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# 10 Children's 'erroneous' intransitives, transitives, and causatives: their implications for syntactic theory

## 1 Introduction

"Erroneous" transitive-intransitive alternations are universally observed in children's speech across languages (Marcotte 2005, among others). English- and Portuguese-speaking children, for example, produce such erroneous sentences as (1) and (2), respectively.

- (1) a. Mommy, can you **stay** this open?<sup>1</sup>  
(Bowerman 1974)
- b. Don't **giggle** me. (3;0)  
(Bowerman 1974, 1982)
- c. Come and see what Jenny got today. **Pull. Pull!** (3;01)  
(Lord 1979)
- (2) Quem **morreu** ele?  
'Who died him?'  
(Figueira 1984)

In (1a), the context requires a transitive verb such as *keep*, but the child uses the intransitive verb *stay* instead. In (1b), the intransitive verb *giggle* is used as a transitive verb. (1c), by contrast, shows the child using a transitive verb (*pull*) as an intransitive verb: the child utters this while pulling at his reluctant mother and demanding that she come along with him. The example from Portuguese in (2) similarly shows a child using an intransitive verb (*die*) where a transitive verb (*kill*) would be expected in adult speech.

"Erroneous" transitive-intransitive alternations produced by children speaking Japanese, an agglutinative language with rich case marking, are observed

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<sup>1</sup> The boldfaced form indicates non-adult-like usage.

most frequently from ages 2 to 4. Japanese clearly shows that celebrated “verbal errors” of this type made by children can be considered as morphological in nature since there is no change in the number of arguments at issue and the case marking on the arguments is adult-like.

- (3) a. *To o aite* (Sumihare (=S), 2;01)  
 door ACC open(vi)  
 ‘Please open the door.’
- b. *Nee, ati o hirogatte.* (Akkun (=A), 3;07)  
 INT legs ACC spread(vi)-GER  
 ‘Please spread your legs.’
- c. *Todokok-ka, ano hito ni todok-(y)oo todok-(y)oo.* (A, 4;08)  
 arrive(vi)-let’s that person DAT arrive(vi)-let’s arrive(vi)-let’s  
 ‘Let’s send (it). Let’s send (it) to that person.’

Okubo (1975) also reports that children have difficulties in using the adult form of the causative verbs as well. For instance, children at around two of age produce *haite* (vi-GER) in place of *hakasite* ‘wear-CAUS’, *nureta* (vi) in place of *nurasita* ‘wet-CAUS’ and *anyo-suru* ‘walk-do (vi)’ in place of *anyo saseru* ‘walk-do-CAUS’.

Murasugi & Hashimoto (2004) provide a uniform account of such verbal errors following Larson’s (1988) *v*-VP frame or VP-shell hypothesis, according to which: (i) the predicate-argument structures of large V’s and small *v*’s are acquired early, (ii) children assume [ $\pm$ cause] *v* to be phonetically null at one stage, and (iii) what requires time is the acquisition of the lexical form of each V and the forms in which [ $\pm$ cause] small *v*’s are realized. Their analysis of the acquisition of complex predicates provides evidence supporting the VP-shell hypothesis.

In this chapter, Murasugi & Hashimoto’s (2004) *v*-VP frame analysis of acquisition of Japanese verbs and complex predicates is developed and modified based on new empirical evidence from an analysis of common errors made by Japanese-speaking children that have been widely observed in longitudinal studies.

## 2 Descriptive adequacy

Before we discuss our analysis of the children’s ‘errors’ in question, we consider in this section if it is descriptively adequate to view these as a typical phenomenon found at the intermediate stage of first language grammar acquisition.

The fact that this phenomenon has been observed widely by various researchers clearly points to a positive answer to this question. See, for example, the conversational data given in (4).

- (4) Child (3;11): *otootyan, mado ai-te.*  
 daddy window open(vi)-GER  
 Intended meaning: 'Daddy, please open the window.'
- Father: *Mado ake-te, daro.*  
 window open(vt)-GER, isn't it?  
 'You mean, open the window.'
- Child: *Un, mado ai-te yo.*  
 yeah window open(vi)-GER SFP  
 Intended meaning: 'Yeah, Daddy, please open the window.'
- Father: *Mado ake-te, da yo.*  
 window open(vt)-GER COP SFP  
 'It should be "Open the window".'
- Child: *likara, mado ai-te yo, Ootootyan.*  
 anyway window open(vi)-GER SFP daddy  
 Intended meaning: 'Anyway, please open the window, Daddy.'  
 (Otsu 2002: 185 [our translation])

In (4), in attempting to ask his father to open the window, the child produces the erroneous intransitive request form *ai-te* 'open (vi)' instead of the expected transitive form *ake-te* 'open (vt)', despite direct negative evidence to the contrary given by the father. Similarly, Ito (2005) and Noji (1973–1977), among others, observe that the intransitive form *ai-te* 'open (vi)' is used in place of the transitive form *ake-te* 'open (vt)' by children in their studies, as illustrated in (5).

- (5) a. *Oniityan ga aka nai.* (2;09)  
 brother NOM open(vi) NEG  
 Literal meaning: Brother is not opened (the door).  
 Intended meaning: Brother does not open (the door).  
 (Ito 2005: 3)
- b. *Baatyan aite.* (S, 2;00)  
 grandma open (vi)  
 Intended meaning: Grandma, please open (the door).



The question that arises next is whether such overextension in the usage of intransitives and transitives always occurs in one direction. The answer is, in fact, negative. Just as in the English example (1c), Japanese-speaking children also use transitives instead of intransitives, as shown in (6). In (6a), the child (2;1) uses the past form *nui-ta* 'pull.out-PST' of the transitive verb *nuk-u* instead of the expected past form *nuke-ta* 'come.out-PST' of the intransitive verb *nuke-ru*. In (6b), the child (2;1) likewise uses the transitive verb *ak-en* 'open(vt)-NEG' instead of the intransitive verb *ak-an* 'open(vi)-NEG', even though the intended meaning is 'The door does not open.'

(6) a. ***Nui-ta***                      *koko*. (S, 2;01)

pull.out(vt)-PST here

Literal meaning: 'I pulled (this) out here.'

Intended meaning: '(This) came out here.'

b. SUM: ***Ak-en***                      ***ak-en***. (S, 2;01)

open(vt)-NEG open(vt)-NEG

Literal meaning: '(I) don't open it. (I) don't open it.'

Intended meaning: '(It) doesn't open. (It) doesn't open.'

FAT (to MOT): *Ak-an*                      *tte*                      *osiete yari nasai*. (unaccusative)

open(vi)-NEG COMP tell                      give IMP

'Tell him that it should be "akan (vi)".'

SUM: *Ak-an*.

open(vi)-NEG

'(It) doesn't open.'

SUM: ***Ak-en***                      ***ak-en***                      ***ak-en***                      *wa*                      ***ak-en***                      *ga*.

open(vt)-NEG open(vt)-NEG open(vt)-NEG SFP open(vt)-NEG SFP

Literal meaning: '(I) don't open it. (I) don't open. (I) don't open it.'

Intended meaning: '(It) doesn't open. (It) doesn't open.

(It) doesn't open.'

FAT: *Ak-anai*                      *yo*.

open(vi)-NEG SFP

'It doesn't open.'

