

Testing rendaku experimentally: Rosen's Rule, (Strong) Lyman's Law and Identity Avoidance

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This talk starts with a brief overview of the previous experiments on rendaku. We then report two new experiments on rendaku, which address the psychological reality of various aspects of Rendaku: Rosen's Rule, (Strong) Lyman's Law and Identity Avoidance.

According to Rosen's Rule, rendaku is more likely to apply when N1 is longer than 2 moras than when N1 is shorter (Irwin 2009; Rosen 2003; Vance, to appear). Experiment I addresses whether this lexical pattern can be replicated using nonce words. The results show that there is a small trend in which rendaku is more likely when N1 is 3 moras long than when it is 2 moras long, but that the difference is very small and not statistically significant. Rosen's Rule may thus not be grammaticalized in native speakers' minds.

Experiment I also addressed whether the strong version of Lyman's Law is psychologically real. According to this law, rendaku may be blocked by a voiced obstruent in N1 (e.g. *fuji-ta* vs. *fushi-da*) (Sugito 1965). Although it is perhaps true that this strong version of Lyman's Law was active in Old Japanese (Unger 1975; Vance 2005), the synchronic status of this blocking effect is much debated (Ito and Mester 2003; Vance, to appear). Indeed our experiment did not show a substantial blockage effect by a voiced obstruent in N1.

Experiment II turns to a hitherto unnoticed factor that impacts the applicability of rendaku, namely, avoidance of two adjacent identical CV moras (=Identity Avoidance). The effect of Identity Avoidance is identified as playing a role in some domains of Japanese phonology (Sano 2013), but its effect on rendaku has not been considered. The current experiment shows that rendaku is more likely to apply when the two CV moras across a morpheme boundary are already identical (i.e. *[CV_i+CV_i]). The experiment also shows that rendaku is less likely to apply when it would result in two adjacent identical moras across a morpheme boundary (i.e. /CV_i+CV_k/ => *[CV_i+CV_i]). In addition to this new descriptive discovery regarding rendaku, the experiment shows that one and the same constraint can both trigger and block the same phenomenon within one language.

Experiment III examines the interaction between Identity Avoidance and Lyman's Law. It shows that Identity Avoidance enhances the effect of Lyman's Law, but only when the violation of Lyman's Law is local.

In summary, the three experiments show that neither Rosen's Rule nor the strong version of Lyman's Law is psychologically active, whereas Identity Avoidance is. Lyman's Law and Identity Avoidance interact when the violation of Lyman's Law is local.