Constraint Inviolability in Japanese Mimetic Palatalization

In Japanese, mimetic items containing [C^{j}e] (a palatal(ized) consonant before [e]) or [r^{j}] are systematic gaps. In earlier studies, these gaps are analyzed as a result of underparsing of [–ant] responsible for palatalization. In this work, I have two principal goals. First, I argue on semantic ground that the two types of gaps are instances of absolute ungrammaticality. Second, I compare two OT approaches to absolute ungrammaticality: Control (Orgun & Sprouse 1999; 2009; Bye 2007) and MPARSE (Prince & Smolensky 2004; Raffelsiefen 2004; Wolf & McCarthy 2009). I defend the former, showing that the MPARSE approach encounters ranking paradoxes.

Semantically, mimetic palatalization denotes uncontrolledness. The locus of palatalization is phonologically predictable (Mester & Itô 1989; Zoll 1996, 1997; Hamano 1998; Kurisu 2009; cf. Alderete & Kochetov 2009). As shown in (1a), coronals (but /r/) are better hosts of [–ant] than non-coronals. This justifies *[–Cor]^{j} » *Cor^{j}. In (1b), a second coronal consonant is palatalized, so ALIGN-R([–ant],Rt) dominates ALIGN-L([–ant],Rt). The coronal dominance takes precedence over the right edge orientation, so *[–Cor]^{j} outranks ALIGN-R([–ant],Rt).

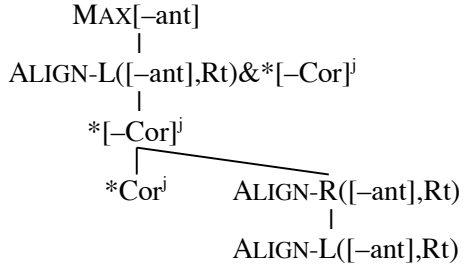
(1)		*Base forms*	*Gloss*	*Palatalized forms*	*Gloss*
	a.	zabu-zabu	splashing	ʒabu-ʒabu	splashing indiscriminately
		kata-kata	clattering	katʃa-katʃa	clattering a-periodically
		kasa-kasa	rustling	kaʃa-kaʃa	rustling uncomfortably
	b.	dosa-dosa	flowing	doʃa-doʃa	flowing in large amounts
		noso-noso	slowly	noʃo-noʃo	slowly but clumsy
		nuta-nuta	sticky	nutʃa-nutʃa	very sticky
		nuto-nuto	clammy	nutʃo-nutʃo	very clammy

Without any coronal consonant, the initial consonant is palatalized, as exemplified in (2). This indicates that ALIGN-L([–ant],Rt)&*[–Cor]^{j} is ranked high. Root-internal non-coronal palatalization is tolerated unless there is an initial consonant (e.g., [og^{j}a-og^{j}a] 'crying'), so MAX[–ant] dominates ALIGN-L([–ant],Rt)&*[–Cor]^{j}.

(2)	*Base forms*	*Gloss*	*Palatalized forms*	*Gloss*
	poko-poko	up and down	p^{j}oko-p^{j}oko	jumping around
	gobo-gobo	gurgling	g^{j}obo-g^{j}obo	gurgling messily

In sum, the basic distribution of mimetic palatalization is explained with the ranking in (3).

(3)



There are two cases where palatalized forms are systematically excluded: (i) when palatalization produces a sequence of a palatalized consonant and [e], and (ii) when [r] is targeted by palatalization. Some examples are given in (4). Consequently, no palatalization should emerge in /CerV/ roots. This is confirmed by the fact that examples like [gera-gera] 'guffaw' have no palatalized counterpart (i.e., *[g^{j}era-g^{j}era], *[ger^{j}a-ger^{j}a]).

(4)		*Base forms*	*Gloss*	*Palatalized forms*	
	a.	keba-keba	gaudy	*k^{j}eba-k^{j}eba	*keb^{j}a-keb^{j}a
		neba-neba	sticky	*ɲeba-ɲeba	*neb^{j}a-neb^{j}a
		teka-teka	shining	*tʃeka-tʃeka	*tek^{j}a-tek^{j}a
	b.	uru-uru	sweeping	*ur^{j}u-ur^{j}u	
		uro-uro	hanging around	*ur^{j}o-ur^{j}o	
		raN-raN	glaring	*r^{j}aN-r^{j}aN	
		ruN-ruN	pleasant	*r^{j}uN-r^{j}uN	

In earlier literature, examples as in (4) are analyzed as underparsing of the [–ant] feature (Zoll 1996, 1997; Kurisu 2009). Such analyses imply that both /keba-keba/ and /keba-keba,[–ant]/, for instance, lead to [keba-keba], implying that the forms in (4) are ambiguous. This is false. This observation strongly suggests that the lack of palatalized forms in (4) is not attributed to underparsing of [–ant]. Rather, whole underlying forms like /keba-keba,[–ant]/ are ineffable. The asterisked forms in (4) are cases of absolute ungrammaticality.

Absolute ungrammaticality is often discussed for gaps in inflectional paradigms. However, no paradigmatic account is promising here. Then, two analytical possibilities are left: one relying on Control (Orgun & Sprouse 1999; 2009; Bye 2007) and one appealing to MPARSE (Prince & Smolensky 2004; Raffelsiefen 2004; Wolf & McCarthy 2009). The absence of palatalized forms in (4) favors the former approach.

