stage do not attempt an analysis on stems of Consonantal Verbs. The facts seem to be that such misanalysis is indeed almost non-existent.

Pierce (1993), the non-raising of a subject NP from Spec of VP, and in this paper, the delay in acquisition of irrealis forms of Consonantal Verbs. Thus, our analysis has shown that Negation in child Japanese does not contradict Déprez and Pierce's analysis of child English.

The second conclusion may appear to be a drawback, but it does not conflict with any principles of UG or generalizations in child grammar, for it is a matter of lexicon. As a matter of fact, such a case is found in adult English as well. English verbs' finite forms and non-finite imperative forms are homophonous in many cases, as in (16a) and (16b).

- (16) a. I walk. c. I am quiet.
 b. Walk! d. Be quiet!

These conclusions suggest that 'External Negation' is actually a misleading term: it is 'Internal Negation' which takes a finite form to be non-finite irrealis when the irrealis form is underivable, in the case of child Japanese. We will continue to use the term just for the sake of simplicity.

4. Further Issues

In this section, we will point out further issues of child negation structure and suggest prospective lines of inquiry. Strictly speaking, the arguments so far is not yet perfectly sufficient for adopting the structure in (10) for negation in child Japanese. There is its slight variant, (10)', which could also account for the stem-oriented asymmetry, as did the structure in (10).

- (10)'
- | | | | |
|--|---------------|---------------|---|
| | | IP | |
| | | NEGP | I |
| | VP | NEG | |
| | stem+T-affix | nai | ∅ |
| | (=non-finite) | (=non-finite) | |

The only difference between them is whether *na-i* is finite or not. In (10), it is finite and raises from NEG to I. In (10)', it is non-finite and does not raise to I (not even at LF, cf. section 2.1.).

Each structure results in different predictions and implications. We first discuss two phenomena found in the child syntax of other languages and then come back to the comparison of (10) and (10)'.

4.1. *Root Non-finite forms*

As discussed in Wexler (1992), root infinitives are found in many child European languages. For instance, Pierce (1992) has shown that French children produce both the finite form and the infinitive form in root sentences, as exemplified in (17).

- | | | | |
|------|-----|--|-----------------------------|
| (17) | a. | voir l'auto papa.
(see(INF) papa's car) | Child Age
(Nathalie 2;2) |
| | a'. | elle la voit l'auto.
(she it sees(FIN) the car) | (Nathalie 2;2) |
| | b. | dormir petit bébé.
(sleep(INF) little baby) | (Daniel 1;11) |
| | b'. | dort bébé.
(sleeps(FIN) baby) | (Daniel 1;11) |
- from Pierce (1992)
- (INF: infinitive, FIN: finite)

Similar data are found in Dutch, German, and so on (cf. Wexler 1992).

In addition, as noted in Sano and Hyams (1994), other non-finite forms such as participles are found in root sentences of many child languages including English and Italian.

- | | | | | | | | |
|---------------------------------------|---|----------------------------|-------------------------------------|---------------------------------------|----------------------------|--------------------------------|----------------------|
| (18) | Adam laughing. (ADAM 2;4)
I brushing. (EVE 1;9)
Becca making a table. (NINA 2;0)
(cf. Brown 1973, Suppes 1973, MacWhinney and Snow 1985 on data) | | | | | | |
| (19) | <table border="0"> <tr> <td style="vertical-align: top;">Visto mao.
'Seen kitty'</td> <td style="vertical-align: top;">Cotta a pappa.
'Cooked the food'</td> </tr> <tr> <td style="vertical-align: top;">Rotta a pallina.
'Broken the ball'</td> <td style="vertical-align: top;">Vista etta.
'Seen this'</td> </tr> <tr> <td style="vertical-align: top;">Porta chiusa.
'Door closed'</td> <td style="vertical-align: top;">(from Antelmi, 1992)</td> </tr> </table> | Visto mao.
'Seen kitty' | Cotta a pappa.
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'Seen this' | Porta chiusa.
'Door closed' | (from Antelmi, 1992) |
| Visto mao.
'Seen kitty' | Cotta a pappa.
'Cooked the food' | | | | | | |
| Rotta a pallina.
'Broken the ball' | Vista etta.
'Seen this' | | | | | | |
| Porta chiusa.
'Door closed' | (from Antelmi, 1992) | | | | | | |

These root non-finite forms, including the infinitives, may appear to indicate that children do not distinguish finite forms and non-finite forms. However, recent studies in language acquisition argue to the contrary. In languages with overt verb-movement, it is observed that the verbs are mostly placed in different positions by finiteness (cf. Wexler 1992 and references therein). For example, Pierce (1992) has found that verb-placement in the data of child French exhibits the adult-like distribution: finite forms come before Neg and infinitive forms come after Neg.

