

# A Theoretical Account for the Undergeneration and the Overgeneration in Japanese Complex Predicates<sup>1</sup>

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## 1. Introduction

In this paper, we discuss the undergeneration and the overgeneration observed in the acquisition of Japanese complex predicates. In particular, we focus on the errors children make for causatives and potentials. It has been reported that Japanese-speaking children, at around 2 to 4 years of age, produce causatives without the causative morpheme *-(s)ase* as in (1) (Suzuki 1987, Ito 1990, Murasugi and Hashimoto 2004, Murasugi, Hashimoto and Fuji 2007, among others).<sup>2</sup>

- (1) Mama Akkun *non -de*. (Akkun, 2;8) (adult form: nom-(s)ase-te)  
mommy drink-Req  
Literal meaning: 'Mommy, (please) drink Akkun(/me).'
- Intended meaning: 'Mommy, (please) feed Akkun(/me) (with milk).' (Murasugi and Hashimoto 2004)

In (1), the causative form *nom-(s)ase-te* should be used in this context, but the child does not phonetically realize *-(s)ase* and produces *non-de* instead.

Another type of error is also observed in the acquisition of causatives as in (2) (Ito 1990, Arai 2003, Murasugi and Hashimoto 2004, among others).

- (2) a. Nomi *-tyatye-te*. (-tyatye = -sase) (Akkun, 3;7) (adult form: nom-(s)ase-te)  
drink -Cause-Req  
Intended meaning: '(Please) feed (me with miso soup).' (Murasugi and Hashimoto 2004)
- b. Kuruma -o too-*si* -*sase* -ru. (Taatian 3;10) (adult form: too-s-(r)u)  
car -Acc pass-Cause -Cause -Pres  
Intended meaning: '(I'll) let the car pass through.'

In (2a), the causative morpheme *-(s)ase* should be attached to the verb stem *nom* 'to drink.' However, the child "erroneously" attaches *-tyatye* (meaning *-sase*) to the preverbal form *nomi*, and produces *nomi-tyatye-te*. (2b) is an example of doubled causatives. Although the transitive verb *too-s-(r)u* 'let ... pass' itself can be a causative verb, the child additionally attaches the unnecessary causative morpheme *-sase* to it, yielding the unacceptable form *too-si-sase-ru*. The children overgenerate the morpheme *-sase* in either case.

Arai (2006) gives a phonological explanation for the erroneous causative and potential forms productively uttered by a Japanese-speaking child. The data discussed in Arai (2006) and the data of Sumihare (Noji 1974-1977) are further reanalyzed by Yano (2007a) under Murasugi and Hashimoto's (2004) VP-shell analysis. This paper is an extension of Yano (2007a), arguing that the parallel undergeneration and overgeneration phenomena are observed in the acquisition of *-(rar)e* potential complex predicates as well as *-(s)ase* causative complex predicates. (Okubo 1967, Ito 1990, Shibuya 1994, Arai 2006, among others).<sup>3</sup> The relevant examples are shown in (3) and (4).

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<sup>2</sup> Abbreviation used in the glosses are as follows: Acc=accusative Case, Cause=causative, Dat=dative Case, Int=interjection, Neg=negation, Nom=nominative Case, Pres=present, Past=past, Pot=potential, Req=request, Top=topic, Trans=transitive

- (3) Mother: Zenbu tabe **-rare** -ru kara ne.  
 all eat -Pot -Pres as Int 'You can eat all.'
- Child: Zenbu tabe  $\emptyset$  -ru ne. (Sumihare, 2;1) (adult form: tabe-**rare**-ru)  
 all eat -Pres Int  
 Literal meaning: '(I) eat all.' Intended meaning: '(I) can eat all.' (Noji 1974-1977)
- (4) a. Yar **-(r)are** -nai. (Taatyan, 3;5) (adult form: yar-**e** nai)  
 do -Pot -Neg Intended meaning: 'I cannot do.'
- b. Zyoozuni mot **-e -rare** -ta. (Taatyan, 4;2) (adult form: mot-**e**-ta)  
 well have -Pot-Pot -Past Intended meaning: 'I could bring (this) up very well.' (Arai 2006)

(3) is an example of the undergeneration. According to the observer, the child repeats his mother's utterance without using the *-rare* form (Noji 1974-1977). (4a) and (4b), on the other hand, are the examples of the overgeneration. In the case of (4a), the child intends to say that he cannot do something, and the potential morpheme *-e* should be attached to the verbal stem. However, *-rare* is attached, and the erroneous form *-yarare*, instead of *-yare*, is produced. In (4b), the child attaches the morpheme *-e* correctly to the verbal stem, but additionally attaches the unnecessary morpheme *-rare*, thereby producing an unacceptable doubled potential form. In either case, the morpheme *-rare* is overgenerated.

