

Another look at *sa*-insertion in Japanese^{*}

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Sasaki, Kan. 2013. Another look at *sa*-insertion in Japanese. *Studies in Phonetics, Phonology and Morphology* 19.1. 179-190. The *sa*-inserted causative form is a sub-standard form of the causative predicate. For this phenomenon, there are two analyses, the suffix leveling analysis and the double causative analysis. The present paper advocates a third analysis, the stem leveling analysis, where *sa*-insertion results from treating the host for causative suffixation as the irrealis stem across the board. This analysis is compatible with all the range of sub-standard causative forms, including rarely mentioned irrealis based causative form of the s-irregular verb. (**Sapporo Gakuin University**)

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1. Introduction

The *sa*-insertion is a phenomenon where an extra /sa/ sequence is inserted in the causative form in Japanese, e.g., /yomasasete/ corresponds to the standard form /yom-ase-te/ ‘read-CAUS-GER’. The *sa*-insertion form is regarded as a sub-standard form of the causative predicate. Table 1 illustrates the regular causative forms and the forms with *sa*-insertion, based on the C-final regular verbs. The underlined parts are inserted segments.

Table 1. Regular causative and *sa*-insertion forms

Verbs	Causative	<i>Sa</i> -insertion form
tat- ‘stand’	tatase	tata <u>sa</u> se
kak- ‘write’	kakase	kaka <u>sa</u> se
yom- ‘read’	yomase	yoma <u>sa</u> se
yob- ‘call’	yobase	yoba <u>sa</u> se

Previous studies (Okada 2004 and the literature cited therein) pointed out that the *sa*-insertion form is dispreferred when the base verb is V-final verbs (so-called *ichidan*) and C-final verbs ending with /s/. Okada (2004) argues that Double-*sa* constraint, a syllable-sized OCP constraint, is responsible for this restriction.

Two types of analyses have been advocated for the morphological aspect of this phenomenon: one is the suffix leveling analysis advocated by Inoue

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(2003), and the other is the double causative analysis advocated by Sano (2011). The previous analyses are seemingly effective for analyzing the *sa*-insertion phenomena but they cannot capture the entire range of sub-standard causative forms. They fail to predict the sub-standard form of the causative predicate based on the s-irregular verb, /sisasete/ 'do-CAUS-GER' (the corresponding standard form is /sasete/). In order to accommodate the entire range of causative forms, this paper advocates a stem leveling analysis where the *sa*-insertion is considered to be a result from the leveling of the hosts into irrealis form.

The analysis proposed in this presentation has an implication for the controversy on the host of causative suffixation. This controversy regarding the causative host can be a useful introduction to the basic issues of Japanese causativization. The structure of this paper is as follows. Section 2 introduces the causative host controversy. The review of the previous analyses for *sa*-insertion is presented in Section 3. The alternative analysis for *sa*-insertion is advocated in Section 4. The data from the Internet research, supporting the advocated analysis, is shown in Section 5 and the validity of the three analyses is examined in Section 6. Section 6 also clarifies the implication of the stem leveling analysis proposed in this paper to other areas of Japanese verb morphology, i.e. the morphological composition of negative forms. Section 7 concludes the discussion.

2. Two types of analyses for Japanese morphological causative

The regular causative form in Japanese is composed of host verb and causative suffix. There are two types of analyses for the morphological composition of the causative form, irrealis analysis and non-irrealis analysis.

Irrealis analysis of the causative form is schematized in (1). This analysis is found in traditional School grammar and some structuralist descriptions (Shibatani 1990). In this analysis, the host of the suffix is the irrealis form of the verb consistently for all the verbs. The causative suffix has two allomorphs, namely /sase/ and /se/. The selection of the allomorph depends on the host verb. C-final regular verbs and the s-irregular verb take the /se/ allomorph, while the other verbs take the /sase/ allomorph. Note that for V-final regular verbs, irrealis (*mizen*) and adverbial (*renyoo*) stems are in the same form with the verb root. The host for the causative suffixation is in the same form as that for the negative suffixation, except for the case of the s-irregular verb. Shibatani (1990) assumes two allomorphs for the irrealis stem of the s-irregular verb, /sa/ for the host for causative suffixation and /si/ for the host for negative suffixation (*si-nai* 'do.IR-NEG.NPST').

