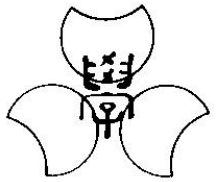

The Phonological Optimization of Nicknames in Japanese: Why kids don't sing "Sachi-chan wa ne"

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Introduction

Sacchan wa ne
Sachiko tte iu n da hontou wa ne
Dakedo chicchai kara
Jibun no koto Sacchan tte yobun da yo
Okashii ne Sacchan

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- The simple pattern is always possible.
- For names with (C)VtV$_{[+high]}$, the geminated form is preferred.

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The present research reports the results of an experiment designed to test these claims and gives a partial account of the results using an optimality theoretic approach with variable constraint rankings.

Overview

- Background
  - Constraint Variation in OT
  - Nickname formation
  - High-vowel devoicing
- Experiment
- Results
- Discussion
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input	CONSTRAINT 1	CONSTRAINT 2
candidate 1	*!	
→ *candidate 2*		*

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→	*candidate 1*		*!
	candidate 2	*!	

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Variable constraint ranking has been used to account for interspeaker variation (i.e., dialects; Morris, 1998) as well as intraspeaker variation (Anttila, 1997).

Background: Nickname Formation in Japanese

Given a name of the form $(C_1)V_1C_2V_2x$, where x comprises one or more syllables, there are three prominent nickname forms with the diminutive morpheme /ĉaN/.

- SIMPLE truncate root to $(C_1)V_1C_2V_2$ stem and suffix ĉaN
  kumiko → kumiĉaN
- V-LENGTHENED truncate root to $(C1)V_1$: stem (lengthening V_1 and suffix ĉaN
  masahiro → ma:ĉaN
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Background: High-vowel Devoicing

In Japanese, high-vowels which are immediately surround by voiceless consonants are frequently devoiced (i→ i̥, u→ u̥).

- hakɯ̥Sima (place name)
- sekɨ̥sui (company name)
- Sɨ̥Tu *room*
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Generalizing,

$$\boxed{C_{[-voi]} \quad V_{[+high]} \quad C_{[-voi]}} \rightarrow \quad C_{[-voi]} \quad \overset{\circ}{\mathrm{V}}_{[+high]} \quad C_{[-voi]}$$

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Names yielding the GEMINATED nickname form contain a subset of these environments:

s	a	ĉ	i	ĉ	a	N
C_1	V_1	$C_{2[-voi,-cont,+cor]}$	$V_{2[+high]}$	$C_{[-voi,-cont,+cor]}$	a	N

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I therefore use Tsuchida's (2001) OT analysis of high-vowel devoicing as a starting point for the analysis presented below.

Experiment

Stimuli come from $(C_1)V_1C_2V_2x$ names.

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- Height of V_2
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- Features of C_2
  - voiceless coronal stops/affricates (saĉio)
  - voiceless noncoronal stops (fukumi)
  - voiceless fricatives (kiSiro:)
  - voiced obstruents (kazuki)
  - nasals (kanetomo)
  - glides, liquids (kiyoteru)

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Sample of Names used as Stimuli

Features of C_2	$V_{2[+high]}$	$V_{2[-high]}$
voiceless coronal stops/affricates	saĉio	otofumi
voiceless noncoronal stops	fukumi	ĉikatoshi
voiceless fricatives	kishiro:	asao
voiced obstruents	TuguyoSi	Sigesato
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glides, liquids	teruhiko	ayao

For each cell, 12 names (6 male, 6 female) were chosen from a book of Japanese baby names (Tamiya et al., 2001).

Experiment

Imagine there is a young elementary school boy named Kishirou (/kiSi#ro:/). His mother has just finished preparing dinner and is calling him to come and eat. What does she say?

"_____chan, time for dinner!"

What is the first nickname that comes to mind? _____

What other nicknames come to mind? _____

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Participants ($n = 21$) were native speakers of Japanese and took the test via a web-based form, entirely in Japanese.

Results

Nickname form	first choice
SIMPLE	49%
V-LENGTHENED	17%
GEMINATED	15%

- Greatest overall preference was for the SIMPLE form.
- Contra Poser (1990), for 21 names (14.6%), the SIMPLE form was never listed as either a first or an other choice.

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Three major patterns in the data:

- **Result 1** For names with C_2 = voiceless coronal affricate and V_2 = high vowel (e.g., naTuho), GEMINATED form are exclusively preferred ($\chi^2 = 65.17, p < 0.001$).
- **Result 2** For names with C_2 = voiceless fricative and V_2 = high vowel (e.g., yasunao), all three nickname forms are equally likely ($\chi^2 = 12.9, p < 0.005$).
- **Result 3** For names in all other categories, the SIMPLE form is the preferred option.