SUM: ***Ak-en***                      *yo*.

open(vt)-NEG SFP

Literal meaning: '(I) don't open it.'

Intended meaning: '(It) doesn't open.'



Although the child is able to parrot his father's direct correction once, he subsequently keeps producing the transitive form *ak-en* (vt) for the intransitive form *ak-an* (vi). These examples illustrate that overextension of intransitives and transitives is not always in one direction.

Are such errors, then, Japanese-specific and only found in transitive-intransitive verbs? The answer is clearly negative. As noted above, "errors" involving causatives by children have also been widely observed in the acquisition of various languages. As we have seen in the previous section, Bowerman (1974) and Figueira (1984), for example, report that there is a stage where children are unable to produce the adult form of the causative in English and Portuguese, respectively. In (7a), the child tells his or her mother to let (or help) him or her drink milk. However, the causative verb is omitted. Similar examples can be found in Portuguese, as shown in (8).

(7) a. *You can **drink** me the milk.* (Jennifer 3;08)  
(Lord 1979)

b. *I'm **singing** him.* (Christy 3;01)  
(Bowerman 1974, 1982)

(8) (...) *este balanço vai te cair.*  
'This swing is going to fall you.'  
Intended meaning: 'This swing will make you fall'  
(Figueira 1984)

Japanese-speaking children, at around 2 to 5 years of age, also produce such erroneous verb forms as in (9).

(9) Child (2;02): *Papa **huusen hukuran-de.***  
Daddy balloon swell(vi)-GER  
Intended meaning: 'Daddy, please blow up the balloon.'  
Father: *Hukuran-de zyanai desyo hukuram-as-ite desyo.*  
swell-GER not isn't it swell-CAUS-GER isn't it  
'It's not *hukurande* 'swell'. It should be *hukuramas-ite* 'blow up'.  
Child: ***Hukuran-de.***  
swell(vi)-GER  
Intended meaning: 'Blow up (the balloon).'  
...(omitted)...

Father: *Hukuram-as-ite*.  
 swell-CAUS-GER  
 ‘(You should say) blow up (the balloon).’

Child: *Hukuran-de. Hukuran-de*.  
 swell(vi)-GER swell-GER  
 Intended meaning: ‘Blow up (the balloon)! Blow up (the balloon)!’  
 (Suzuki 1987:172 [our translation])

The child asks his father to blow up the balloon. The father provides the child with the “correct” lexical causative form *hukuram-as-ite* ‘blow up (vt)’, but to no avail. The child continues to produce repeatedly the erroneous intransitive imperative form *hukuran-de* ‘swell (vi)’.

The examples given above indicate not only that errors of this type are commonly observed in complex predicates across languages, but also that direct negative evidence is ineffective in grammar acquisition.

### 3 VP-shell analysis of transitive-intransitive alternations revisited

Murasugi & Hashimoto (2004), based on their longitudinal study of the acquisition of verbs – in particular, transitive-intransitive verb pairs and causatives – propose that there are four steps to acquiring verbs and morphological *-(s)ase* causatives in Japanese.

- (10) Stage I: Small *v* is *tiyu/tita/tite* ‘do/did/doing’.  
 Stage II: Small *v* is null.  
 Stage III: Acquisition of lexical causatives and transitive verbs;  
 occasional erroneous lexical realization of *v*.  
 Stage IV: Acquisition of syntactic causatives;  
 occasional erroneous lexical realization of *V*.

In what follows, we present their analysis and further empirical evidence supporting their proposal.<sup>2</sup>

<sup>2</sup> This analysis is supported by Murasugi, Hashimoto & Kato (2005). They report, based on Murasugi & Hashimoto’s longitudinal study of the child Akkun, that lexical *-(s)ase* causatives are acquired earlier than syntactic causatives. The same results are obtained in an experimental



Before Stage I, according to Murasugi & Hashimoto (2004), Japanese-speaking children produce sentences without overt verbs beginning around the age of 2. Some examples of this are shown in (11a) and (11b).

- (11) a. *Motto koe buubu* Ø (2;01) Ø = *age-ru* (give)  
 more this water  
 'I will give) more water to this.'
- b. *Koe Papa hai doozyo* Ø (2;00) Ø = *suru* (do)  
 this Daddy yes please  
 'This one. (I want to give it) to Daddy.'  
 (Murasugi & Hashimoto 2004:3)

In (11a), the expected verb *age-ru* 'give' is missing. In (11b), Akkun produces *hai doozyo*. *Hai* means 'yes' and *doozyo* means 'please,' but in combination the phrase *hai doozyo* means 'Here you are.' Murasugi & Hashimoto (2004) consider that before Stage I, the child initially uses *hai doozyo* to express the meaning of 'give' or possibly the transfer of an item from one person to another in general. The child does not use an actual verb in the ditransitive construction here.

Akkun's Stage I (2;05–2;09) begins at around 2;05, at which point he starts to place *tiyu/tita/tite*<sup>3</sup> in sentence-final position quite productively, as shown in (12a) through (12c).

- (12) a. *Mama Akkun hai doozyo tiyu.* (A, 2;05)  
 Mommy yes please do  
 'Akkun (/I) will give it to Mommy.'
- b. *Mama Akkun paku tiyu.* (A, 2;07)  
 Mommy onomatopoeia do  
 'Mommy, please let Akkun(/me) eat this.'

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study conducted by Fuji (2006), a corpus analysis by Murasugi, Hashimoto & Fuji (2007), and a longitudinal study by Nakatani (2010). These findings of the two stages in acquiring *-(s)ase* causatives suggest that there are two types of *-(s)ase* causative in adult Japanese: syntactic and lexical. This is because they are clearly distinguished and there is no reason to suppose that the later acquisition of syntactic causatives results in the loss of lexical causatives. See also Okabe (2007).

<sup>3</sup> *Tiyu/tita/tite* are *suru/sita/site* in adult speech and correspond in meaning to 'do/did/doing' in English (Murasugi & Hashimoto 2004: 4).



c. *Akkun nezi kuyukuyu tite, konoko syabeyu.* (A, 2;09)

screw turn around doing this one talk

‘When Akkun (/I) turns this screw around, it talks.’

d. *Tootyān, ozityān ga dondon si-ta yo.* (S, 1;11)

Daddy a man NOM beat (*onomatopoeia*) do-PST SFP

‘Daddy, a man beat (a wall).’

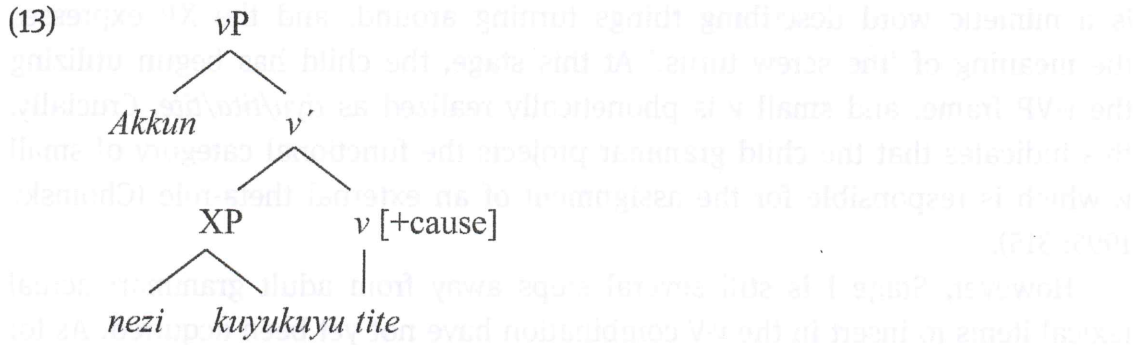
A parallel pattern is found in the longitudinal observation of the child Sumihare reported in Noji (1973–1977) (Murasugi, Hashimoto & Fuji 2007). Although Sumihare’s Stage I (1;11–2;1) begins at around 1;11, 6 months earlier than Akkun’s, Sumihare starts putting *tiyu/tita/tite* (*suru/sita/site*) in sentence-final position at this stage just as Akkun does. An example of this is cited in (12d).