(1) Irrealis analysis for causative formation

C-final regular	<i>kaka-se</i> 'write.IR-CAUS'
V-final regular	<i>uke-sase</i> 'receive.IR-CAUS'
k-irregular	<i>ko-sase</i> 'come.IR-CAUS'
s-irregular	<i>sa-se</i> 'do.IR-CAUS'

The non-irrealis analysis of the causative form is predominant in the structuralist and generativist literature since Bloch (1946)'s influential work on Japanese morphology. In this analysis, the suffix is consistently /sase/ (or for some analysts, /ase/) with a certain phonological modification. The grammatical categories of the host for causative suffixation vary depending on the verb classes. For C-final verbs, V-final verbs and s-irregular verb, the stem identical with the root form (I will call this form simply "root" hereafter) is a host for causative suffixation. On the other hand, for the k-irregular verb, the irrealis stem is the host for causative suffixation.

- (2) Non-irrealis analysis for causative formation
- | | |
|-----------------|--------------------------------|
| C-final regular | <i>kak-ase</i> 'write-CAUS' |
| V-final regular | <i>uke-sase</i> 'receive-CAUS' |
| k-irregular | <i>ko-sase</i> 'come.IR-CAUS' |
| s-irregular | <i>s-ase</i> 'do-CAUS' |

The morphological segmentation for V-final verbs is the same in both the irrealis analysis and the non-irrealis analysis, but the label for the host is different. For the irrealis analysis, the host is regarded as an irrealis stem, while for the non-irrealis analysis, it is regarded as a root. This is because irrealis and adverbial stems are in the same form with the root for the V-final verbs.

3. Previous studies for *sa*-insertion

Previous studies clarified historical, phonological and semantic aspects of *sa*-insertion. Sano (2011) summarized the points clarified by the previous studies as follows:

... *sa*-Insertion (1) was first observed in 1947; (2) is an instance of language change in progress, and is currently in the beginning stage of the change; (3) does not produce the sequence *sasa*; (4) is in the course of grammaticalizing and creating the independent lexical item *-as-ase-te-itadak-*; (5) is restricted to short stem verbs; (6) shows variable distribution according to the type of verb; (7) tends to be preferred by male rather than female speakers; (8) is more compatible with stylistically formal settings. (Sano 2011: 4)

Most of the previous studies concentrated on *sa*-insertion based on the C-final verbs because *sa*-insertion occurs mostly on the C-final verbs. This tendency is due to Sano's fact (3). Causative forms of V-final verbs, /s/-final verbs and irregular verbs already contain the /sa/ sequence around the boundary of the verb stem and the causative suffix. Insertion of /sa/ results in the /sasa/ sequence, violating Double-*sa* constraint.

Despite of the name, *sa*-insertion is not analyzed as a pure phonological

insertion. Previous studies considered *sa*-insertion as a morphological change of the causative suffix. Two types of analyses are advocated: one is the suffix leveling analysis and the other is the double causative analysis.

The suffix leveling analysis is advocated by Inoue (2003). Inoue's analysis is based on the irrealis analysis of the causative formation. In this analysis, *sa*-insertion is a result from the leveling of the causative morpheme unifying /sase/ and /se/ allomorphs into /sase/. The regular causative forms and the *sa*-insertion forms are analyzed as in Table 2. Causative forms based on the V-final and k-irregular verbs do not undergo *sa*-insertion because the causative suffix in the regular causative form is already /sase/.

Table 2. Suffix leveling analysis

	Gloss	Regular causative	<i>Sa</i> -insertion	
C-final	'write.IR-CAUS'	<i>kaka-se</i>	<i>kaka-sase</i>	<i>sa</i> -insertion
V-final	'receive.IR-CAUS'	<i>uke-sase</i>	<i>uke-sase</i>	no change
k-irregular	'come.IR-CAUS'	<i>ko-sase</i>	<i>ko-sase</i>	no change

The double causative analysis is advocated by Sano (2011). Sano's analysis is based on the non-irrealis analysis of causative formation. In this analysis, *sa*-insertion is a result from the combination of short causative suffix *-(s)as* and long causative suffix *-(s)ase*. For the suffix leveling analysis, only C-final verbs are the candidate for *sa*-insertion. On the other hand, for the double causative analysis, all the verbs are potential candidates for *sa*-insertion. The fact that V-final, /s/-final and irregular verbs do not undergo *sa*-insertion is considered to be due to Double-*sa* constraint. Table 3 illustrates the double causative analysis.