The purpose of this paper is to analyze the undergeneration and overgeneration phenomena observed in the acquisition of Japanese causative and potential complex predicates. We argue that the intermediate acquisition stages can be uniformly explained by Murasugi and Hashimoto's (2004) *v*-VP frame analysis for the complex predicates. Based on the analysis of longitudinal studies of Japanese-speaking children reported in the previous literatures, e.g., Akkun (Murasugi and Hashimoto 2004), Sumihare (Noji 1974-1977), Taatyan (Arai 2003, 2006), and the subjects observed by Okubo (1967), Ito (1990), Shibuya (1993, 1994) Suzuki (1987), among others, we argue that the undergeneration is due to the Japanese-speaking children's initial hypothesis that the *v* does exist but it is phonetically null (just as in English), as Murasugi and Hashimoto (2004) propose. We also discuss that the overgeneration takes place because of the erroneous realization of the *v*, and/or the use of the undifferentiated verbal form, as Murasugi (2007a, b) proposes.

This paper is organized as follows. In Section 2, we discuss Japanese adult grammar of causatives and potentials. We overview the proposals made by Murasugi and Hashimoto (2004) and Bobaljik and Wurmbrand (2005, 2007) that Japanese complex predicates have *v*-VP or VP-shell structures (Larson 1988, Hale and Keyser 1993, 2003, Chomsky 1995, Harley 1995, 2006, among others). Then, we discuss the undergeneration phenomenon in Section 3, and the overgeneration phenomenon in Section 4. Section 5 concludes this paper.

## 2. The Adult Grammar of Japanese Complex Predicates

### 2.1. *-(S)ase* Causatives

Japanese morphological *-(s)ase* causatives are formed by attaching the causative morpheme *-(s)ase* to the verb stems. It has been argued that *-(s)ase* is ambiguous in two ways (Miyagawa 1984, 1998, Harley 1995, 2006; Matsumoto 2000, Murasugi, Hashimoto and Kato 2003, Murasugi and Hashimoto 2004, among others). The sentence in (5), for instance, is ambiguous between (6a) and (6b).

- (5) Taroo -ga Hanako -ni pan -o tabe -sase -ta.  
 -Nom -Dat bread -Acc eat -Cause -Past  
 'Taroo made Hanako eat some bread.'

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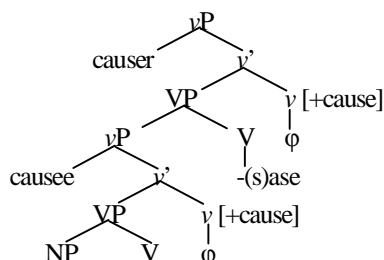
<sup>3</sup> This paper is an extension of Yano's MA thesis (2007a) submitted to Nanzan University, which was also presented at Connecticut-Nanzan-Siena Joint Workshop on Linguistic Theory and Language Acquisition at Nanzan University, February 21st in 2007, and in Nanzan Linguistics Special Issue 3.1.

- (6) a. Taroo gave an order to Hanako and Hanako ate some bread.  
 b. Taroo fed Hanako with some bread.

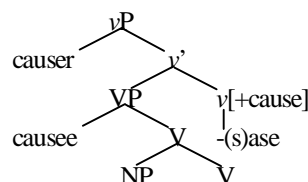
In one reading, as shown in (6a), *Hanako* is an agent, whereas it is a goal in another reading as shown in (6b). The sentence with the former reading is called ‘the syntactic causative,’ while that with the latter reading is called ‘the lexical causative.’

Based on the VP-shell hypothesis (Larson 1988, Hale and Keyser 1993, 2002, Chomsky 1995, among others), Murasugi and Hashimoto (2004) propose the structures for these two types of *-(s)ase* causative, as shown in (7a) and (7b), respectively.

- (7) a. syntactic causative



- b. lexical causative



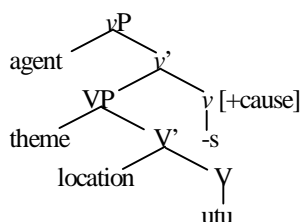
(Murasugi and Hashimoto 2004)

As shown in (7), a syntactic causative has the bi-clausal structure, whereas a lexical causative has the mono-clausal structure. According to their analysis, *-(s)ase* is ambiguous in the adult grammar of Japanese. In one case where it is an independent V, it takes a *v*-projection as its complement, yielding a complex structure as in (7a). In this case, the dative argument, or the causee, is interpreted as an agent. In the other case, it combines with the V and forms a complex verb, yielding a simple sentence with no embedding as in (7b). The dative argument is then interpreted as a goal. In Murasugi and Hashimoto’s (2004) terms, Japanese causative morpheme *-(s)ase* is a realization of the [+cause] *v*.<sup>4</sup>