It should be noted that *tiyu/tita/tite* never appears before Stage I. The “predicates” that occur with *tiyu/tita/tite* are typically onomatopoeic or mimetic expressions. For example, *paku* in (12b) is the sound that describes a person putting food into his/her mouth. The utterance in (12b) means, ‘Please, Mommy, put this in Akkun’s mouth’ or more literally, ‘Mommy makes this food go into Akkun’s mouth.’ *Kuyukuyu* in (12c), which corresponds to *kurukuru* in adult speech, is a mimetic word describing things turning around. The child is trying to say that he will turn the screw, or more literally that he will cause the screw to turn around, and as a result the toy will talk.

The same pattern is observed in the Sumihare corpus. It is at 1;11 that *suru* (*tyuru*, or ‘do’) appears in this corpus, as shown in (12d). At this point, almost without exception, the *sita* form is used, but at 2;0, other conjugational forms of *suru* (*tyuru*) appear. *Suru* (*tyuru*)-forms can be considered to be one of the main “verbal” forms a child uses at this stage. The frequent use of *suru*-forms beginning around the age of two, under the *v*-VP frame analysis, indicates that children at this stage have acquired the *v*-VP frame, and that *v* is realized in their speech as *suru/sita/site*.

Murasugi & Hashimoto (2004) propose that children at this stage use *tiyu/tita/tite* to describe an activity that brings about a certain event or change of state. The adult counterpart to *tiyu/tita/tite*, *suru/sita/site*, is able to assign the agent role, like the English verb *do/did/doing*. The rest of the utterance describes the event or change of state brought about. Thus, *tiyu/tita/tite* seems to correspond exactly to small *v*.<sup>4</sup> The structure proposed by Murasugi & Hashimoto (2004) to the sentence (12c) is shown in (13).

<sup>4</sup> Note here that the hypothesis that *tiyu/tita/tite* corresponds to small *v* can be confirmed in the adult grammar of Malayalam. The *-(i)kk* suffix in this language introduces a new argument into the syntactic frame of the verb to which it attaches (Madhavan, 2006). According to



(Murasugi & Hashimoto 2004: 5)

In (13), *tite* describes an activity that causes a screw to turn around, and *Akkun* is the agent. The complement of small *v* is indicated not as VP but as XP because it lacks the categorical status of verb at this stage. Again, *kuyukuyu* (*kurukuru*)

Madhavan (2006), Malayalam has regular intransitive- transitive pairs, in which the suffix *-(i)kk* functions as a transitivizer, as in (i).

- (i) a. *muṅṅ-uka* / *mukk-uka*  
sink(vi)-inf    sink(vt)-inf
  - b. *poTT-uka* / *poTT-ikk-uka*  
break(vi)       break(vt)
- (Madhavan 2006:1)

This *-(i)kk* suffix also functions as a causativiser.

- (ii) *kara-y-uka* / *kara-y-ikk-uka*  
cry                make cry
- (Madhavan 2006:1)

However, the *-(i)kk* suffix is not allowed on loan (foreign) words in Malayalam: *cey* 'do' is used instead in such cases, as in (iii).

- (iii) a. *John Mary e kkonta ezut -ipp-ikk-iccu* (-ikk + -ikk → -ipp + -ikk)  
ACC Postposition write-CAUS-CAUS-PST  
'John made Mary write.'
- b. *John Mary e kkonta type ceyy-ikk-iccu*  
ACC Postposition do-CAUS-PST  
'John made Mary type.'
- c. \**John Mary e kkonta type-ipp-ikk-iccu*  
ACC Postposition -CAUS-CAUS-PST  
(Hany Babu, M.T. p.c.)

(iiic) is ill-formed since the causative *-ikk* is attached to the loan word *type*. Under Murasugi & Hashimoto's *v*-VP Frame analysis, in adult Malayalam, small *v* is realized as *do* in forming causatives on loan (foreign) words; in Stage I of Japanese child grammar, likewise, small *v* is realized as *do*. Thus, Stage I, where Japanese-speaking children use *suru* (*do*) to describe activities, corresponds to one type of causative formation in, say, adult Malayalam. Intermediate stages of grammar acquisition are thus restricted to what count as possible human grammars.



is a mimetic word describing things turning around, and the XP expresses the meaning of ‘the screw turns.’ At this stage, the child has begun utilizing the *v*-VP frame, and small *v* is phonetically realized as *tiyu/tita/tite*. Crucially, this indicates that the child grammar projects the functional category of small *v*, which is responsible for the assignment of an external theta-role (Chomsky 1995: 315).

However, Stage I is still several steps away from adult grammar: actual lexical items to insert in the *v*-V combination have not yet been acquired. As for Akkun, intransitive and ditransitive verbs are acquired at around 2;09, which we call Stage II (A: 2;09–4;08). The sentences in (14) are examples of the ‘correct’ usage of these verbs.

- (14) a. *Dango ga huta pakan tite, dango*  
 dumpling NOM lid onomatopoeia do-GER dumpling

*ga atta.* (A, 2;09)

NOM exist-PST

‘There was a dumpling (when I) opened the lid of the dumpling (box).’

- b. *Mama tyotto ageyu.* (A, 2;07)

Mommy a little give

‘Mommy, (I will) give you a little bit.’

(Murasugi & Hashimoto 2004:6)

In (14a), the intransitive verb *atta* ‘exist-PST’ appears, and in (14b), the ditransitive verb *ageru* ‘give’ is used in an adult-like way.

At the same time, Akkun exhibits interesting and consistent “errors” as he acquires actual lexical verbs. Note first that, in adult English, transitive and intransitive (unaccusative) verbs often take the same phonetic form, giving rise to alternations as in (15).

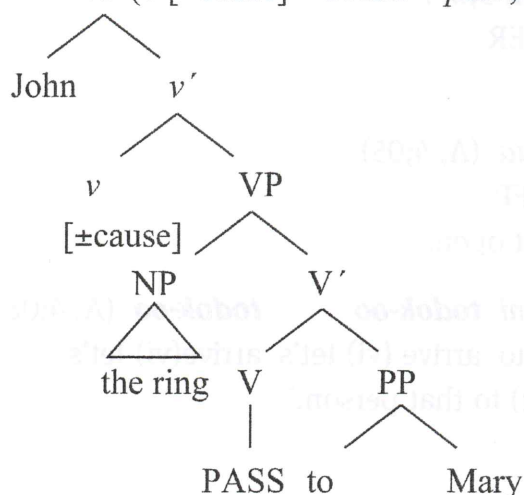
- (15) a. *John passed the ring to Mary.*

- b. *The ring passed to Mary.*

If the argument structures of these sentences are realized as in (16), then *v* is a “zero morpheme” without phonetic content whether it is [+cause], as in the case of (15a), or [-cause], as in the case of (15b).