Table 3. Double causative analysis

	regular causative	<i>sa</i> -insertion	
C-final	<i>kak-ase</i> 'write-CAUS'	<i>kak-as-ase</i> 'write-CAUS-CAUS'	<i>sa</i> -insertion
V-final	<i>uke-sase</i> 'receive-CAUS'	* <i>uke-sas-ase</i> 'receive-CAUS-CAUS'	no change
k-irregular	<i>ko-sase</i> 'come.IR-CAUSE'	* <i>ko-sas-ase</i> 'come.IR-CAUS-CAUS'	no change

Despite the difference of the assumption concerning the morphological composition of the causative form, in both analyses, the change occurs on the causative suffix, not on the host. However, the suffix is not the sole target of morphological change. Morphological change occurs not only on suffixes but also on the hosts (stems). In the next section, I will advocate an analysis regarding *sa*-insertion as stem leveling, which will be compatible with all the range of sub-standard forms of the Japanese causative.

4. Proposal

The stem is also the target of leveling in morphological change. A suggestive example for the present discussion comes from the variation of the negative inference form of the verbs. The negative inference auxiliary suffix */-mai/* (derived from the colloquial version of classical Japanese */-mazi/*) takes the non-past stem for C-final verbs and the irrealis stem for the other verbs, in its prescriptive form. However, in the non-prescriptive form, V-final verbs and irregular verbs sometimes take non-past form as a host for */-mai/* suffixation.

Table 4. Stem leveling of *V-mai*

	Prescriptive forms	Non-prescriptive forms
C-final	<i>hur-u-mai</i> ‘rain-NPST-may.not’	<i>hur-u-mai</i> ‘rain-NPST-may.not’
V-final	<i>hare-mai</i> ‘clear.up.IR-may.not’	<i>hare-ru-mai</i> ‘clear.up-NPST-may.not’
k-irregular	<i>ko-mai</i> ‘come.IR-may.not’	<i>ku-ru-mai</i> ‘come-NPST-may.not’
s-irregular	<i>si(/se)-mai</i> ‘do.IR-may.not’	<i>su-ru-mai</i> ‘do-NPST-may.not’

The suffix in the non-prescriptive forms, i.e. non-past host forms, is in the same form as that of the prescriptive forms. The morphological change occurs on the stem. The stem is unified into the non-past form in the non-prescriptive forms. The non-past stems of V-final and irregular verbs are considered to be a result of the leveling of the stem.

Note that, in some dialects, stem leveling in the opposite direction occurs. In the Mitsukaido dialect, spoken in the southwestern part of Ibaraki prefecture, the negative inference suffix */-me:/* (a cognate element of Standard Japanese */-mai/*) takes irrealis stem as its host consistently: *kaga-me:* ‘write.IR-may.not’, *ki-me:* ‘come.IR-may.not’ (Sasaki 2004).

An analysis parallel to that for the negative inference form is possible for *sa*-insertion. *Sa*-insertion can also be analyzed as a case of leveling of the stem. The third analysis for *sa*-insertion is a stem leveling analysis where *sa*-insertion is regarded as a consequence of the unification of the causative hosts into the irrealis stem. This analysis is based on the non-irrealis analysis of the regular causative forms as shown in (2).

In the non-irrealis analysis, regular causative forms of C-final verbs, V-final verbs and the s-irregular verb take a root as a host for causative suffixation. These verbs undergo stem leveling. The k-irregular verb is exempt from stem leveling because it takes irrealis form as a host even in the regular causative form. The result of stem leveling differs from verb class to verb class. The stem leveling results in *sa*-insertion in C-final verbs, e.g., */kak-ase/* ‘write-CAUS’ → */kaka-sase/* ‘write.IR-CAUS’. The exclusion of the */s/-*final verbs from the stem leveling is regarded as a consequence of Double-*sa* constraint. In recognizing the relevance of the phonological constraint, the stem leveling analysis is the same as the previous analyses.

