

Phonetic Grounding in the Markedness Constraint Banning on Onset Velar Nasal

Speaking of Prosody: A Symposium in Honor of Professor Merle Horne

Lund University, Sweden, 21 May 2011

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1. Previous research

Functional motivations are meant to be the driving mechanism behind a phonological entity.

Phonological (sonority, features, hierarchies) vs. phonetic (movement, duration, air flow)

The latter – predominant after the advent of Optimality Theory

/nd/ vs. */nt/ - Hayes and Stivers (1995), Pater (1999)

Vowel reduction – Crosswhite (1998), Flemming (2005)

Intervocalic consonant lenition – Kirchner (1998), Kingston (2007), Kaplan (2010)

*/rj/ - Hall (2000, 2003, 2004), Hall and Hamann (2010)

Homorganic NC – Jun (1996), Kochetov and So (2007)

Vowel harmony – Linebaugh (2008)

Metathesis – Blevins and Garrett (2004)

*[ŋ] - my (Oda's) work

Applied languages - Dutch, German, French, Polish, Italian, Galician, Macedonian, Malayalam, Japanese, Korean, Marathi, Yoruba, etc.

2. The four dimensions of soft palate

Much lowering – velar nasal

Mid lowering – coronal and labial nasals, nasalized vowels

Mid raising – oral velar consonants

Much raising – oral sounds other than those with velar

Universality – contact with soft palate, air flow, etc.

The markedness constraint banning on onset velar nasals is grounded in the three degrees of the four dimensions.

Shared phonetic feature in the one-degreed movement (less marked)

Much lowering + mid lowering – air flow into nasal cavity

Much raising + mid raising – air flow into oral cavity

Mid lowering + mid raising – no articulation with firm contact

Shared phonetic feature in the two-degreed movement (less marked)

Much lowering + mid raising – the contact of velum with the back of the tongue

Mid lowering + much raising – the posture without the contact with the back

No shared phonetic feature in the three-degreed movement (marked)

3. Nasalized vowel

Vocalic nasalization by codas, not by onsets – accents of Japanese without onset velar nasal, assimilation and alternation in French, many Polish examples, Yoruba, etc.

Nasalized vowel + coda velar nasal – one degree

Onset velar nasal + oral vowel – three degrees

Onset velar nasal + nasalized vowel, if any, blocks the marked three-degreed movement.

Tokyo Japanese *kagami* ‘mirror’, *ichigo* ‘strawberry’

A daily used expression nominative *ga-*

Nasalized vowel – an assimilation

Total ban on onset velar nasal and total ban on onset-nucleus assimilation

American English

Nasalized vowel *ban*

Syllabic [r:] *first, heard*

Diphthongal rhotic *your, pair*

The ban on the three-degreed movement

4. Sequence

NC sequences as the velars

Dutch *bank* ‘couch’, Japanese *kan̩gaeru* ‘to think,’ Malayalam [awaŋkarau] ‘he cried’,
Macedonian [aŋgliski] ‘English’

The phonetically smooth articulations – the degrees of the movements consist of one or two, but not three.

Fula *biŋŋga* ‘big child’

The onset in the second syllable [ŋg] occurs despite the worse sonority contour than the singleton of the velar nasal.

It is because of the phonetic preference in favor of the one or two degrees relative to the three.

5. Intervocalic position

No resyllabification process in the majority, if not all, of the world’s languages

Vŋ.V > *V.ŋV

Vŋ.V – one degree + three degrees (the first vowel is nasalized)

*V.ŋV – three degrees + three degrees (no nasalization)

6. Sequential typology

(a) The following long vowel

The three-degreed movement becomes easier due to the three segments, instead of the two.

Cantonese, Thai, Maori

(b) The germination

The same effect as that of (a)

Inuktitut, Malayalam

7. Four-dimensioned typology

(a) Onset velar nasal + nasalized vowel takes precedence on onset velar nasal + oral vowel

Japanese, Spanish, Marathi

(b) The one or two-degreed movement takes precedence on the three-degreed movement.

American English, French, Korean