(16)  $vP$  ( $v$  [+cause] + PASS = *pass*,  $v$  [-cause] + PASS = *pass*)



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

In adult Japanese, by contrast, transitivity and intransitivity (unaccusativity) are often marked by distinct suffixes, as illustrated in (17).

- |      |                                     |                                     |
|------|-------------------------------------|-------------------------------------|
| (17) | Transitive                          | Unaccusative                        |
| a.   | <i>watas-u</i> (pass.CAUS-PRS)      | <i>watar-u</i> (pass.INTR-PRS)      |
| b.   | <i>ak-e-ru</i> (open-CAUS-PRS)      | <i>ak-u</i> (open-PRS)              |
| c.   | <i>hirog-e-ru</i> (spread-CAUS-PRS) | <i>hirog-ar-u</i> (spread-INTR-PRS) |

These examples show that the forms of the suffixes are idiosyncratic and probably have to be learned individually. It is plausible to assume that these suffixes occupy the *v* position. For example, [+cause] *v* is realized as *-s* and [-cause] *v* as *-r* in the case of (17a).

In the process of acquiring such lexical items that stand for V-*v* combinations, children often produce transitive sentences with intransitive (unaccusative) verbs. The examples in (18a) through (18d) are data produced by Akkun, and the examples in (18e) through (18g) are data produced by Sumihare (Murasugi, Hashimoto & Fuji 2007).

- (18) a. *Koe ziityan ni miyu.*<sup>5</sup> (A, 2;09)  
 this grandfather to see(vi)  
 'I show this to Grandfather.'

<sup>5</sup> *Mi-yu* is *mi-ru* in adult usage.

- b. *Nee, ati o hirogatte.* (A, 3;07)  
 INT legs ACC spread(vi)-GER  
 'Please spread your legs.'
- c. *Kore, ai-toku kara saa.* (A, 4;05)  
 this open(vi)-keep as SFP  
 '(I will) open this and keep it open.'
- d. *Todokok-ka, ano hito ni todok-oo todok-oo.* (A, 4;08)  
 arrive(vi)-let's that person to arrive (vi)-let's arrive(vi)-let's  
 'Let's send (it). Let's send (it) to that person.'
- e. *Kaatyan ai-te.* (S, 2;01)  
 mother open(vi)-GER  
 Literal meaning: '(Please) be open, mother.'  
 Intended meaning: '(Please) open (the door), mother.'
- f. *Koko oite tyameru.*<sup>6</sup> (S, 2;01)  
 here put get.cold(vi)  
 Literal meaning: 'I put (a cup of tea) here and it gets cold.'  
 Intended meaning: 'I put (a cup of tea) here and make it cold.'
- g. *Kaatyan taitai agat-te. Boku o agat-te.*  
 Mommy carp.streamer go.up (vi)-GER I GEN go.up(vi)-GER  
*agat-te ya.* (S, 2;02)  
 go.up(vi)-GER SFP  
 Literal meaning: 'Mommy, please go up my carp streamer.  
 Go up mine. Go up, please.'  
 Intended meaning: 'Mommy, please make my carp streamer go up higher.  
 Make it higher. Higher, please.'

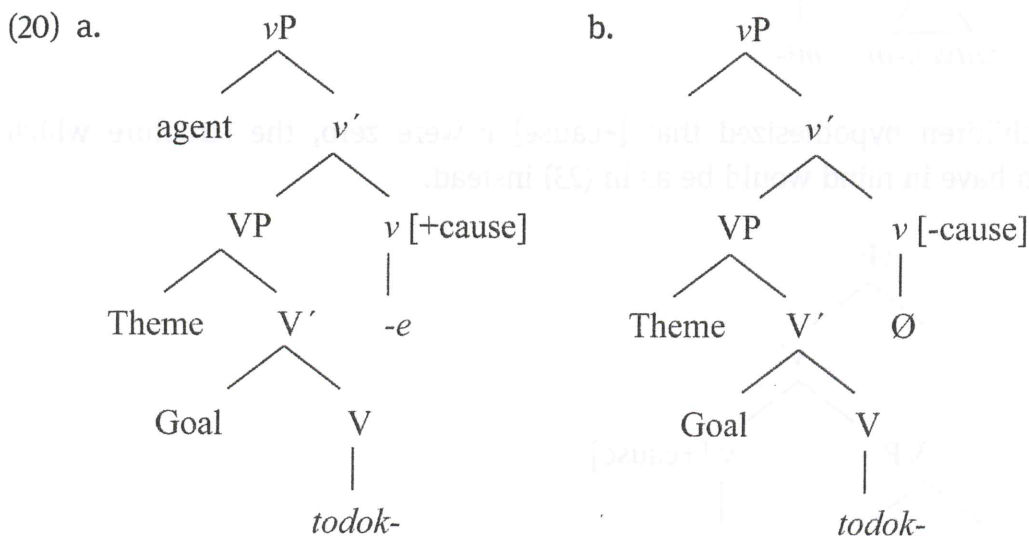
In each of these examples, children "erroneously" use the intransitive form of the verb in place of the transitive. What Akkun intends in (18b), for example, is *hirog-e-te* 'spread(vt)-GER' and not *hirog-at-te* 'spread(vi)-GER'. In adult Japanese, (18c) and (18d) literally mean 'I will remain open' and 'Let's be delivered to that person', respectively.

Murasugi & Hashimoto (2004) propose that children produce these errors because they assume [ $\pm$ cause] *v* to be zero. The sentences in (19) show verb pairs

<sup>6</sup> *Tyameru* is child speech for *sameru* '(something) gets cold'.

of transitive and intransitive (unaccusative) in adult grammar. (19a) and (19b) have the representations in (20a) and (20b), respectively.

- (19) a. *Hanako ga hon o Taroo ni todok-e-ru.*  
 Hanako NOM book ACC Taro DAT deliver(vt)-PRS  
 'Hanako delivers a book to Taro.'
- b. *Hon ga Taroo ni todok-Ø-u.*  
 book NOM Taro DAT be.delivered(vi)-Ø-PRS  
 'A book is delivered to Taro.'



(Murasugi & Hashimoto 2004: 8–9)

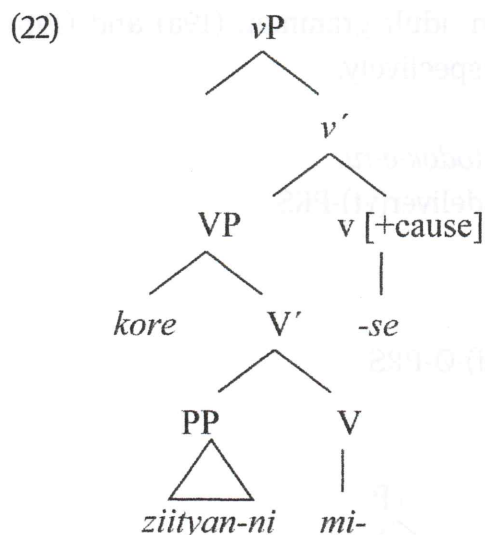
In (20a), [+cause] *v* is realized as *-e*, but in (20b), [-cause] *v* is not realized phonetically.