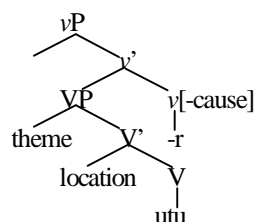
Following Hale and Keyser (1993, 2003), Murasugi and Hashimoto (2004) give the *v*-VP frame structure to Japanese transitive and intransitive sentences. Japanese transitive and intransitive verbal forms are distinguished with their morphemes as in (9), and these morphemes are in the *v* as shown in (10).<sup>5</sup>

- (9) a. utu-**s**-(r)u (= photograph-Pres) / utu-**r**-(r)u (= be photographed-Pres)  
 b. todok-**e**-ru (= deliver-Pres) / todok-(r)u (=be delivered-Pres)  
 c. os-**ie**-ru (= teach-Pres) / os-**owar**-(r)u (= be taught-Pres)  
 d. too-**s**-(r)u (= let ... pass-Pres) / too-**r**-(r)u (= pass-Pres)

- (10) a. transitive



- b. intransitive



(Murasugi and Hashimoto 2004)

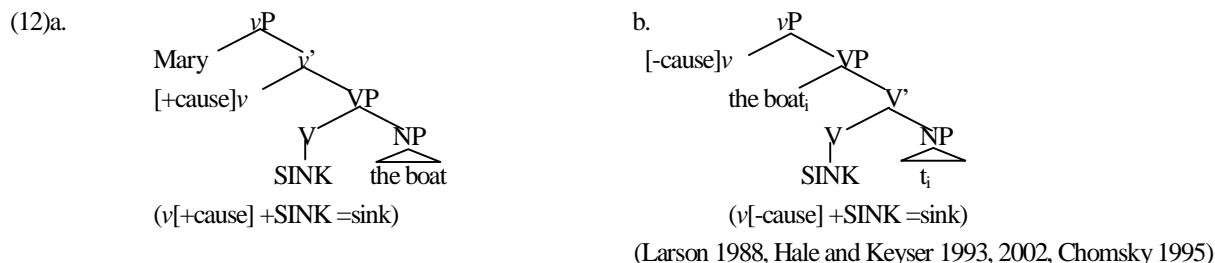
<sup>4</sup> Following Miyagawa (1980, 1984, 1998), Zenno (1985), Harley (1995), and Matsumoto (2000) among others, Harley (2006) also argues that *-sase* is ambiguous between syntactic and lexical causatives, and that syntactic causatives are bi-clausal while lexical causatives are mono-clausal. She further assumes the *v*-VP structure for Japanese causatives based on Hale and Keyser (1993, 2002). Harley (2006), however, considers *-sase* to be in the *v* in both syntactic and lexical causatives. According to her analysis, in lexical causatives, a CAUS *v*<sup>o</sup> is adjacent to a root. On the other hand, in syntactic causatives, a CAUS *v*<sup>o</sup> is not adjacent to a root and takes another *v*P complement.

<sup>5</sup> Japanese transitive and intransitive morphemes are not always overt. For instance, in the case of *todok-(r)u* in (9b), the [-cause] *v* is realized phonetically null like English verbs.

Unlike Japanese, the [ $\pm$ cause] *v* is not phonetically realized in English transitive and intransitive sentences, as in (11).

- (11) a. Mary sank the boat. (transitive)  
 b. The boat sank. (intransitive)

The structures of (11a) and (11b) are represented in (12a) and (12b) respectively.



In (12a) and (12b), the verb ‘sink’ consists of two abstract verbs: the [ $\pm$ cause] *v* and V. The [ $\pm$ cause] *v* is realized phonetically null, and the transitive and the intransitive verbs have the same verbal form.

## 2.2. *-(Rare) Potentials*

Japanese *-(rare)* potential complex predicates are constructed by adding the morpheme *-(rare)* ‘-able’ to the verb stems. The vocalic verb stems take the morpheme *-rare*, and the consonantal verb stems take the morpheme *-e*, as shown in (13) (Shibuya 1993, Kinsui 2003, Arai 2006, among others).