But the domain where the Double-*sa* constraint plays a role is narrower than in the previous analysis, i.e. only for C-final verbs. For V-final verbs, the stem leveling does not change the phonological forms of the causative forms but it changes the morphological category of the host from root to irrealis stem, e.g., /uke-sase/ ‘receive-CAUS’ → /uke-sase/ ‘receive.IR-CAUS’, because the root of the V-final verb also functions as an irrealis stem and an adverbial stem, see Standard Japanese verb conjugation in Table 5. The segmentation of the morphemes in Table 5 is basically the same as that found in Shibatani (1990). The forms within the brackets are conjugated forms.

Table 5. Standard Japanese verb conjugation

	C-final	V-final	k-irr.	s-irr.
	‘write’	‘look at’	‘come’	‘do’
Irrealis	[kak-a]-nai	[mi]-nai	[k-o]-nai	[s-i]-nai
Adverbial	[kak-i]	[mi]	[k-i]	[s-i]
Non-past	[kak-u]	[mi-ru]	[ku-ru]	[su-ru]
Hypothetical	[kak-e]-ba	[mi-re]-ba	[ku-re]-ba	[su-re]-ba
Imperative	[kak-e]	[mi-ro]	[ko-i]	[s-iro]

The stem leveling analysis predicts the sub-standard causative form of the s-irregular verb /si-sase/ ‘do.IR-CAUS’. The stem leveling analysis is summarized in Table 6.

Table 6. *Sa*-insertion as stem leveling

	Regular causative	<i>Sa</i> -insertion	
C-final	<i>kak-ase</i> ‘write-CAUS’	<i>kaka-sase</i> ‘write.IR-CAUS’	<i>sa</i> -insertion
V-final	<i>uke-sase</i> ‘receive-CAUS’	<i>uke-sase</i> ‘receive.IR-CAUS’	No phonological change
k-irregular	<i>ko-sase</i> ‘come.IR-CAUS’	<i>ko-sase</i> ‘come.IR-CAUS’	No change
s-irregular	<i>s-ase</i> ‘do-CAUS’	<i>si-sase</i> ‘do.IR-CAUS’	Change of host (/s/ → /si/)

For C-final verbs, V-final verbs and the k-irregular verb, the three analyses illustrated above make the same prediction. The difference emerges on the analysis of the s-irregular verb. Under the previous analyses, the sub-standard variant of the causative form based on the s-irregular verb, /si-sase/, is not expected. On the other hand, the stem leveling analysis advocated here predicts the sub-standard causative form /si-sase/. The next section examines the validity of the analyses.

5. Data

Most of the previous studies do not mention the *sa*-insertion of the s-irregular verb. This tendency reflects the fact that the *sa*-insertion of s-irregular verb is not expected in both the suffix leveling analysis and the double causative analysis.

For the suffix leveling analysis, the *sa*-insertion for the s-irregular verb is unexpected, if the /sase/ is an unanalyzed suppletive causative form of s-irregular verb because it already has the /sasa/ shape. If the causative form of the s-irregular verb is analyzed as /sa-se/, the *sa*-insertion is ruled out again because it results in Double-*sa* constraint violation.

For the double causative analysis, the *sa*-insertion of the s-irregular verb is ruled out by the phonological reason. The double causative form of the s-irregular verb /s-as-ase/ contains the /sasa/ sequence and it results in Double-*sa* constraint violation.

As argued in the previous section, under the stem leveling analysis, the expected sub-standard causative form is not the *sa*-insertion form but the causative form with irrealis stem, i.e. /si-sase/. The three analyses share the prediction that there is no *sa*-insertion for the causative form based on the s-irregular verb. The stem leveling analysis differs from the other analyses in that it predicts the sub-standard form of the s-irregular verb, namely, /si-sase/.

