

[p] causes devoicing of geminates in Japanese

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SUMMARY: Geminate devoicing in Japanese loanwords has received much attention in the recent phonological literature since Nishimura (2003). We point out that geminates can devoice when they co-occur with [p] as well, and develop an analysis in which two marked segments within a word violates a constraint, OCP(MARKED). We entertain several other hypotheses and discuss pros and cons of each analysis.

FACTS: It is well known since Nishimura (2003) that voiced geminates optionally devoice when they co-occur with another voiced obstruent. Less well known is the fact that geminates are devoiced when they co-occur with [p] as well; e.g., *kyuupitto* "cupid" and *patto* "pad". The analysis of the Corpus of Spontaneous Japanese (the CSJ) shows that geminates devoice 37% when they co-occur with a voiced obstruent, devoice 27% when they co-occur with [p], and devoice only 3% elsewhere. A judgment experiment (Anonymous 2013) with 34 native speakers of Japanese shows that they judge devoicing of geminates to be possible 85% of the time with a voiced obstruent, 87% of the time with [p], and only 72% of the time elsewhere.

ANALYSIS: Modeling [p]-induced devoicing of geminates is a challenge, as having [p] and having voiced geminates seem phonologically irrelevant. We built on the observation that singleton [p]s and voiced geminates occur only in recent borrowings (Ito and Mester 1995, 1999), and propose that these sounds are considered to be special, or marked, in Japanese phonology. In fact, singleton [p]s and voiced geminates are the most *infrequent* sounds in the Japanese lexicon, as shown by our lexical analysis of Amano and Kondo (1999). We thus propose that there is a constraint OCP(MARKED), in which two marked structures within a word are penalized. If this constraint is ranked higher than the faithfulness constraint for voicing, then [p] would cause devoicing, as in (1) below. The faithfulness constraint itself is ranked above the constraint against voiced geminates to prevent context-free devoicing from occurring, as in (2). OCP(MARKED) would account for devoicing by not only [p] but by another voiced obstruent, to the extent that a voiced obstruent is marked.

(1) /paddo/	OCP(MARKED)	FAITH(VOICE)	*VOICEDGEM
[paddo]	*!		<u>*</u>
=>[patto]		*	
(2) /maddo/	OCP(MARKED)	FAITH(VOICE)	*VOICEDGEM
=> [maddo]			*
[matto]		*!	

DISCUSSION: In this presentation we would also like to entertain other hypotheses. For example, both [p] and voiced geminates involve diacritic marks in Japanese orthography (*handakuten* and *dakuten*), and it may be that two segments with diacritics are disfavored. This hypothesis, however, is not illuminating from a phonological perspective. Also, it is not quite conceivable that Japanese [p] is actually [+voiced], so that [p]-induced devoicing is actually a case of classic Lyman's Law. However, this analysis may be motivated by the adult ortho-phonology of Japanese; i.e. [p] is *han-dakuon* "half-voiced".