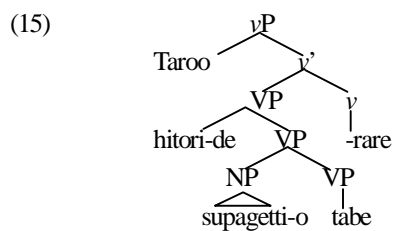
- (13) a. Vocalic verbs: stem +-*rare*
- |          |                       |                     |
|----------|-----------------------|---------------------|
|          | ‘eat-Pot-tense’       | ‘see-Pot-tense’     |
| present: | tabe- <b>rare</b> -ru | mi- <b>rare</b> -ru |
| past:    | tabe- <b>rare</b> -ta | mi- <b>rare</b> -ta |
- b. Consonantal verbs: stem + *-e*
- |          |                  |                     |
|----------|------------------|---------------------|
|          | ‘go-Pot-tense’   | ‘make-Pot-tense’    |
| present: | ik- <b>e</b> -ru | tukur- <b>e</b> -ru |
| past:    | ik- <b>e</b> -ta | tukur- <b>e</b> -ta |

The verbs *tabe-ru* ‘to eat’ and *mi-ru* ‘to see’ shown in (13a) are vocalic, whose stems end with vowels, and the morpheme *-rare* is attached to the verb stems to derive the potential forms, *tabe-rare-ru* ‘can eat’ and *mi-rare-ru* ‘can see.’ In contrast, *ik-u* ‘to go’ and *tukur-(r)u* ‘to make’ shown in (13b) are consonantal verbs, whose stems end with consonants, and the morpheme *-e* is attached to the verb stems to derive the potential forms, *ik-e-ru* ‘can go’ and *tukur-e-ru* ‘can make.’ The examples in (14) indicate the typical potential sentences.

- (14) a. Taroo -wa hitoride supagetti -o tabe -**rare** -ru.  
 -Top by oneself spaghetti -Acc eat -Pot -Pres  
 ‘Taroo can eat spaghetti by himself.’
- b. Hanako -wa hitoride gakkoo-ni ik-**e** -ru.  
 -Top by oneself school -Dat go-Pot -Pres  
 ‘Hanako can go to school by herself.’

There are several important proposals regarding the structure of potentials (e.g., Tada (1992) and Koizumi (1995) for the

AGR-based approach, Saito and Hoshi (1998) for the Head-Head Merger approach, and Takano (2003) for the Prolepsis approach). In this paper, we assume Bobaljik and Wurmbrand's (2005, 2007) analysis that the potential morpheme *-(rare)* is in the head of the *v*P. Given their analysis, the structure of (14a) would be the one shown in (15).



Thus, under the *v*-VP frame analysis, the potential morpheme *-(rare)*, transitive and intransitive morphemes, and the causative morpheme *-(s)ase* in lexical causatives are all in the head of the *v*P.

In the following sections, we analyze the undergeneration and the overgeneration in *-(s)ase* causatives and *-(rare)* potentials, and provide some supporting evidence for the hypothesis that children, in the course of language acquisition, fail to realize the correct adult form for the *v* (Murasugi and Hashimoto 2004, Murasugi 2007a, b).

### 3. The Undergeneration

According to Murasugi and Hashimoto (2004), the structure of VP-shell itself is acquired very early,<sup>6</sup> but it takes time for the Japanese-speaking children to acquire the “correct” lexical form of the *v*. Murasugi and Hashimoto (2004) propose that there is a stage where children hypothesize that the *v* is realized phonetically null. This stage corresponds to what we call the stage of the undergeneration.

#### 3.1. The Undergeneration in *-(s)ase* Causatives

Children start producing the intransitive and the transitive verbs correctly at around the age of 2. However, they do not always produce the correct ones. The utterances which have the causative meaning (or intention) are produced without the causative morpheme *-(s)ase* in the early 2-year-old. We call such phenomenon ‘the undergeneration.’ A couple of examples are given in (16a (=1)) and (16b).

- (16) a. Mama Akkun *non* *-de*. (Akkun, 2;8) (adult form: nom-(s)ase-te)  
 mommy drink -Req  
 Literal meaning: ‘Mommy, (please) drink Akkun(/me).’  
 Intended meaning: ‘Mommy, (please) feed Akkun(/me) (with milk).’ (Murasugi and Hashimoto 2004)
- b. Kutyu *hai* *-te*. (Sumihare, 2;1) (adult form hak-(s)ase-te)  
 a pair of shoes put on -Req  
 Literal meaning: ‘(Please) put on (your) pair of shoes.’  
 Intended meaning: ‘(Please) put a pair of shoes on (me).’ (Murasugi, Hashimoto and Fuji 2007)

<sup>6</sup> From around 1;5 through 3 years of age, the sentences with *suru/sita/site* ‘do/did/doing’ as in (i) are often produced by Japanese-speaking children.

- (i) Mama Akkun hai doozyo tiyu (tiyu = suru) (Akkun, 2;5)  
 mommy yes please do  
 ‘Akkun(/I) will give (it) to Mommy.’ (Murasugi and Hashimoto 2004)

Murasugi and Hashimoto (2004) propose that *suru/sita/site* assigns an agent role to a subject. That is, the *v* is realized as *suru/sita/site* in this stage, and children have VP-shell structures. See Murasugi and Hashimoto (2004) and Murasugi, Hashimoto and Fuji (2007) for more data and detailed analysis.

