11

Palatalization in Japanese sound symbolism

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11.1. The sound symbolism of palatalization

Japanese has an extensive set of lexical items commonly known as *giongo*, *giseego*, and *gitaigo* "mimetic words." These lexical terms are used most frequently in colloquial speech, and they form a system with distinct syntactical, morphological, and phonological characteristics (Hamano 1986).

Consonant palatalization is a conspicuous feature of this mimetic system, and the semantic association of palatalization extends over a semantic continuum of "childishness, immaturity, instability, unreliability, uncoordinated movement, diversity, excessive energy, noisiness, lack of elegance, and cheapness." A large number of minimal pairs, as in (1) below, demonstrates this clearly.

(1)	a.	pata-pata	"hitting a flat surface with a large flat object such as a fan"
		patya-patya	"hitting the surface of the water with a big splash"
	b.	peta-peta	"with something sticking on"
		petya-petya	"to talk on and on about insignificant matters (by moving the tongue all over)"
	c.	horo-horo	"weeping elegantly"
		hyoro-hyoro	"looking thin and weak"
	d.	tara-tara	"thick creamy liquid drips"
		tyara-tyara	"flashy and cheap"
	e.	toro-toro	"thick liquid"
		tyoro-tyoro	"unreliably"
	f.	suru-suru	"something passes smoothly"
		syuru-syuru	"something goes through a narrow space and makes a noise"

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g. noro-noro	"slow movement"
nyoro-nyoro	"a snake's wriggly and curving movement"
h. koro-koro	"something hard and round rolls on"
kyoro-kyoro	"to look around curiously without focusing on one thing"
i. kata-kata	"something solid and square hits a hard surface and makes a homogeneous sound"
katya-katya	"hard objects such as keys hit each other and make a variety of noises"

11.2. The distribution of palatalization

McCawley (1968) sets up four strata of phonology in Japanese, the native, the Sino-Japanese, the onomatopoeic, and the foreign, and lists the permitted combinations of vowels with palatalized and non-palatalized consonants as in table 11.1.

In Table 11.1, Sino-Japanese and onomatopoeic, or mimetic, morphemes are treated together. This gives the impression that the Sino-Japanese and the onomatopoeic strata are identical as to the features of palatalization. A closer look at the distribution of palatalized syllables proves otherwise.

In monosyllabic mimetic roots, there is only one location where palatalized and plain syllables can contrast, and most consonants that are permitted initially are palatalizable, as in (2) below.

Table 11.1 *Permitted vowel-consonant combinations in Japanese*

	Native	Sino-Japanese and onomatopoeia	Foreign
Cu	×	×	×
Cyu		×	×
Co	×	×	×
Cyo		×	×
Ca	×	×	×
Cya	×	×	×
Ce	×	×	×
Cye			×
Ci			×
Cyi	×	×	×

(McCawley 1968: 65)

(2)	pyoN-pyoN	"jumping joyfully"
	byuN-byuN	"going fast against a strong wind"
	hyoi to	"jumping over something casually"
	tyuu-tyuu	"sucking with noise"
	syaN to	"in a firm posture"
	zyuQ to	"with the sound of water on a heated plate"
	kyaQ to	"with a scream"
	gyuQ to	"holding hard onto something"
	nyaa-nyaa	"cat's meowing"

In bisyllabic mimetic roots, on the other hand, the following stringent constraints on the distribution of palatalized syllables exist.

First, palatalization cannot appear twice in the same root; that is, roots of the form */CyVCyV/ do not exist. The permissible strings are either /CyVCV/ as in (3a) or /CVCyV/ as in (3b). The sequences [pi, bi, tʃi, ʃi, zi, ki, gi, ni, mi, ri] are treated as /Ci/ and not as /Cyi/ in this paper.[1] Glosses given above are not repeated below.

(3)	a.	pyoko-pyoko kyoro-kyoro tyara-tyara	"something light flip-flops"
	b.	pitya-pitya	"to move something thin, flat, and flexible like a hand over the surface of water or a watery object in such a way that a splashy noise is made"
		petya-petya	
		kusya-kusya katya-katya	"crumpled"

Secondly, in the second syllable of bisyllabic mimetic roots, only the alveolar sounds /t, (d), s, z, n/ can be palatalized, as in (4a) below.[2] The flap /r/ is alveolar, but it is not palatalizable in the second syllable. Since it does not appear in the first syllable, the flap /r/ is not palatalizable anywhere in bisyllabic mimetic roots. For lack of a better term, the term "alveolar" will be used to refer to only /t, (d), s, z, n/ in this paper. In the first syllable, by contrast, most of the consonants that are allowed to appear initially may be palatalized, as in (4b).