Now let us consider the sentence in (18a), of which (21) is the adult counterpart.

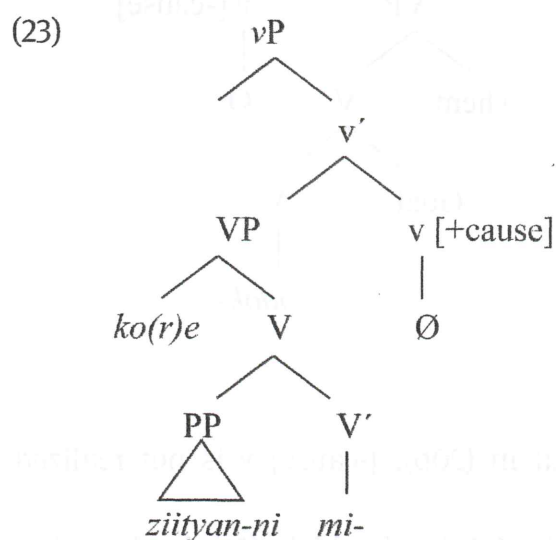
- (21) *Kore ziiyan ni miseru.*  
 this grandfather DAT show  
 'I show this to Grandfather.'

In (21), the ditransitive verb, *miseru* (show) is used. The structure of the adult-grammar form in (21) is as in (22).





If children hypothesized that  $[\pm\text{cause}]$   $v$  were zero, the structure which children have in mind would be as in (23) instead.



In (23), small  $v$  is not realized phonetically. Thus, children produce the monotransitive verb *miyu* instead of the ditransitive verb *miseru*. Their use of less transitive monotransitives for (di)transitives, is observed over a period of several months or several years, depending on the child.<sup>7</sup>

As mentioned above, it should be noted that children at this stage use transitives for intransitives as well. Some examples of this are seen in (24). Example (6b) seen earlier is repeated here as (24a).

<sup>7</sup> Murasugi & Hashimoto (2004) observe this type of error for two years, up to 4;08.

- (24) a. *Ak-en ak-en.* (S, 2;01)  
 open(vt)-NEG open(vt)-NEG  
 Literal meaning: '(I) don't open it. (I) don't open it.'
- b. *Koko kara hi ga das-u n ze* (S, 2;06)  
 here from sun NOM take out COMP SFP  
 'The sun comes out from here.'

These studies suggest that at Stage II children assume that pronounced verbs are Vs and that [ $\pm$ cause]  $v$  is phonetically empty. Accordingly, intransitives and their transitive counterparts are homophonous, as in English. They only later realize that surface forms of verbs are derived by suffixing  $v$  to the verbal root. As the actual realization of [ $\pm$ cause]  $v$  is idiosyncratic and sometimes even null (e.g., *toziru* 'shut (vt, vi)') in adult Japanese, the acquisition of verbs involves complex morphological analysis and, not surprisingly therefore, requires time.

#### 4 VP-shell analysis of causatives revisited

During Stage II, according to Murasugi & Hashimoto (2004), children also produce lexical causative sentences without the causative suffix *-(s)ase*, as shown in (25).

- (25) a. *Mama Akkun non-de.* (A, 2;08)  
 Mommy drink(vt)-GER  
 'Mommy, please feed me (with milk).'
- b. *Mama ga pantyu nui-da toki.* (A, 3;02)  
 Mommy NOM underpants undress(vt)-PST when  
 Literal meaning: ... when Mommy took her underpants off.  
 Intended meaning: ... when Mommy took my underpants off me.
- c. *Kutyu hai-te.* (S, 2;01)  
 shoes put.on(vt)-GER  
 Literal meaning: '(Please) put on (your) shoes.'  
 Intended meaning: '(Please) put a pair of shoes on me.'

Children consistently omit the causative morpheme *-(s)ase* and use only the regular form of verbs instead. For example, in (25a), the causative form *nom-ase-te* should be used in this context, but Akkun omits *-(s)ase* and produces *non-de* instead. Akkun intends to say ‘Mommy, please let me drink,’ but the meaning of what he actually says is ‘Mommy, drink Akkun.’ Similarly, in (25b), the causative form *nug-ase-ta* should be used in this context, but Akkun omits *-(s)ase* and produces *nui-da* instead. He means to say ‘(It hurt) when Mommy took off my underwear,’ but what he actually says is ‘(It hurt) when Mommy took off her underwear.’

(25c) further supports Murasugi & Hashimoto’s (2004) analysis. According to Noji’s (1973–1977) observation, in the context of (25c), the causative form *hak-(s)ase-te* should be used. However, Sumihare omits the causative suffix *-(s)ase*, and produces *hai-te* instead.<sup>8</sup>

The examples in (25) present additional evidence for the *v*-VP hypothesis: children hypothesize that the suffix *-(s)ase* appears in the head position of *v*P, but children omit it since [ $\pm$ cause] *v* is assumed to be zero at Stage II. In Murasugi & Hashimoto’s (2004) analysis, both [+cause] and [-cause] small *v*’s are realized as zero morphemes (i.e., without phonological content). The ‘error’ can be attributed to the existence of alternations such as in (15), which are widely attested, as in English (di)transitive- intransitive (unaccusative) pairs, e.g., ‘John passed the ring to Mary/ The ring passed to Mary’ both involving the same surface form *pass*. Hence, we can say that Japanese-speaking children at Stage II assume that Japanese verbs are structured just like their English counterparts.

<sup>8</sup> See Murasugi, Hashimoto & Fuji (2007) for a more detailed analysis. There are some individual differences between Akkun (A) and Sumihare (S), but the order of acquisition is the same. The age for each stage can be summarized as in (i) and (ii).

(i) Akkun (A)	(ii) Sumihare (S)
Stage I: (2;05)–(2;07)	Stage I: (1;11)–(2;01)
Stage II: (2;07)–(4;08)	Stage II: (2;01)–(2;05)
Stage III: (3;06–)	Stage III: (2;05–)
Stage IV: (5;03–)	Stage IV: (3;04–)

Sumihare’s Stage I is from 1;11 through around 2;01, and his Stage II is from 2;01 through around 2;05. Almost all verbs produced at around 2;00 are intransitive, or less transitive; *mi-te* ‘see’ for *mi-sete* ‘show’, and *ai-te* ‘open(vi)’ for *ak-ete* ‘open(vt)’, for example, are observed at 2;01 and 2;02. Sumihare overextends quite a few transitives as well as intransitives, but the overextension decreases after 2;03. Causatives without *-(s)ase* are also observed in Stage II, just as in the case of Akkun.



When and how, then, are the structure of causatives and causative morphemes acquired? Adult Japanese has a well-known causative verbal suffix, *-sase* which syntactically takes a sentential *vP* complement. Thus, the subject-oriented reflexive pronoun *zibun* can take either the causer or the causee as its antecedent in causative sentences.