In order to examine the validity of the analyses, I collected regular and sub-standard causative forms on the Internet. The data in Table 7, 8, 9 below were gathered using Yahoo! Japan on March 27th, 2013. The word form used in the search is the gerundive form, i.e. verb host + causative suffix + gerundive suffix /-te/, in the mixture of Chinese characters and *kana* syllabaries. I used the gerundive form in the search because according to Sano (2011), *sa*-insertion is most frequently attested in this form.

Table 7 illustrates the number and the ratio of the regular and *sa*-inserted causative forms of the verbs other than s-irregular verbs. The Romanized forms of the words used in the research are listed in (3). The meaning of each word is listed in Table 7.

- (3) Regular and *sa*-inserted forms used in the Internet search
- k-irregular: *kosasete* (regular) – *kosasasete* (*sa*-inserted).
 - V-final: *nesasete* (regular) – *nesasasete* (*sa*-inserted); *tabesasete* (regular) – *tabesasasete* (*sa*-inserted); *isasete* (regular) – *isasasete* (*sa*-inserted); *tozisasete* (regular) – *tozisasasete* (*sa*-inserted).
 - C-final: *dasasete* (regular) – *dasasasete* (*sa*-inserted); *otosasete* (regular) – *otosasasete* (*sa*-inserted); *norasete* (regular) – *norasasete* (*sa*-inserted); *katarasete* (regular) – *katarasasete* (*sa*-inserted); *utasete* (regular) – *utasasete* (*sa*-inserted); *sodatasete* (regular) – *sodatasasete* (*sa*-inserted); *kakasete* (regular) – *kakasasete* (*sa*-inserted); *habukasete* (regular) – *habukasasete*

(*sa*-inserted); *kogasete* (regular) – *kogasasete* (*sa*-inserted); *oyogasete* (regular) – *oyogasasete* (*sa*-inserted); *iwasete* (regular) – *iwasete* (*sa*-inserted); *harawasete* (regular) – *harawasasete* (*sa*-inserted); *yobasete* (regular) – *yobasasete* (*sa*-inserted); *asobasete* (regular) – *asobasasete* (*sa*-inserted); *sinasete* (regular) – *sinasasete* (*sa*-inserted); *yomasete* (regular) – *yomasasete* (*sa*-inserted); *nusumasete* (regular) – *nusumasasete* (*sa*-inserted).

For the k-irregular verb, V-final verbs and /s/-final verb, the ratio of the occurrence of the *sa*-inserted forms is lower than 0.1% in most cases. The exception is the case of *tabe-ru* ‘eat’. However, even in this case, the ratio of the occurrence of the *sa*-inserted forms is 0.156%, lower than the lowest ratio of the C-final verb’s *sa*-inserted form 0.404% (*katarasasete*). This lower ratio is compatible with all the analyses. The motivation of the non-occurrence of the *sa*-inserted forms of these verbs varies from analysis to analysis. For the double causative analysis, it is due to Double-*sa* constraint. For the suffix leveling analysis and the stem leveling analysis, Double-*sa* constraint is responsible only for the non-occurrence of the *sa*-inserted forms of /s/-final verbs. For these analyses, the k-irregular verb and V-final verbs are exempt from *sa*-insertion because it already satisfies the required condition, i.e. the causative forms of these verbs have /sase/ causative suffix in the regular form (for the suffix leveling analysis) and the hosts have irrealis forms (for the stem leveling analysis, recall that the root form and the irrealis form are the same for V-final verbs).

Table 7. Regular and *sa*-inserted forms of k-irregular, C-final and V-final verbs