As shown in (16a), Akkun intends to say *nom-(s)ase-te* to ask his mother to feed him, but utters *non-de* ‘please drink’ instead, without lexically realizing *-(s)ase*. The same type of undergeneration error is found in the longitudinal data of Sumihare (Noji 1974-1977). In (16b), Sumihare produces *hai-te* instead of *hak-(s)ase-te*. He does not produce *-(s)ase* though it is clear that he intends to ask someone to put a pair of shoes on him.

In this stage, children also produce transitive/intransitive alternation errors such as in (17).

- (17) a Akkun ima kaya koe **nayab-u**. (*nayab-u = narab-(r)u*) (Akkun 2;11) (adult form: **narab-e-ru**)  
           now from this be-in-line  
           Intended meaning: ‘From now, Akkun(I) will put these in line.’ (Murasugi and Hashimoto 2004)
- b. **Nui-ta** koko. (Sumihare, 2;1) (adult form: **nuk-e-ta**)  
       pull-Past here  
       Intended meaning: ‘(This) is out from here.’ (Murasugi, Hashimoto and Fuji 2007)

In (17a), instead of the transitive verb *narab-e-ru* ‘to put...in line,’ Akkun erroneously produces what corresponds to the intransitive verb *narab-(r)u* ‘to be...in line.’ In contrast, in (17b), the intransitive verb *nuk-e-ta* ‘came off’ must be used in the adult grammar. However, Sumihare uses the transitive form *nui-ta* ‘pulled.’

Murasugi and Hashimoto (2004) argue that both of the causatives without *-(s)ase* and the transitive/intransitive alternation errors are due to children’s initial hypothesis that the  $[\pm\text{cause}] \nu$  is phonetically null. To be precise, the utterances in (16) are not ‘omission’ errors, but they are ‘the undergeneration.’ Although the children apparently omit *-(s)ase*, they just assume the  $\nu$  to be null. This also holds for the transitive/intransitive alternation errors. As discussed in Section 2.1, in adult Japanese, the  $[\pm\text{cause}] \nu$  are basically overt, and therefore a transitive verb and an intransitive verb have different forms, such as *utu-s-u* ‘to photograph’ and *utu-r-u* ‘to be photographed.’ However, children assume the  $[\pm\text{cause}] \nu$  to be null in this period, and they do not distinguish the two forms. Thus, Murasugi and Hashimoto (2004) propose that this is the stage where children know that either *-s* or *-r* should be attached to the verb (probably because they never hear the verb without these morphemes), and hence, children randomly attach these morphemes directly onto the V. This is why children sometimes produce verbal forms correctly and sometimes do not.

### 3.2. The Undergeneration in *-(Rar)e* Potentials

Like causatives, children start producing potentials without the potential morpheme *-(rar)e* in the early 2-year-old. We find the same type of undergeneration as causatives. The example (3) is repeated below as in (18).

- (18) Child: Zenbu tabe  $\emptyset$  -ru ne. (Sumihare, 2;1) (adult form: tabe-**rare-ru**)  
           all eat -Pres Int  
           Literal meaning: ‘(I) eat all.’  
           Intended meaning: ‘(I) can eat all.’ (Noji 1974-1977)

As we mentioned in Section 1, Sumihare repeats after his mother without using *-rare* form, despite the fact that the mother speaks to her son using *-rare* form *tabe-rare-ru* ‘can eat.’ This type of error is also reported in other literatures, e.g., Okubo (1967) and Ito (1990). Given that the potential morpheme is in the  $\nu$  (Bobaljik and Wurmbrand 2005, 2007), this error can be well explained under Murasugi and Hashimoto’s (2004) VP-shell analysis. That is, children in this stage, at around the age of 2, hypothesize that the  $\nu$  is phonetically null.

On the other hand, the “correct” potential forms also appear in the children’s early production (Okubo 1967, Ito 1990, Shibuya 1994, Arai 2006, Yano 2007a, b, c). Shibuya (1994) and Arai (2006) report that children start producing the correct potential forms with the morpheme *-e* at around the age of 2. Based on her analysis of Noji corpus from CHILDES database (MacWhinney 2000), Yano (2007a, b, c) also finds that *-e* potentials appear very early, at 2;0. Some examples of Sumihare’s potential sentences are given in (19).