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Tsuchida's account of high-vowel devoicing:

- *VoiceContour = no [-voi][+voi][-voi] sequences
- A vowel between two voiceless consonants has the spread-glottis feature [+sg] inserted.
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hạka	*!		
→ h̲aka		*	

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→ haka		*	

/fuka/	*NonHighV$_{[+sg]}$	*VoiceContour	*HighV$_{[+sg]}$
→ fụka			*
fuka		*!	

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/maĉiko+ĉaN/	MAXIO-V$_{[-high]}$	...	MAXIO-C$_{[-cont]}$	...	*VOICECONTOUR	*HIGHV$_{[+sg]}$	...	MAXIO-V$_{[+high]}$
maĉi̯ĉaN						*!		
ma:ĉaN			*!					
→ maĉ:aN								*

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/maĉiko+ĉaN/	MAXIO-V$_{[-high]}$	...	MAXIO-C$_{[-cont]}$	...	*VOICECONTOUR	*HIGHV$_{[+sg]}$	...	MAXIO-V$_{[+high]}$
maĉi̯ĉaN						*!		
ma:ĉaN			*!					
→ maĉ:aN								*

/mikiko+ĉaN/	MAXIO-V$_{[-high]}$	...	MAXIO-C$_{[-cont]}$	...	*VOICECONTOUR	*HIGHV$_{[+sg]}$	...	MAXIO-V$_{[+high]}$
→ mikɨ̯ĉaN						*		
mi:ĉaN			*!					
miĉ:aN	*!							*

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maĉi̯ĉaN						*!		
ma:ĉaN			*!					
→ maĉ:aN								*

/mikiko+ĉaN/	MAXIO-V$_{[-high]}$	...	MAXIO-C$_{[-cont]}$	...	*VOICECONTOUR	*HIGHV$_{[+sg]}$	...	MAXIO-V$_{[+high]}$
→ mikɨ̯ĉaN						*		
mi:ĉaN			*!					
miĉ:aN	*!							*

Thus, saĉiko → saĉ:aN, because the grammar strongly prefers it.

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In order to account for the SIMPLE nickname as a default form, I propose one more constraint:

- ALIGNL(σ,FT) which effectively penalizes bisyllabic feet over monosyllabic feet.

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/hideaki+ĉaN/	IDENTF-C$_{[voi]}$	MAXIO-V$_{[-high]}$	...	MAXIO-C$_{[-cont]}$	...	ALIGNL(σ,FT)
→ hideĉaN						*
hi:ĉaN				*!		
hiĉ:aN	*!	*				

/haruka+ĉaN/	IDENTF-C$_{[voi]}$	...	MAXIO-C$_{[-cont]}$	...	MAXIO-V$_{[+high]}$	ALIGNL(σ,FT)
→ haruĉaN						*
ha:ĉaN			*!			
haĉ:aN	*!				*	

Discussion

In order to account for the equal likelihood of all three forms for names with C_2 = voiceless fricative and V_2 = high vowel, I need to find a constraint, *X.

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/masuo+ĉaN/	*HighV$_{[+sg]}$	MaxIO-V$_{[-high]}$	...	IdentF-C$_{[cont]}$	MaxIO-C$_{[+cont]}$	*X	...
→ masụ̇ĉaN						*	
ma:ĉaN					*!		
maĉ:aN				*!			

*VoiceContour	*HighV$_{[+sg]}$
	*

Discussion

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/masuo+ĉaN/	*HighV$_{[+sg]}$	MaxIO-V$_{[-high]}$	...	IdentF-C$_{[cont]}$	MaxIO-C$_{[+cont]}$	*X	...
→ masụ̂caN						*	
ma:ĉaN					*!		
maĉ:aN				*!			

*VoiceContour	*HighV$_{[+sg]}$
	*

/masaoki+ĉaN/	*HighV$_{[+sg]}$	MaxIO-V$_{[-high]}$	...	IdentF-C$_{[cont]}$	MaxIO-C$_{[+cont]}$	*X	...
→ masa̲ĉaN							
ma:ĉaN					*!		
maĉ:aN		*!		*			

*VoiceContour	*HighV$_{[+sg]}$
*	

Conclusions & Further Work

- Found evidence that names with voiceless coronal affricate and high vowel prefer the GEMINATED nickname.
- Did not find evidence that the SIMPLE form is always available.
- Presented an OT account with variable constraint ranking to explain main experimental results.

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Thank You!

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Discussion: Constraint Hierarchy

*NonHighV$_{[+sg]}$, IdentF-C$_{[voi]}$, IdentF-C$_{[pla]}$, MaxIO-V$_{[-high]}$
MaxIO-C$_{[-cont]}$
IdentF-C$_{[cont]}$, MaxIO-C$_{[+cont]}$
*VoiceContour, *HighV$_{[+sg]}$
MaxIO-V$_{[+high]}$, AlignL(σ,Ft)

Background: Nickname Formation in Japanese

Nicknames in Japanese are formed by truncation of a root name to a bimoraic stem and suffixation of a dimunitive morpheme.