		Number		Ratio	
		Regular	<i>Sa</i> -inserted	Regular	<i>Sa</i> -inserted
k-irregular	<i>ku-ru</i> ‘come’	13,000,000	207	99.998%	0.002%
e-final	<i>ne-ru</i> ‘sleep’	4,650,000	106	99.998%	0.002%
	<i>tabe-ru</i> ‘eat’	5,880,000	9,190	99.844%	0.156%
i-final	<i>i-ru</i> ‘exist’	12,600,000	1,990	99.984%	0.016%
	<i>tozi-ru</i> ‘close’	3,160,000	35	99.999%	0.001%
s-final	<i>das-u</i> ‘put out’	62,000,000	50,600	99.918%	0.082%
	<i>otos-u</i> ‘drop’	2,380,000	40	99.998%	0.002%
r-final	<i>nor-u</i> ‘ride’	7,840,000	173,000	97.841%	2.159%
	<i>katar-u</i> ‘talk’	11,400,000	46,300	99.596%	0.404%
t-final	<i>ut-u</i> ‘beat’	9,880,000	79,300	99.204%	0.796%
	<i>sodat-u</i> ‘grow up’	16,800	197	98.841%	1.159%
k-final	<i>kak-u</i> ‘write’	124,000,000	1,040,000	99.168%	0.832%
	<i>habuk-u</i> ‘omit’	2,600,000	125,000	95.413%	4.587%
g-final	<i>kog-u</i> ‘row’	203,000	14,900	93.162%	6.838%
	<i>oyog-u</i> ‘swim’	597,000	43,400	93.223%	6.777%

w-final	<i>i(w)-u</i> ‘say’	10,400,000	557,000	94.916%	5.084%
	<i>hara(w)-u</i> ‘pay’	6,920,000	108,000	98.463%	1.537%
b-final	<i>yob-u</i> ‘call’	27,500,000	366,000	98.687%	1.313%
	<i>asob-u</i> ‘play’	2,480,000	254,000	90.710%	9.290%
n-final	<i>sin-u</i> ‘die’	1,050,000	15,300	98.564%	1.436%
m-final	<i>yom-u</i> ‘read’	9,100,000	2,840,000	76.214%	23.786%
	<i>musum-u</i> ‘steal’	708,000	26,300	96.418%	3.582%

Table 8 illustrates the number and the ratio of the regular and the *sa*-inserted causative forms of s-irregular verb. The ratio of the occurrence of the *sa*-inserted forms is almost 0% in each case. This result is compatible with all the analyses. The reason the *sa*-inserted form is not expected varies from analysis to analysis. For the suffix leveling analysis, it is because the regular form /sase/ satisfies the requirement. For the double causative analysis, it is because the *sa*-inserted form violates Double-*sa* constraint. For the stem leveling analysis, it is because the expected sub-standard form is not the *sa*-inserted form for the causative form of s-irregular verb. The sub-standard form expected under the stem leveling analysis is /si-sase/ the causative form based on the irrealis stem, not /sa-sase/. The difference of prediction arises with regard to the occurrence of the sub-regular form other than the *sa*-inserted form.

Table 8. Regular and *sa*-inserted forms of s-irregular verb causatives

	Number		Ratio	
	...sasete	...sasasete	...sasete	...sasasete
<i>benkyoo su-ru</i> ‘study’	73,900,000	573	99.999%	0.001%
<i>tenzi su-ru</i> ‘display’	3,480,000	23	99.999%	0.001%
<i>hookoku su-ru</i> ‘report’	38,300,000	156	100.000%	0.000%

As mentioned above, the sub-standard form expected under the stem leveling analysis is the irrealis based form /si-sase/. This form does exist. Table 9 illustrates the number and the ratio of the regular and irrealis host forms of the s-irregular verb causative. The ratio of occurrence of the irrealis based causative form of the s-irregular verb is higher than the lowest ratio of the occurrence of the *sa*-inserted causative form of the C-final verb (*katar-u* ‘talk’, 0.404%). The existence of the irrealis based sub-standard causative form /si-sase/ has not been a target of discussion. The exception is Mizutani (2011), who argues that /si-sase/ will be a causative form of the s-irregular verb in Japanese in the future. However, the present research shows that the irrealis based form /si-sase/ is an already existing form.

Table 9. Regular and irrealis host forms of s-irregular verb causatives

	Number		Ratio	
	...sasete	...sisasete	...sasete	...sisasete
<i>benkyoo su-ru</i> 'study'	73,900,000	330,000	99.555%	0.445%
<i>tenzi su-ru</i> 'display'	3,480,000	18,100	99.483%	0.517%
<i>hookoku su-ru</i> 'report'	38,300,000	199,000	99.483%	0.517%

6. Discussion

The stem leveling analysis is compatible with all the data shown in Tables 7, 8 and 9 presented in the previous section. However, the suffix leveling analysis and the double causative analysis are wrong in that they cannot predict the existence of the sub-standard form of the s-irregular verb /si-sase/.