- (22) a. Father: Sinbun tot -ta?  
 newspaper take -Past ‘Have (you) fetched the newspaper yet?’  
 Sumihare: Tot **-ta** -nai. (Sumihare, 2;1) (adult form: tot-**te**-nai)  
 take-Past-Neg Intended meaning: ‘(I) haven’t.’
- b. Mother: Oti -ru yo.  
 fall down -Pres Int ‘(You) will fall down.’  
 Sumihare: Oti **-ta** -nai. (Sumihare, 2;1) (adult form: oti-**te**-nai/oti-nai)  
 fall down -Past-Neg Intended meaning: ‘(I) won’t.’ (Murasugi and Fujii 2007)

In (22a), Sumihare is asked if he has already fetched the newspaper, and he intends to say, ‘No, I haven’t.’ For this context, the negative form *tot-te-nai* ‘haven’t taken’ should be used. However, Sumihare puts *-nai* on the past tense form *tot-ta* ‘took,’ and produces the unacceptable negative form *tot-ta-nai*. (22b) shows the same type of error. Even though his mother speaks to him with the present verbal form *oti-ru* ‘fall down,’ the child produces *oti-ta-nai*, putting *-nai* on the past tense form *oti-ta* ‘fell down,’ despite the fact that the negative form *oti-te-nai* or *oti-nai* should be used for this context.

Recall here that in such agglutinative language as Japanese, the functional categories such as T and *v* are not phonetically realized in the early stage, and the verbal forms of Japanese-speaking children at around the age of 2 are the unmerged form (Murasugi 2007a, b). The examples given above create one of the examples for this hypothesis. The negative marker *-nai* ‘not’ is attached to the verbal form, *totta* or *otita* in this acquisition stage, because the child regards the whole verb containing the tense marker as a rote form.

Thus, the discussion so far leads us to presume that Sumihare, at the early age of 2, produces the undifferentiated verbal forms as Murasugi (2007a, b) discusses. Then, it is natural to consider that the potentials found in this period are also undifferentiated verbs. Given this analysis, the examples in (19) would be, in fact, the “lexical potentials.” That is, the child attaches the potential morpheme *-e*, not as a realization of the *v*, but as a part of the V. Note here that the child forms are all used with the potential meaning in the “correct” context. Hence, it is plausible that the *v* does exist and it has the feature at this point, but it is phonetically null in the stage of the undergeneration, as Murasugi and Hashimoto (2004) propose.

#### 4. The Overgeneration

In Section 3, we argued that the undergeneration phenomenon observed in Japanese causatives and potentials are elegantly explained under Murasugi and Hashimoto’s (2004) *v*-VP frame analysis. In this section, we turn to the overgeneration phenomenon. We first report that the parallel pattern of the overgeneration is observed in the acquisition of Japanese causatives and potentials. We, then, point out that there are two types of overgeneration. We argue that they indicate that there is an acquisition stage where the children know that the *v* has to be phonetically realized in their target grammar, but (i) have not acquired the “correct (adult)” lexical form, and/or (ii) have still the undifferentiated rote verbal form.

##### 4.1. The Overgeneration in *-(S)ase* Causatives

Murasugi and Hashimoto (2004) report that Akkun, their subject, produces lexical causatives at around the age of 3, as in (23).

- (23) Akkun -ni tabe **-sase** -tee. (Akkun, 3;6)  
 -Dat eat -Cause -Req  
 ‘(Please) feed Akkun(/me) (with food).’ (Murasugi and Hashimoto 2004)

In (23), *Akkun* is not an agent but a goal, since Akkun is asking his mother to put some food directly into his mouth. Thus, in this stage, children are apparently aware that the [ $\pm$ cause] *v* must be realized phonetically.

However, at the same time, children produce two types of overgeneration. The one is “a verb + *-(s)ase*” form, and the other is “a causative verb + a causative morpheme” form. The examples of the first type of overgeneration are given in (24a)



and (24b(=2a)).

- (24) a. *Okī* -*sasi* -te. (Sumihare, 3;1) (adult form: *ok-osi-te*)  
 get up -Cause -Req Intended meaning: ‘(Please) get (me) up.’ (Noji 1994-1997)
- b. *Nomi* -*tyatye* -te. (-*tyatye* = -*sase*) (Akkun, 3;7) (adult form: *nom-(s)ase-te*)  
 drink -Cause -Req  
 Intended meaning: ‘(Please) feed (me with miso soup.)’ (Murasugi and Hashimoto 2004)

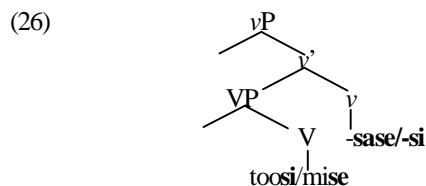
In (24a), Sumihare asks someone to get him up. Here, the imperative form of the lexical causative verb *ok-os-(r)u* ‘to get ... up,’ or *ok-osi-te*, is expected in the adult grammar, but Sumihare erroneously attaches *-sasi* (which is sometimes used instead of the standard *-sase* in his dialect) to the stem of the intransitive verb *ok-i-ru* ‘to get up.’ (24b) shows the similar type of error. The correct causative form of the verb *nom-(r)u* ‘to drink’ is *nom-(s)ase-ru*. However, Akkun erroneously attaches *-tyatye*, or the child’s phonetic form of *-sase*, to its preverbal form *nomi*, and makes *nomi-tyatye-te*. Thus, both of Sumihare and Akkun overgenerate the causative morpheme *-sase* in the cases where the transitive morpheme *-os* or the causative morpheme *-ase* should be attached. These data indicate that the children know that the *v* should be phonetically realized, but they fail in choosing the right one among several ways of the realization of the causative morphemes, and choose the unmarked bound morpheme form, i.e., *-sase*.