- (26) a. *Taroo<sub>i</sub> ga Hanako<sub>j</sub> ni zibun<sub>i/\*j</sub> no koto o hanasi-ta.*  
 Taro NOM Hanako DAT self GEN things ACC tell-PST  
 'Taro told Hanako (things) about himself.'
- b. *Taroo<sub>i</sub> ga Hanako<sub>j</sub> ni zibun<sub>i/j</sub> no heya o katazuke-sase-ta.*  
 Taro NOM Hanako DAT self GEN room ACC clean-CAUS-PST  
 'Taro made Hanako clean up her/his room.'  
 (Murasugi & Hashimoto 2004:17)

This shows that causative sentences contain two subjects and, hence, an embedded clause (see Shibatani 1976, among others). The causative *-sase*, then, is not a realization of [+cause] *v* but is itself a *V* (or a *V-v* combination) under the *VP*-shell analysis.

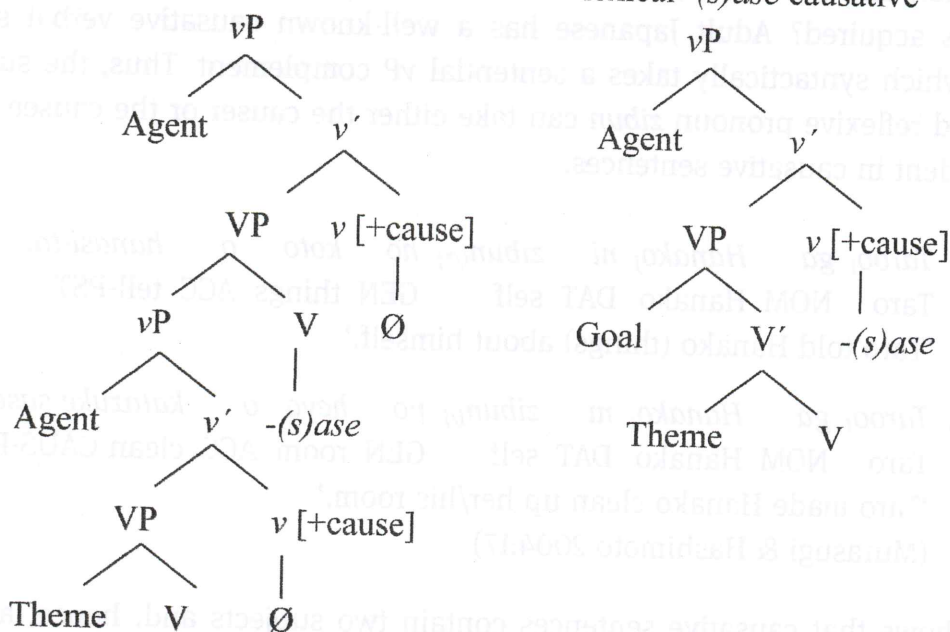
Matsumoto (2000), however, proposes that there are monoclausal causatives in Japanese as well. Observe (27).

- (27) *Hanako<sub>i</sub> ga umaretakari no akatyan<sub>j</sub> ni zibun<sub>i/\*j</sub> no*  
 Hanako NOM newborn GEN baby DAT self GEN  
*kutusita o hak-ase-ta.*  
 socks ACC put.on-CAUS-PST  
 'Hanako put self's (her) socks on a new born baby.'

As mentioned before, the Japanese reflexive pronoun *zibun* is subject oriented. In (27), it cannot take *akatyan* (the baby) as its antecedent, indicating that only *Hanako* plays the role of subject and (27) is monoclausal. Matsumoto (2000) calls such monoclausal *-(s)ase* causatives "lexical *-(s)ase* causatives."

Based on hypotheses advanced by Shibatani (1976) and Matsumoto (2000), Murasugi & Hashimoto (2004) propose (28a) and (28b) as the structural representations for these two types of *-(s)ase* causatives in the *v-VP* framework.

- (28) a. syntactic causative      b. lexical
- (s)ase*
- causative



According to this analysis, *-(s)ase* is ambiguous in the adult grammar of Japanese. Under one interpretation, it is an independent large V taking a *v*-projection as its complement and yielding a complex structure. In this case, the dative argument is interpreted as agent. Under the other interpretation, it combines with a large V and forms a complex verb to yield a simple sentence with no embedding. The dative argument is in this case interpreted as a goal. In Murasugi & Hashimoto's terms, *-(s)ase* can here be analyzed as a realization of [+cause] *v*. For syntactic causatives having the structure in (28a), since both causer and causee function as subjects, they are both assigned the role of agent, the former by the higher small *v* and the latter by the lower small *v*. For lexical *-(s)ase* causatives having the structure in (28b), on the other hand, *-(s)ase* is the realization of [+cause], and the causee functions as goal, appearing not in the Spec of *vP*, but rather in the Spec of VP.

Akkun started uttering syntactic causative sentences quite productively around the age of five, but sporadic uses of *-sase* can also be observed in his speech much earlier.

Stage III, where sentences with an overt causative suffix *-(s)ase* are observed, begins at around age 3, although there are individual differences in the age of onset of this stage.<sup>9</sup> Some relevant examples are shown in (29).

<sup>9</sup> As for Akkun, it is around age 3;05 to 3;06 that Stage III begins, while Sumihare's Stage III begins much earlier. Sumihare starts producing the adult form of lexical causatives consistently at around 2;05.



- (29) a. *Akkun ni tabe-sase-tee.* (A, 3;06)  
 DAT eat-CAUS-GER  
 'Please feed Akkun (/me) (food).'
- b. *Nomi-tyatye-te.* (-*tyatye* appears to correspond to adult -*sase*) (A, 3;07)  
 drink-CAUS-GER  
 'Please feed me (miso soup).'
- c. *Seizi-kun boku ga ne nak-asi-tan zyanai noyo.* (S, 2;07)  
 I NOM INT cry-CAUS-PST-COMP was-not SFP  
 'I'm not the one who made Seiji cry.'
- d. *Okaatyan hak-asi-te.* (S, 3;00)  
 Mommy put on-CAUS-GER  
 'Mommy (please) put (a pair of shoes) on me.'
- e. *Okaatyan kore Teruki-tyan ga sin-asi-tan yo.* (S, 3;04)  
 Mommy this NOM die-CAUS-PST SFP  
 'Mommy, Teruki-chan made this die.'

Interestingly, in all these examples, the causee is non-agentive. Thus, they can all be considered instances of the lexical *-(s)ase* causative. If (29a), for example, were a syntactic causative, it would mean something like '(Please) permit me to eat some food,' but it means rather 'Feed me some food' with *Akkun* (*me*) interpreted as a goal rather than agent. Therefore, (29a) is a lexical *-(s)ase* causative, where *-(s)ase* is a realization of [+cause] *v*. The same applies to (29b).

Murasugi, Hashimoto & Fuji (2007) argue that the examples given in (29c) through (29e) taken from Noji's longitudinal study are further supporting evidence for Murasugi & Hashimoto (2004). The context of (29c) is that Seizi is crying and Sumihare is under pains to explain that it was not Sumihare who made Seizi cry. Here, *Seizi* is not an agent, as his action, crying, was coerced by someone else. The agent is *boku* (I, or Sumihare), and the object *Seizi-kun* is scrambled (or topicalized) to sentence initial position. Hence, (29c) can be considered to have monoclausal structure. In (29d), Sumihare is asking his mother to put a pair of shoes directly on him, with Sumihare functioning as a covert indirect object, interpreted however as goal, not as agent. (29d) can therefore likewise be seen to have monoclausal structure. In (29e), *kore* (this) refers to a fly that, needless to say, died unintentionally. Thus, it is not an agent, and (29e) also has monoclausal structure. As these utterances occur at a stage when children struggle with the idiosyncratic realization of [ $\pm$ cause] *v*, one can conjecture that they are using *-sase* as one realization of [+cause] *v*.