Common diminutives

- Kobayashi Sachiko → saĉ:aN
- -kun
- Sakai Noriko → noripi:
- -ĉi:

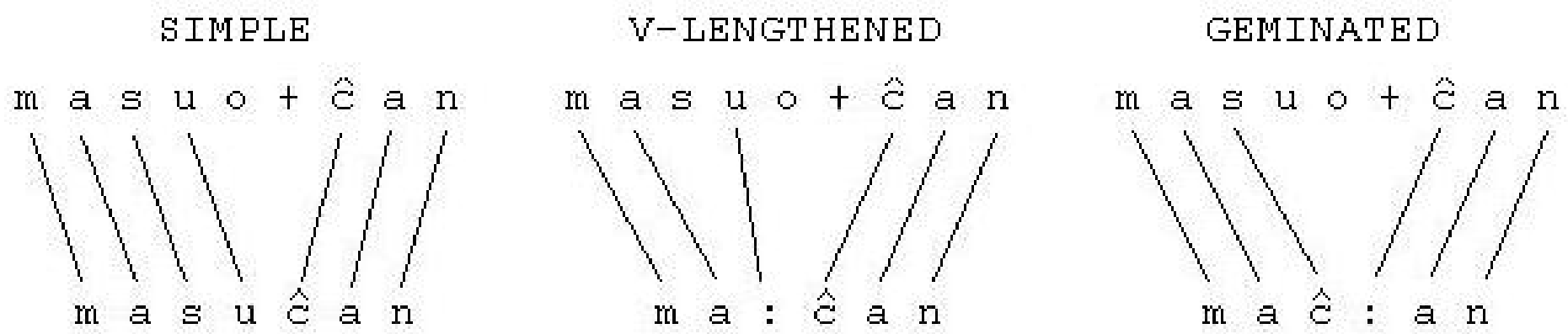
In the present research, focus is on -ĉaN.

Background

Phonemic Inventory of Japanese
and Orthographic Representation

Vowels	
+high	-high
i u	a e o

Consonants		
	-voice	+voice
stops	p t k	b d g r
affricates	ĉ T	j
fricatives	s S h f	z
nasals		m n N
liquids/glides		w y


SIMPLE
m a s u o + ĉ a n
m a s u ĉ a n
V-LENGTHENED
m a s u o + ĉ a n
m a : ĉ a n
GEMINATED
m a s u o + ĉ a n
m a ĉ : a n

Background: Nickname Formation in Japanese

Poser (1990) make two claims about nickname formation:

- The SIMPLE form is possible for all names.
- When $C_2 = t$ and V_2 is a high-vowel, then the GEMINATED form is preferred.

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These claims are tested in the present research.

Discussion

Thus, the following polymorphemic constructions are derived.

/koku+kai/	IDENTF-C$_{[pla]}$	IDENTF-C$_{[voi]}$	MAXIO-V$_{[-high]}$	*VOICECONTOUR	*HIGHV$_{[+sg]}$	MAXIO-V$_{[+high]}$
kokụkai					*!	
kokṵkai				*!		
kokugai		*!				
→ kok:ai						*

Discussion

Thus, the following polymorphemic constructions are derived.

/koku+kai/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
kokụkai					*!	
koku̲kai				*!		
kokugai		*!				
→ kok:ai						*

/koku+go/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
kokụko					*!	
koku̲ko				*!		
→ kokugo						
kok:o						*!

Discussion

Thus, the following polymorphemic constructions are derived.

/koku+kai/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
kokụ̈kai					*!	
koku̲kai				*!		
kokugai		*!				
→ kok:ai						*

/koku+go/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
kokụ̈ko					*!	
koku̲ko				*!		
→ kokugo						
kok:o						*!

/gaku+sei/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
→ gakụ̈sei					*	
gaku̲sei				*!		
gakuzei		*!				
gas:ei	*!					*

Discussion

Thus, the following polymorphemic constructions are derived.

/koku+kai/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
kokụkai					*!	
kokṵkai				*!		
kokugai		*!				
→ kok:ai						*

/koku+go/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
kokụko					*!	
kokṵko				*!		
→ kokugo						
kok:o						*!

/gaku+sei/	IdentF-C$_{[pla]}$	IdentF-C$_{[voi]}$	MaxIO-V$_{[-high]}$	*VoiceContour	*HighV$_{[+sg]}$	MaxIO-V$_{[+high]}$
→ gakụsei					*	
gakṵsei				*!		
gakuzei		*!				
gas:ei	*!					*

[Note: this is not a comprehensive account of gemination in polymorphemic constructions. There are other environments which result in gemination: hâci + hyaku = hap:yaku; hâci + sai = has:ai.]