The second type of overgeneration, “a causative verb + a causative morpheme,” is produced at around later 3 years old to 5 years old. The relevant examples are shown in (25a (=2b)) and (25b).

- (25) a. *Kuruma* -o too -*si* -*sase* -ru. (Taatyán, 3;10) (adult form: *too-s-(r)u*)  
 car -Acc pass -Cause -Cause -Pres  
 Intended meaning: ‘(I’ll) let the car pass through.’
- b. *Kondo* mi -*se* -*si-te* ageru kara ne. (Taatyán, 4;6) (adult form: *mi-se-te*)  
 next time see -Cause -Cause let as Int  
 Intended meaning: ‘(I’ll) show you next time’ (Arai 2003)

In (25a), 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*. (25b) is another example of doubly marked causatives. The transitive verb *mi-se-ru* ‘to show’ or ‘to let ... see’ is, in fact, a causative verb containing the transitive morpheme *-se* in it. However, the child adds the additional causative morpheme *-si*<sup>8</sup> and produces *mi-se-si-te* “by mistake.”

Why do the children produce the second type of overgeneration? We conjecture that this is the stage where children still have difficulty in finding the appropriate stem form of a verb as well as the correct form of a bound morpheme. They assume an undifferentiated causative verb as the stem of a bare verb. They also know that the *v* should be phonetically realized to make a causative verb. Hence, children attach an additional causative morpheme *-sase* or *-si* onto the undifferentiated V, as illustrated in (26).



Since children regard the whole verbal forms *toosi* and *mise* as V, they add the causative morphemes to realize the *v* phonetically. This is probably why the children make the causative doubling: the lexical causatives with an additional

<sup>8</sup> The causative morpheme *-(s)ase* and *-(s)e* are often produced as *-(s)asi* and *-(s)ji* in the western dialects of Japanese.

unnecessary causative morpheme.<sup>9</sup>

#### 4.2. The Overgeneration in *-(Rare)e* Potentials

Just like the causatives, in the acquisition of potentials as well, we find in Shibuya (1994) and Arai (2006) that the Japanese-speaking children may go through the stages of the overgeneration. And just like the causatives, two types of overgeneration is also found in the acquisition of *-(rare)e* potentials. One type of overgeneration is “the stem of a verb + *-rare*.” Shibuya (1994) and Arai (2006) report that children produce the overgeneration as given in (27a) and (27b (=4a)).

- |         |  |                    |                      |                                  |                |                                   |
|---------|--|--------------------|----------------------|----------------------------------|----------------|-----------------------------------|
| (27) a. | Taakun   | hitori-de          | tukur <i>-(rare)</i> | -ta.                             | (Taatyan, 3;0) | (adult form: tukur- <i>e</i> -ta) |
|         |  | by oneself         | make-Pot             | -Past                            |                |                                   |
|         | Intended meaning: ‘Taakun(I) could make (this) by himself/(myself).’ |                    |                      |                                  |                |                                   |
|         | b.   | Yar- <i>(rare)</i> | -nai.                |                                  | (Taatyan, 3;5) | (adult form: yar- <i>e</i> nai)   |
|         |  | do -Pot            | -Neg                 | Intended meaning: ‘I cannot do.’ |                | (Arai 2006)                       |

In standard Japanese, *-rare* is attached to vocalic verb stems, while *-e* is attached to consonantal verb stems, as is discussed in Section 2. However, Taatyan overgenerates *-rare* in this stage. According to Arai (2006), the child has his own morpho-phonological rule, and puts *-rare* on the vocalic verbs, and *-are* on the consonantal verbs. Thus, in (27a) and (27b), the morpheme *-are* attaches to the stems of the verbs *tukur-(ru)* ‘to make’ and *yar-(ru)* ‘to do,’ though the morpheme *-e* should be attached in the adult grammar.<sup>10</sup> Again, just like the causative *-sase*, children tend to choose an unmarked potential morpheme. In the case of potentials, *-rare* seems to be the unmarked potential morpheme attached. Thus, in the stage where the overgeneration in the acquisition of potentials is found, children have knowledge that the *v* is phonetically realized, but they do not know the “correct” adult form, and hence, they choose the unmarked potential morpheme *-rare*.