(4)	a.	kutya-kutya	"to chew something like gum in a messy way"
		kasya-kasya	"dry light objects scratch each other and make noise"
		uzya-uzya	"to swarm around"
		kunya-kunya	"something like a melted iron bar bends"

Table 11.2 *Consonantal combinations of basic reduplicative adverbs*

C_1 \ C_2	ty	sy	zy	ny	r	k	b	p	t	d	s	z	g	m	n	w	y	Total	
py						1												1	
hy					2	1												3	7
ky					1				1									2	
gy					1													1	
ty					4	6	2	1										13	
sy					3	3	2											8	31
zy					3	3	1											7	
ny					2	1												3	
p	4	5																9	
b	5	5																10	
h				1														1	
k	3	2		1														6	48
g	4	4		2														10	
m		3	2	2														7	
w/θ	1		1															2	
n	2																	2	
t																			
d		1																1	
s																			
z																			
y																			
Total	19	20	3	6	16	15	5	1	1										
	48				38														86

b. pyoko-pyoko "to flip-flop"
hyoko-hyoko "to flip-flop"
kyoro-kyoro
gyoro-gyoro "to look around inquisitively and indeterminately with eyes bulging out"
tyara-tyara
syuru-syuru
zyoki-zyoki "to cut with scissors unhesitantly"
nyoro-nyoro "the winding movement of something like a snake"

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The third constraint is as follows. If palatalization occurs in a root that contains an alveolar, it must be the alveolar that is palatalized, whether it is in the first syllable or in the second syllable. Other sounds in the first syllable may be palatalized only in the absence of an alveolar in the second syllable. The only apparent exception to this rule is /kyoto-kyoto/ "to look around indeterminately," whose semantic identity with /kyoro-kyoro/ "to look around indeterminately" allows us to hypothesize that it was formulated analogously to resemble the latter. A "correct" form /kotyo-kotyo/ "touching lightly" also exists, but semantically it resembles /koto-koto/ "hitting lightly" more than /kyoto-kyoto/.

The second of the constraints on palatalization above states that, while palatalization of alveolars is allowed in both the first and the second syllable, palatalization of non-alveolars is limited to the first syllable. This, coupled with the third constraint (the preference of alveolars over non-alveolars for palatalization) works to ensure that non-alveolars are less frequently palatalized than alveolars. The limited scope of palatalization of non-alveolars is clear statistically.

Table 11.2 breaks down the consonantal combinations of the 86 bisyllabic reduplicative adverbs in my data which have palatalized syllables.[3] The consonantal elements in the first and the second syllable are represented by C_1 and C_2 respectively. They may be Cy or C. Under C_1, all consonantal elements that appear in the first syllable are listed. To the right of C_2, on the other hand, all consonantal elements that appear in the second syllable are listed.

Of these 86 adverbs, only seven involve palatalization of non-alveolars. The rest involve alveolars. Within the latter category, 48 involve palatalization in the second syllable and 31 in the first syllable.

The oddity of palatalization of non-alveolars is also statistically clear when we consider the vowels that accompany the consonants. Tables 11.3 and 11.4 show the combinations of vowels in the 86 items used for table 11.2. Table 11.3 shows that, after /ty, sy, zy, ny/, 52 cases involve /a/, 21 cases /o/ and six cases /u/. The vowel /a/ is the predominant vowel in palatalized syllables. As for the vowels that follow simple consonants in these bisyllabic mimetic morphemes, all vowels except /e/ are involved more or less equally.[4]

When we shift our focus to the seven cases with /ky, py, hy, gy/ in the first syllable, we find that the situation is quite different from the above. In table 11.4, there are only two combinations of vowels: namely, /-o-o/ and /-u-u/. And, of the seven cases, six are of the former type, /-u-u/ being limited to only one case.

Interestingly, none of the above constraints and tendencies applies to Sino-Japanese morphemes, which came into Japanese as erudite words. First of all, in bisyllabic words from the Sino-Japanese stratum, one finds numerous examples where palatalization appears in both syllables:

Table 11.3 *Forms containing /ty, sy, zy, ny/*

V in CyV / V in CV	i	e	a	o	u	Total
i			11	7		18
e			5	1		6
a			14			14
o			10	11		21
u			12	2	6	20
Total			52	21	6	79

Table 11.4 *Forms containing /ky, py, hy, gy/*

V in CyV / V in CV	i	e	a	o	u	Total
i						
e						
a						
o				6		6
u					1	1
Total				6	1	7

(5) kyasya "to be fragile"
kyooryuu "dinosaur"
kyuukyo "hurriedly"
gyaQkyoo "adverse circumstances"

Moreover, in the Sino-Japanese stratum, there is no difference between the role of the first syllable and the role of the second syllable. Nor is there any difference between the alveolars and the non-alveolars. Palatalization appears in both syllables with an essentially identical set of consonants: /py, by, hy, ty, (dy), sy, zy, ky, gy, my, ny, ry/.