Fuji, Hashimoto & Murasugi (2008) also report cases of overgeneration of the causative morpheme at Stage III. This overgeneration occurs in one of two ways: one in the form “verb + *-(s)ase*”, and the other in the form “causative verb + causative morpheme”. Examples of the first type of overgeneration are given in (30).

- (30) a. *nomi-tyatye-te*. (-tyatye = -sase) (A, 3;07) (adult form: *nom-(s)ase-te*)  
 drink-CAUS-GER  
 Intended meaning: ‘(Please) feed me (miso soup.)’  
 (Murasugi & Hashimoto 2004)
- b. *ok-i-sasi-te*. (S, 3;01) (adult form: *okosi-te*)  
 wake.up-INTR-CAUS-GER  
 Intended meaning: ‘(Please) wake (me) up.’  
 (Noji 1973–1977)

The adult causative form of the verb *nom-(r)u* ‘to drink’ is *nom-(s)ase-ru*, formed by attaching the causative morpheme *-ase* to the verb stem, *nom*. However, (30a) shows that Akkun erroneously attaches *-tyatye*, the child’s phonetic version of *-sase* to the compound form *nomi*, resulting in *nomi-tyatye-te*. In (30b), Sumihare asks someone to wake him up. Here, the IMP form of the lexical causative verb *okos-(r)u* ‘to wake . . . up,’ or *okosi-te*, is expected in adult speech, but Sumihare erroneously attaches *-sasi* (sometimes used in place of the standard *-sase* in his dialect) to the stem of the intransitive verb *ok-i-ru* ‘to get up.’

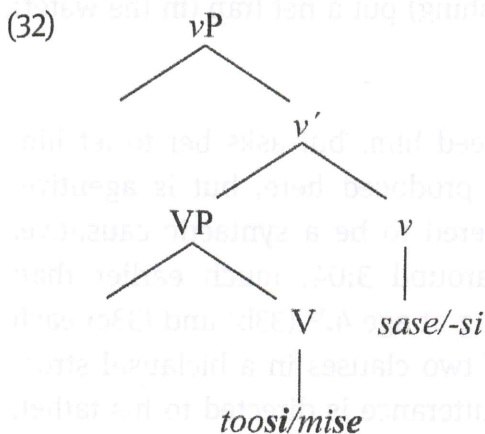
These data indicate that children know that *v* should be phonetically realized in forming causatives, but they fail to choose the right version among several ways of realizing the causative morpheme. Interestingly, the choice made by children tends to be the unmarked bound morpheme *-sase*.

The second type of overgeneration, “causative verb + causative morpheme,” is observed at around late age three up to age five. Some relevant examples are given in (31).

- (31) a. *Kuruma o too-si-sase-ru*. (Taatyan, 3;10) (adult form: *too-s-(r)u*)  
 car ACC pass-CAUS-CAUS-PRS  
 Intended meaning: ‘(I’ll) let the car pass through.’
- b. *Kondo mi-se-si-te ageru kara ne*. (Taatyan, 4;06)  
 next time see-CAUS-CAUS-GER give/let as SFP  
 (adult form: *mi-se-te*)  
 Intended meaning: ‘(I’ll) show (it to) you next time.’  
 (Arai 2003)

In (31a), the transitive verb *too-s-(r)u* 'to let ... pass,' which is a causative verb as well, is erroneously associated with an additional causative morpheme *-sase*. (31b) is a similar example of a doubly-marked causative. The transitive verb *mi-se-ru* 'to show' or 'to let ... see' is, in fact, a causative verb containing the transitive (or causative) morpheme *-se* in it. However, the child adds the additional causative morpheme *-si*,<sup>10</sup> producing *mi-se-si-te* by mistake.

Why then does the second type of overgeneration take place? Mamoru Saito (p.c.) has pointed out to us that the overgeneration in (31) can be considered morphological in nature since the number of arguments does not increase unlike well-known examples of syntactic overgeneration such as 'Don't giggle me' in (1b). This is the stage at which children still have difficulty in finding the appropriate form for verb stems as well as for bound morphemes. What children have internalized at this stage is an undifferentiated causative verb in the form of a bare verb stem, and a rule that *v* must be phonetically realized to form a causative verb. Hence, they attach additional causative morphemes *-sase* or *-si* onto the undifferentiated *V*, as illustrated in (32).



Since children regard the verbal forms *toosi* and *mise* as a whole to correspond to *V*, they attach additional causative morphemes in the position of *v* in order to realize causative meaning phonetically. This would account for the causative doubling phenomenon, and in particular the overgeneration phenomenon of the second type described above.<sup>11</sup>

<sup>10</sup> The causative morphemes *-(s)ase* and *-(s)e* are often pronounced *-(s)asi* and *-(s)i* in western dialects of Japanese.

<sup>11</sup> See Fuji, Hashimoto & Murasugi (2008) for a detailed analysis of the overgeneration of causative and potential morphemes. In Japanese, a number of syntactic phenomena, e.g., passive, causative, honorific, and so on, involve functional categories, and children have to "learn" the exact lexical realization for each functional category.



The acquisition of adult causative constructions with the full verb *-sase* takes place later than that of the lexical causatives. Some examples of Stage IV utterances are shown in (33) (Murasugi & Hashimoto 2004; Murasugi, Hashimoto & Fuji 2007).

- (33) a. *Obaатыan no toko de tabe-masu. A, biiru dake*  
 Grandma GEN place LOC eat-PRS (formal) INT beer only  
*nom-ase-te kudasai.* (A, 5;03)  
 drink-CAUS-GER please  
 ‘(I’ll) eat at Grandma’s place. Um, please let me drink beer (there)’
- b. *Moo gohan tabe-sase-n yo.* (S, 4;09)  
 more food eat-CAUS-NEG SFP  
 ‘(I) won’t let you eat anymore.’
- c. *Tuke-sase-te age-tara funa o kure-tan yo.* (S, 5;03)  
 put-CAUS-GER let-COND fish ACC give-PST SFP  
 ‘When (I = Sumihare) let (the people fishing) put a net trap (in the water), (they) gave me a fish.’

In (33a), Akkun does not ask his mother to feed him, but asks her to let him drink beer. The causee *Akkun* is not overtly produced here, but is agentive. Hence, the causative in (33a) may be considered to be a syntactic causative. Sumihare’s syntactic causatives appear at around 3;04, much earlier than Akkun’s, but become fully productive beginning at age 4.<sup>12</sup> (33b) and (33c) each have two agents, one associated with each of two clauses in a biclausal structure. In (33b), for example, since Sumihare’s utterance is directed to his father, the agent of the action *taberu* (eat) would be his father. Thus, (33b) can be considered an example of a syntactic causative. In (33c), the agent of the action *tuke-ru* ‘put’ would be the people fishing, who borrowed Sumihare’s net, put it in the water, and gave Sumihare a fish they caught with it later, but not *me* (= Sumihare). On the other hand, the agent of the action *-sase-te age-ta* ‘let (the people fishing put the net trap in the water)’ is *I* (= Sumihare). Hence, (33c) also has two agents present and can be considered a syntactic causative as well.