The stem leveling analysis predicts correctly the phonologically diverse hosts of sub-standard forms. The host is composed of verb root plus stem-forming vowel /a/ for C-final verbs, while the host is composed of verb root plus stem-forming vowel /i/ for the s-irregular verb. The verb root plus /a/ for C-final verbs and the verb plus /i/ for the s-irregular verb fall under the same morphological category "irrealis stem". The stem leveling analysis does not require a phonologically specific form for a host but it requires the host be the irrealis stem. Under this analysis, stem-forming vowels can be /a/ as in C-final verbs, zero as in V-final verbs, /o/ as in the k-irregular verb and /i/ as in the s-irregular verb. This analysis is consistent with the morphological uniformity and the phonological diversity of the host of the *sa*-insertion form.

The stem leveling analysis is superior to the previous analyses in that it is consistent with the entire range of sub-standard causative forms. This analysis is possible only under the non-irrealis analysis of causative suffixation. Under the irrealis analysis, stem leveling will never occur because all the hosts for causative suffixation are already irrealis forms. This difference indicates that the non-irrealis analysis is more viable than the irrealis analysis for causative suffixation.

The stem leveling analysis presupposes the existence of an irrealis stem in all verbs. However, some scholars deny the existence of irrealis stem at least for C-final verbs (Bloch 1946, Teramura 1984, Kazama 1991, Narrog 1998). Under this type of analysis, the negative form of C-final verbs is analyzed as verb root plus an allomorph of the negative suffix *-anai*, e.g., *kak-anai* 'write-NEG.NPST'. The negative form of V-final verbs is also analyzed as verb root plus negative suffix but the allomorph of the negative suffix is not *-anai* but *-nai*. The k-irregular and the s-irregular verb take irrealis stem as a host for the suffixation of the negative suffix. The selection of the allomorph of the negative suffix depends on the phonological shape of the host. When the host ends with a consonant, *-anai* is selected. Otherwise, *-nai* is selected. Under this analysis, the hosts for negative suffixation are heterogeneous (root forms for some cases, irrealis forms for other cases) and the negative suffix

has allomorphs varying in terms of syllable count. Adopting of this type of analysis makes impossible the stem leveling analysis for sub-standard causative forms including *sa*-inserted forms because there is no morphological category covering the verb root plus /a/ form in C-final verbs and the verb root plus /i/ form in the s-irregular verb. In order to deal with the entire range of sub-standard causative forms, we should accept the analysis where the negative form is segmented into irrealis stem plus negative auxiliary suffix for all the verbs. Under this analysis, the negative suffix has no allomorphs and it is always realized as /-nai/. Table 5 reflects the irrealis-based analysis for the negative form. The irrealis analysis for the negative form is simpler than that of partial non-irrealis analysis by Bloch (1946) and the subsequent studies in his line in that it requires a single morphological category for the host (albeit phonologically heterogeneous) and it does not require the allomorphy for the negative suffix. Thus, the stem leveling analysis proposed here has implications for another part of verb morphology, i.e. morphological composition of negative form.

7. Concluding remarks

In this paper, I argue that *sa*-insertion is a result of stem leveling where the host for causative suffixation is unified to irrealis stem. The proposed analysis is also consistent with the existence of the irrealis host sub-standard causative form based on the s-irregular verb, /si-sase/. The proposed analysis presupposes the existence of the category irrealis (*mizen*) for Japanese verb morphology. The viability of the category irrealis in contemporary Japanese is controversial. Hattori (1951), Inoue (2003) and Shibatani (1990) recognize the category irrealis for Japanese verb morphology. But, as shown in the previous section, some scholars deny the existence of the category. The denial is motivated by lower productivity, in other words, the fact that the irrealis stem, if it is recognized, co-occurs only with a negative suffix (in Classical Japanese, irrealis stem took several suffixes). The analysis proposed in this paper is considered to be an argument for the existence of the category irrealis for the contemporary Japanese.

Abbreviations

CAUS = causative, GER = gerundive, IR = irrealis, NEG = negative, NPST = non-past.

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