Another type of overgeneration, “a potential verb + a potential morpheme,” is also observed at the later 3 years old to 5 years old.<sup>11</sup> A couple of examples are given in (28a) and (28b (=4b)).

- |         |  |                  |                     |       |                  |                                 |
|---------|--|------------------|---------------------|-------|------------------|---------------------------------|
| (28) a. | Gakko-ni   | ik <i>-e -re</i> | -ru                 | yo.   | (Sumihare, 3;1)  | (adult form: ik- <i>e</i> -ru)  |
|         | school-Dat   | go               | -Pot -Pot           | Int   |                  |                                 |
|         | Intended meaning: ‘(I) can go to school by myself.’    |                  |                     |       |                  |                                 |
|         |  |                  |                     |       | (Noji 1974-1977) |                                 |
|         | b.   | Zyoozuni         | mot <i>-e -rare</i> | -ta.  | (Taatyan, 4;2)   | (adult form: mot- <i>e</i> -ta) |
|         |  | well             | have -Pot-Pot       | -Past |                  |                                 |
|         | Intended meaning: ‘I could bring (this) up very well.’ |                  |                     |       |                  |                                 |
|         |  |                  |                     |       | (Arai 2006)      |                                 |

In (28), children attach an additional potential morpheme *-re* or *-rare* onto the already-potential-verb (or “lexical” potentials). Sumihare, in (28a), produces an erroneous potential form, *ik-e-re-ru* for *ik-e-ru* (the adult potential form of *ik-u* ‘to go’). The same type of error is found in Taatyan’s data, as in (28b). Taatyan correctly attaches *-e* to the consonantal verb *mot-(ru)* ‘to have.’ However, he additionally attaches the potential morpheme *-rare*, yielding an unacceptable potential form *mot-e-rare-ta*. As is the case of causatives, this type of overgeneration would reflect the stage where children still use the undifferentiated potential verbs. This is the stage where they know that a potential morpheme should be attached to make a productive potential form in the target grammar, and hence, they put the (unmarked) form *-rare* on the lexical potential verb.

<sup>9</sup> Mamoru Saito brought our attention to this analysis. The overgeneration in (25) can be considered as the morphological one since the number of argument does not increase unlike the famous example of the syntactic overgeneration ‘Don’t giggle me’ (Bowerman 1982). We would like to thank Jean Crawford and William Snyder for also making this point to us.

<sup>10</sup> As far as we know, Shibuya (1994) is one of the pioneers who found the productive overgeneration errors in potentials. Arai (2003, 2006) report the overgeneration phenomena in causatives as well as potentials, and attempt to analyze them in a uniform way.

<sup>11</sup> In the case of Sumihare, he starts producing two types of overgeneration at the same age, at around the age of 3.

## 5. Conclusion

In this paper, we reported that the parallel intermediate stages in the acquisition of Japanese causatives and potentials are found. We argued that these intermediate stages, the undergeneration and the overgeneration, can be uniformly analyzed under the VP-shell hypothesis for the acquisition of the Japanese complex predicates proposed by Murasugi and Hashimoto (2004).

First, in the stage of the undergeneration, *-(s)ase* as the *v* is not realized, and the transitive/intransitive alternation errors are also found. As for potentials, children do not produce *-(rar)e*, and employ the unanalyzed adult form as a potential verb. We argued that these errors are due to children's initial hypothesis that the *v* does exist in their grammar, but it is phonetically null as Murasugi and Hashimoto (2004) propose. They relate this stage to the English transitive/intransitive alternation (See also (11)).

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

Both the transitive *pass* and the intransitive *pass* are realized as *pass*. The children's alternation errors found in Japanese have, in fact, the adult English-type structure: both the *v*'s of [ $\pm$ cause] are realized as zero morphemes.

Second, children go through the two types of overgeneration stage for causatives and potentials. One type of overgeneration is "a correct (but sometimes inappropriate) stem of a verb + (unmarked) *-sase* or *-rare*."<sup>12</sup> Another type of overgeneration is the causative and the potential doubling: "an undifferentiated causative verb + a causative morpheme" and "an undifferentiated potential verb + a potential morpheme." We argued that the overgeneration takes place, since Japanese-speaking children, at one point of language acquisition, have difficulty in finding the "correct" adult forms of the bound morphemes for causatives and potentials, and those agglutinative language learners, at an early stage of language acquisition, also have difficulty in differentiating the bound morphemes from the stems of verbs (Murasugi 2007a, b).

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<sup>12</sup> Precisely speaking, this type of error may not be the case of overgeneration, but rather, a morphological error, as Mamoru Saito (p.c.) and Alison Gabriele (p.c.) pointed out to us.

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