<sup>12</sup> From 3;03 through 4;01 we find a few “syntactic causatives” with “wrong” lexical realization (e.g., *-se* for *-sase*). Sumihare’s morphological realization of syntactic causatives can be considered to be fully acquired by the age of 4 years.



## 5 Implications and remaining problems

As discussed in Murasugi & Hashimoto (2004), children are equipped with the concept of a *v*-VP frame from the early stages of acquisition, but they require some time to discover the morphological makeup of the actual verbs, which are formed by combining *V* and *v*. The causative suffixal verb *-sase* is initially assumed to be a realization of [+cause] *v* and is only later acquired as a full verb that takes a sentential (*v*P) complement. Lexical items typically correspond to syntactic heads, but they are sometimes formed by combining two or more distinct morphemes that project phrases of their own. Children must perform morphological analysis in order to acquire such complex lexical items. We would expect such a process to take time in some cases, and that is exactly what Murasugi & Hashimoto (2004) have observed for the acquisition of verbs in Japanese.

There are two remaining questions to be addressed. One is regarding whether or not the acquisition process given in (10), repeated in (34), is empirically correct and descriptively adequate.

- (34) Stage I: Small *v* is *tiyu/tita/tite* 'do/did/doing'  
 Stage II: Small *v* is null  
 Stage III: Acquisition of lexical causatives and transitive verbs;  
 occasional erroneous lexical realization of *v*  
 Stage IV: Acquisition of syntactic causatives;  
 occasional erroneous lexical realization of *V*

In fact, an exactly parallel acquisition process has been confirmed by Murasugi, Hashimoto & Fuji (2007) based on a corpus analysis of Sumihare (Noji 1973–1977), and a longitudinal study by Nakatani (2010). Nakatani (2010) finds that a Japanese-speaking child, Yuta, follows a process of acquisition just like Akkun and Sumihare, as shown in (35).<sup>13</sup>

- (35) 1;09 *Jyaa suru.*  
 ↓ onomatopoeia *do*  
 'I want you to pour water in here.'  
 1;11 *Naran de.*  
 ↓ line up (*vi*) in order  
 'Please put them in order.'

<sup>13</sup> See Nakatani (2010) for a more detailed discussion.

2;03 *Yuta ga kik-asi-te-ageru.*

↓ NOM hear-CAUS-GER-give  
 ‘Yuta will let you hear (about it).’

2;07 *Tittyai ofune de oyog-ase-tai naa.*

small ship with swim-CAUS-want SFP  
 ‘(Putting a small doll on the ship) (I) want the doll to swim with the ship.’

Yuta starts by producing the onomatopoeia + *suru* (do) construction, followed by stages marked by verbal errors, lexical causatives, and syntactic causatives in that order. Since children brought up in different times and in different places exhibit the same acquisition process, it is quite plausible to conjecture that the data described here meet the criterion of descriptive adequacy.

The second question is regarding how children stop making ‘errors’ and acquire the adult system. Our recent corpus analysis of Sumihare (Noji 1973–1977) indicates that transitive-intransitives errors take place until 2;02, as far as the verbs *aku* (vi)/*akeru* (vt) are concerned.

- (36) a. *Baatyan aite.* (Sumihare (=S), 2;00)  
 grandma open(vi)  
 Intended meaning: Grandma, please open (the door).
- b. *Tootyan aite.* (S, 2;01)  
 daddy open(vi)  
 Intended meaning: Daddy, please open (the door).
- c. *To o aite.* (S, 2;01)  
 door ACC open(vi)  
 Intended meaning: Please open the door.
- d. *Akete. Kaatyan akete.* (S, 2;01)  
 open(vt) Mother open(vt)  
 Intended meaning: Mother, please open (the door).
- e. *Tootyan akete.* (S, 2;02)  
 Father open(vt)  
 Intended meaning: Father, please open (it).

Before around 2;01, only intransitive forms are used. However, as the data exemplified above indicate, at around 2;01, both forms, ‘correct’ and ‘erroneous’,



are alternately used. Then, after around 2;02, few 'errors' are found as far as this verb pair is concerned.

The most important implication of this study is that children initially assume that pronounced verbs are Vs and that [ $\pm$ cause] *v* is phonetically empty, so that intransitives and their transitive counterparts should to them be homophonous, as in English.

The fact that Japanese-speaking children go through a stage corresponding to adult English would support the hypothesis that innate linguistic knowledge defines a space of possible human languages and possible linguistic variation. Linguistic errors arise in children's speech because at an intermediate stage of language acquisition, children try out possible linguistic features actually present in adult languages elsewhere in the world.

Children erroneously producing intransitive forms instead of (di)transitive forms, and intransitive/(di)transitive forms instead of causative forms are trying out languages that are not their mother tongue, yet never outside the bounds defined by the principles of possible grammar.

## 6 Conclusion

Children 'erroneously' produce intransitive forms instead of (di)transitive forms, and intransitive/(di)transitive forms instead of causative forms (e.g., *Daddy, I will feel you better* (meaning 'Daddy, I will make you feel better'); *Huusen hukurande* (lit. 'The balloon expands,' with the intended meaning 'Please blow up the balloon for me.')). In this chapter, well-known 'errors', which are presumably neither a response to the children's environment, nor produced due to children's limited processing ability, have been analyzed within the framework of Generative Grammar.

We have provided a uniform account of such verbal 'errors' following Larson's (1988) *v*-VP frame, or VP-shell, hypothesis, in line with Murasugi & Hashimoto (2004), namely that: (i) children making such errors as those above assume, at one stage of language acquisition, that [ $\pm$ cause] *v* is phonetically null, just like *pass*-type verbs in English, and (ii) what requires time is acquisition of the lexical form of each V and the forms in which [ $\pm$ cause] small *v*'s may be realized. We next discussed the acquisition of syntactic causatives, proposing that the causative morpheme *-sase* is used initially as a realization of [ $+$ cause] small *v*. This initial use of *-sase* entails that *-sase* is ambiguous between V and *v* in adult Japanese, and we argued that such a prediction is indeed borne out.



The evidence presented in this chapter provides, we believe, strong support for the existence of the *v*-VP frame as a syntactic structure in human language. According to our analysis, the process of acquisition of (di)transitive verbs detailed in this chapter does not necessarily reflect the acquisition of predicate-argument structures associated with verbs. The predicate-argument structures of large *V*'s and small *v*'s are acquired quite early. What requires time is the acquisition of the lexical form of each *V* and, more importantly, the forms in which [ $\pm$ cause] small *v*'s are realized. The latter, in particular, must proceed step by step, because the realization of [ $\pm$ cause] small *v* depends on the associated large *V* in Japanese. This is part of the reason that children make transitive-intransitive-causative "errors." As this acquisition process proceeds, children start producing lexical causatives having phonetic form, e.g., *-sase* in Japanese, much before they acquire syntactic causatives.

## Abbreviations

ACC accusative; CAUS causative; COMP complementizer; COND conditional; COP copula; DAT dative; GEN genitive; GER gerundive; IMP imperative; INT interjection; INTR intransitive; LOC locative; NEG negative; NOM nominative; PRS present; PST past; SFP sentence-final particle

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