(20) Verb placement in negatives as a function of tense

	Philippe		Grégoire	
	+Finite	- Finite	+Finite	
-Finite				
V-Neg 52	1	V-Neg 43	0	
Neg-V 3	4	Neg-V 0	0	
	Nathalie		Daniel	
	+Finite	- Finite	+Finite	
-Finite				
V-Neg 68	0	V-Neg 53	1	
Neg-V 3	82	Neg-V 3	36	

(p <.001, from Pierce (1992, p.66))

Given this, following Pesetsky (1993), Sano and Hyams (1994), and Hyams (1994), we describe the phenomenon of root non-finite forms as in (21).

- (21) Child languages allow I to be unspecified (or to be filled by a phonetically-null element).

4.2. *Constant Finiteness of Root Auxiliaries*

There is another general phenomenon in child syntax, and that is about auxiliaries. Auxiliaries, including modals, are always finite in root clauses, even at the stage where some errors of finiteness are observed with lexical verbs.⁹ First, Wexler (1992, p.78) points out that auxiliaries are never found to be in non-finite forms, in child languages having root infinitives (cf. deHaan 1987 for Dutch, and Poeppel and Wexler 1993 for German). Second, although finite lexical verbs are sometimes found in the position of non-finite forms, auxiliaries are never found in the non-finite position (cf. Clahsen et al. 1994 for German, Verris and Weissenborn 1992 for French, Barbier 1993 for discussion; cf. also fn. 6). Thus, we have another generalization in (22).

- (22) Root auxiliaries (including modals) are constantly finite in language development.

4.3. *Predictions and Implications of Japanese Negation Structure*

Let's now come back to the comparison of the two candidates for the negation structure of child Japanese. If (10)' is the right structure, the I node is left empty, and this is exactly the same with (21). On the other hand, according to the structure (10)', the negative marker *na-i* is non-finite in child Japanese, although it is an auxiliary in

⁹Here we are discussing just the sentences with one root auxiliary. Sentences with more than one root auxiliary are outside our scope, and they are probably very rare or non-existent at the early stage we are interested in.

adult Japanese, in the sense that it marks Tense when it cooccurs with a verb or an adjective. Then, the structure (10)' does not meet the generalization (22). In contrast, if (10) is the right structure, no inference can be drawn with respect to the universality of (21). The I node is overtly filled in (10), but it could be just because *na-i* is an auxiliary, and it would remain open whether the I node could be empty in affirmative sentences. On the other hand, the structure in (10) preserves the constant finiteness of auxiliaries in (22). These differences of implications are summarized in (23).

(23)		Root NF	AUX Constantly Finite
		(21)	(22)
	(10)'	universal	parameterized
	(10)	(neutral)	universal

Then, how can we decide which is correct? The difference between (10) and (10)' boils down to the I node: whether it is filled by an overt element in the root clause, or it may be left empty. The empirical data to be examined are the root non-finite forms in affirmative sentences. In (24), there are examples of auxiliary constructions. In adult Japanese, the auxiliary (*i*)*ru* cannot be omitted in root contexts such as those in (24); if it is omitted, it must be an imperative or a continuative subordinate clause.

- (24) a. arui-te *((i)-ru)
 walk-TE be
 'pro is walking'
- b. koware-te *((i)-ru)
 break-TE be
 'pro has been broken/ pro is breaking'

If the root non-finite forms ending with *-te* are not found as non-imperatives in Japanese child data, then (10)' should not be adopted.¹⁰ Empirical examinations are in preparation on this point.

To repeat the main points, we have concluded that External Negation in child Japanese has a structure identical to adult Japanese negation, based on morphological considerations. The child data which apparently suggest that Neg is in a clause-external position has turned out to be due to a morphological error: using a finite form as a substitute for the irrealis form in negative sentences. Thus, External Negation in child Japanese is shown to be compatible with the analysis of child English negation in Déprez and Pierce (1993).

¹⁰If this conclusion is reached, it conflicts with a speculative proposal on I in Japanese in Sano and Hyams (1994). That is, it is suggested there that the I node in Japanese is not specified for finiteness (or for agreement (cf. Fukui 1986, Kitagawa 1986, Kuroda 1988)) and hence triggers no V-raising. We are not in a position to discuss this here, but it seems that the proposal requires reconsideration. Since the claims on the development of null arguments in Sano and Hyams (1994) are separable from the nature of Japanese I node, it seems better to put this controversial point aside for further investigation.

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