The same thing can be said about the vowels that accompany palatalized consonants. In Sino-Japanese morphemes, of the three vowels /a, o, u/, /o/ is most frequent, and /a/ is least frequent. In the dictionary by Suzuki *et al.* (1975), of the 855 Sino-Japanese morphemes that involve palatalization, 516 entries involve /o/;

254 /u/; and only 85 /a/. The contrast is clear. In palatalized syllables in the Sino-Japanese stratum, /o, u/ appear more frequently than /a/. In the mimetic stratum, on the other hand, /a/ is over-represented. Thus, the Sino-Japanese and mimetic strata are quite dissimilar in the distribution of palatalization.

11.3. Diachronic interpretation of the constraints

The peculiar distributional constraints on palatalization in mimetic words are related to the role of palatalization in mimetic words, i.e. its sound symbolism.

As stated at the beginning of this paper, the sound-symbolic association of palatalization extends over a semantic continuum of "childishness, immaturity, instability, unreliability, uncoordinated movement, diversity, excessive energy, noisiness, lack of elegance, and cheapness."

The semantic continuum of palatalization can be reduced to a basic association of palatalization of alveolar stops and fricatives with "childishness" or "immaturity." Studies of language acquisition report palatalization as one of the universal characteristics of early stages of children's language acquisition. It is also reported as one of the commonest devices of baby-talk, i.e. adult modification of speech to children (Snow and Ferguson 1977).

The peculiar distributional pattern of palatalized syllables may be reinterpreted by taking into account the primacy of alveo-palatals and their meanings. The predominance of palatalization of alveolars points to a stage when palatalization occurred only with alveolars with the sense of "childishness." As the meaning was extended to the other end of the semantic continuum, palatalization would have been separated from alveolar stops and fricatives. That is, it would have been reinterpreted as an independent sound-symbolic factor. It would have spread to other consonants at this stage to add one or the other of the above meanings to the string. When this happened, palatalization of forms containing no alveolars naturally went to the first syllable instead of the second syllable because of the general preference of the first syllable as the site of semantic contrast in the Japanese mimetic system.

The phonotactic constraints on bisyllabic mimetic morphemes with palatalized syllables may be reformulated to reflect the above hypothesis as below.

(6) a. Palatalization is marked underlyingly in the following way: /y-CVCV/. Its position need not be specified underlyingly.

b. Alveolar stops and fricatives are first palatalized.

c. If (b) does not apply, palatalization goes to the first syllable.

The derivations of /pyoko/, /tyara/, and /pitya/ are as below.

(7)	a. y-poko	y-tara	y-pita
	b. _____	tyara	pitya
	c. pyoko	_____	_____

11.4. Historical implications for Japanese sound change

When the inventory of palatalized syllables is expressed in terms of /Cyi, Cye, Cya, Cyo, Cyu/, the Sino-Japanese and mimetic strata seem to share a similar kind of palatalized syllable. However, as we have seen so far, the phenomena of palatalization in the two strata are qualitatively quite different: the phonotactic constraints on palatalized syllables, so powerful in the onomatopoeic stratum, are irrelevant in the Sino-Japanese stratum.

Based upon the documentation of palatalization after the massive borrowing and incorporation of Chinese words, it is often flatly stated that palatalization was added to Japanese under the influence of Chinese loanwords. (See, for example, Mabuchi 1971.) However, the differences between the Sino-Japanese and the mimetic strata lead us to the claim that palatalization in the mimetic words is a spontaneous process indigenous to Japanese rather than a product simply triggered by Chinese loanwords. What erudite Chinese loanwords probably did in this regard was to legitimize the existing palatalization in colloquial speech.

NOTES

1 In table 11.1, McCawley treats these phonetic strings as /Cyi/ phonologically; there are no Ci-syllables for the onomatopoeic stratum in table 11.1. On the other hand, the present analysis of the constraints on palatalization in the mimetic stratum critically depends upon the treatment of such strings as /Ci/; if this analysis were rejected and McCawley's treatment accepted, /pitya-pitya/ in (3b), for instance, would have to be reanalyzed as /pyitya-pyitya/, invalidating my entire argument about the phonotactic constraints of palatalization. Bisyllabic mimetic morphemes of the form */CVkyi-, CVryi-, CVbyi-, CVmyi-, pyitV/, and so on, which are not possible in the current analysis, would also have to be accepted.