In the approach relying on Control, *Eval* always emits a morphologically parsed output. The output is next evaluated in the Control component. The output passes if it satisfies all constraints in Control. Otherwise, it is rejected such that no surface form is obtained. For the case at hand, *[C^{j}e] and *[r^{j}] are in Control. As shown in (5), [k^{j}eba-k^{j}eba] is supplied by *Eval*. But it is eliminated because it breaches *[C^{j}e] in Control, as in (6).

(5)

	/keba-keba,[–ant]/	MAX[–ant]	ALIGN-L([–ant],Rt)&*[–Cor]^{j}
a.	keba-keba	*!	
b. ☞	k^{j}eba-k^{j}eba		
c.	keb^{j}a-keb^{j}a		*!

(6)

	/keba-keba,[–ant]/	*[C^{j}e]
✖	k^{j}eba-k^{j}eba	*

MPARSE is a constraint that requires that every output be morphologically parsed. With no morphological affiliation, the output (indicated by [⊙]) is uninterpretable, so it fails to be spelled out. This MPARSE approach offers a straightforward account of absolute ungrammaticality in (4). I assume undominated *[C^{j}e] and *[r^{j}]. As demonstrated in (7) with /keba-keba,[–ant]/ as an example, the three constraints ranked over MPARSE leave no room for morphologically parsed output. Null parsing performs the best. The systematic lack of forms with [r^{j}] is elucidated in the same fashion.

(7)

	/keba-keba,[–ant]/	*[C^{j}e]	MAX[–ant]	ALIGN-L([–ant],Rt)&*[–Cor]^{j}	MPARSE
a.	keba-keba		*!		
b.	k^{j}eba-k^{j}eba	*!			
c.	keb^{j}a-keb^{j}a			*!	
d. ☞	⊙				*

The two analyses may seem equally well, but the MPARSE analysis encounters a ranking paradox. As stated above, a medial non-coronal consonant may be palatalized in vowel-initial roots (e.g., [og^{j}a-og^{j}a] 'crying'). As illustrated in (8), this fact calls for MPARSE » ALIGN-L([–ant],Rt)&*[–Cor]^{j}. As presented in (7), the opposite ranking is required in (4a). This is a ranking paradox. This empirical flaw does not arise in the Control account because MPARSE is not in *Con* and *Gen* does not supply [⊙] as a candidate.

(8)

	/og^{j}a-og^{j}a/	MPARSE	MAX[–ant]	ALIGN-L([–ant],Rt)&*[–Cor]^{j}
a.	oga-oga		*!	
b. ☞	og^{j}a-og^{j}a			*
c.	⊙	*!		

The MPARSE model suffers from an additional ranking paradox. Hamano's (1998) database provides some [C_1VC_2e] roots, where C_1 is a non-coronal consonant and C_2 is a coronal consonant other than [r] (e.g., [kune-kune] 'wriggling'). The key fact is that no such root has a palatalized counterpart (e.g., *[k^{j}une-k^{j}une], *[kuɲe-kuɲe]). This lack of palatalized forms is also viewed as absolute ungrammaticality since non-palatalized forms like [kune-kune] are not ambiguous. In order to explain this observation in the MPARSE model, *[–Cor]^{j} must outrank MPARSE. By contrast, the palatalizability of an initial non-coronal consonant in (2) suggests MPARSE » *[–Cor]^{j}. Again, the MPARSE model leads to a ranking paradox. The Control approach has no problem. *Eval* picks [kuɲe-kuɲe] as the optimal relative to (3). [kuɲe-kuɲe] is subsequently adjudicated to be ungrammatical due to violation of *[C^{j}e] in Control. Control Theory avoids both ranking paradoxes with the MPARSE model.

[C^{j}e] and [r^{j}] are not inhibited everywhere in Japanese. [C^{j}e] occurs in loanwords (e.g., [tʃeeN] 'chain'), and [r^{j}] is attested in Sino-Japanese (e.g., [r^{j}ookiN] 'fare') and loanwords ([r^{j}ukkusakku] 'rucksack'). Therefore, *[C^{j}e] and *[r^{j}] in Control should be marked with proper lexical classes. The direct implication is the existence of relativized markedness constraints in *Con*. This is an addition to a growing body of recent studies asserting the necessity of relativized markedness constraints (Flack 2007; Gouskova 2007; Kurisu 2007; Pater 2007).

Moreover, there is independent evidence for the need of relativized markedness constraints in the context of absolute ungrammaticality. Norwegian imperatives and nouns behave distinctly when they end in a consonant cluster with rising sonority (Rice 2003, 2005). Imperatives are formed via apocope of suffixal [-ə] in infinitive forms. No imperative form is constructed if final vowel deletion would yield a consonant cluster with rising sonority. In contrast, schwa epenthesis breaks up such a consonant cluster in nouns. Imperatives do not appeal to any repair, so imperatives-specific SONCON is in Control. But noun-particular SONCON dominates DEP in *Eval*. This illuminates the necessity of relativized markedness both in *Eval* and in the Control component.

Related to the nature of data in (4), another key theoretical implication is that no systemic account can be a general approach to absolute ungrammaticality. Absolute ungrammaticality is usually discussed in connection with inflectional paradigms. In (4), paradigmatic factors play no role. Were there a sole mechanism in charge of entire absolute ungrammaticality, it is not one as in Rice (2005) that appeals to paradigmatic consideration.

In conclusion, the lack of palatalized forms in (4) is a case of absolute ungrammaticality. This finding is best captured with Control Theory. My analysis has two theoretical implications. First, relativized markedness constraints exist in *Con*. Second, absolute ungrammaticality is not restricted to inflectional morphology.