It should first be pointed out that the distinction between /Ci/ and /Cyi/ in the foreign stratum in table 11.1 is made on the basis of the existence of such pairs as [ti:mu] "team" vs. [tʃi:zu] "cheese," which are phonemicized as /ti:mu/ and /tyi:zu/ respectively. Following this lead, McCawley phonemicizes such syllables as [pi, bi, ki, gi] in the native, Sino-Japanese, and mimetic strata as Cyi-syllables /pyi, byi, kyi, gyi/ instead of /pi, bi, ki, gi/. This is because, in these strata, [tʃi] exists but [ti] does not; phonemicizing the phonetically simple syllables as phonologically sharp syllables simplifies the phonotactics of these strata.

In the present analysis, on the other hand, only /Cyu, Cyo, Cya/ are treated as palatalized syllables in the mimetic stratum; */Cyi/ is not considered to exist in mimetic words.

One reason for rejecting /Cyi/ for the mimetic stratum is the absence of bisyllabic morphemes */CyaCya-, CyoCyo-, CyuCyu-/, etc., which contain two unambiguously palatalized syllables. Such forms would be expected if [Cyaki, Cyari, Cyobi], etc. were interpreted as */Cyakyi-, Cyaryi-, Cyobyi-/, etc., since (e.g.) */CyVkyi/ is a form of */CyVkyV/ and this implies the possibility of */CyVkya/, etc. The absence of such morphemes proves that the constraint is real and that [Ci] cannot be interpreted as */Cyi/.

A similar reason is the absence of bisyllabic morphemes */CVkya-, CVrya-, CVmya-, pyatV-/, etc., in which non-alveolars are palatalized in syllables containing /a, o, u/. As we will see shortly, there is a general constraint banning the palatalization of non-alveolars. However, such forms would be expected if [CVki, CVri, CVbi, CVmi, pitV], etc. were interpreted as */CVkyi-, CVryi-, CVbyi-, CVmyi-, pyitV-/, since (e.g.) */CVkyi/ is a form of */CVkyV/ and this implies the possibility of */CVkya/, etc. The absence of such forms again proves the correctness of the present analysis. The constraints generally set up for palatalized syllables consistently apply in the case of the unambiguously palatalized syllables /Cya, Cyo, Cyu/; it would not make sense to allow */Cyi/ and say that the constraints do not apply only in the case of this problematic sequence.

2 The contrast between /d/ and /z/ is neutralized before /y/.

3 The following is the list of 86 bisyllabic mimetic adverbs used in tables 11.1, 11.2, and 11.3: pitya-pitya, petya-petya, patya-patya, potya-potya, pisya-pisya, pesya-pesya, pasya-pasya, posya-posya, pusyu-pusyu, pyoko-pyoko, bitya-bitya, betya-betya, batya-batya, botya-botya, betyo-betyo, bisya-bisya, besya-besya, basya-basya, bosya-bosya, bisyo-bisyo, hyoro-hyoro, hyuru-hyuru, hyoko-hyoko, hunya-hunya, tyari-tyari, tyara-tyara, tyoro-tyoro, tyuru-tyuru, tyapo-tyapo, tyobi-tyobi, tyobo-tyobo, tyaki-tyaki, tyoki-tyoki, tyaka-tyaka, tyoko-tyoko, tyoku-tyoku, tyuku-tyuku, dosya-dosya, kyoro-kyoro, katya-katya, kutya-kutya, kyoto-kyoto, kotyo-kotyo, kasya-kasya, kusya-kusya, kunya-kunya, gyoro-gyoro, gatya-gatya, gotya-gotya, gutya-gutya, gotyo-gotyo, gasya-gasya, gosya-gosya, gusya-gusya, gusyo-gusyo, gunya-gunya, gonyo-gonyo, syari-syari, syara-syara, syuru-syuru, syobo-syobo, syabu-syabu, syaki-syaki, syoki-syoki, syaka-syaka, zyari-zyari, zyori-zyori, zyara-zyara, zyabu-zyabu, zyoki-zyoki, zyaka-zyaka, zyuku-zyuku, mosya-mosya, musya-musya, mosyo-mosyo, mozya-mozya, mozyo-mozyo, munya-munya, monyo-monyo, nyoro-nyoro, nyuru-nyuru, nitya-nitya, netya-netya, nyoki-nyoki, itya-itya, uzya-uzya.

4 The distribution of /e/ is limited in the native and the mimetic stratum in general.

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