Gemination and segmental patterns with reference to Sanskrit and Assamese: An OT account

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Abstract

This paper addresses the issue of segmental distribution and patterns with reference to the gemination processes in Sanskrit and Assamese within an Optimality theoretic model (Prince and Smolensky, 1993). Segmental properties inherent in a segment and cross-linguistic well formedness conditions play a significant role in triggering gemination. The underlying liquids and approximants /j/, /r/, /l/, and /w/ trigger gemination of the preceding obstruents in Assamese. However, what has been conspicuously observed in synchronic Assamese grammar is that, in the surface forms, /j/ gets dropped in gemination and a process of metathesis occurs in the form of an insertion of a vowel before the geminates. The process is analyzed in an Optimality theoretic model and I have proposed the ranking *CCG>>MAX C>> Linearity to represent the phenomenon. However, we need one more markedness constraint *V[back, round]glides to address the issue of obstruent geminates followed by approximant 'w'. In such cases 'w' gets dropped in the surface form, and we do not get any process of metathesis operating here. Actually, what happens is a consequence of the fact that metathesis is not possible because Assamese does not allow /ɔw/ or /ʋu/ diphthongs. Hence, I propose that the constraints *V[back, round]glides, *Cw are higher ranked over [Max Round>>Max W] and Linearity.
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1. Introduction

Gemination patterns in Sanskrit have been addressed by several theories in Phonology. The works of Vaux (1992), Whitney (1868) and Wackernagel (1896) take into consideration the graphic doubling of consonants, observed in several ancient Sanskrit manuscripts. The later stage of Sanskrit, especially Middle Indic, demonstrates the presence of undeniable phonetic geminates with reference to graphic doubling. Saussure (1889) claims that the stop in stop-sonorant Sanskrit clusters always gets geminated, although it may not have a graphic representation. According to Hock (1991a,b) gemination occurs as a compromise between two possible syllabifications i.e. (VC) (RV) and (V) (CRV). The same idea has been pursued by Vennemann (1988) and Vaux (1992). Calabrese (2009) proposes that the avoidance of complex onsets and codas is the reason the reasons behind the occurrence of gemination in Sanskrit and Middle Indic. In this paper I claim that the obstruent in word medial obstruent sonorant clusters in Sanskrit and Assamese undergoes gemination in order to repair the violation of the Syllable Contact Law. The Syllable Contact Law is based on the sonority principle. Vennemann (1988) defines syllable contact in the following way:

''A syllable contact A\$B is the more preferred, the greater the sonority of the offset A and the less the sonority of the onset B.''

If there is a bad contact over a syllable boundary, languages frequently induce a change so as to make for a better candidate. Vennemann (1988:50) posits a typology of sound changes that are induced by syllable contact.

(1) a. Coda weakening: (b.r > w.r   Hausa)
     b. Onset strengthening   (k.l > k.t   Kazakh)
     c. Tautosyllabification: (k.l > .kl   Germanic)
     d. Gemination   (b.r > b.br   Latin to Italian)
     e. Epenthesis   (n.r > n.dr   Spanish)
     f. Regressive assimilation: (k.m > ŋ.m   Korean)
     g. Progressive assimilation: (g.n) > g.g   Pali)
     h. Contact anaptyxis   (p.r > p V.r Winnebago)
     i. Contact metathesis   (d.n > n.d   Sidamo)

The input in each of the examples in (1) exhibits a sonority rise over the syllable boundary and the output of each of the examples avoids a rise in sonority thereby it leads to the formulation of a constraint on syllable contact. It suggests: avoid rising sonority over a syllable boundary. The present paper too talks about this Syllable Contact Constraint while dealing with the gemination of word medial obstruent-sonorant clusters (C1 C2>> C1C1C2 where C1 is obstruent and C2 is lateral, rhotic, or approximant but not nasal). Here, the data in Sanskrit exemplify the fact that the obstruent geminates occur in order to repair the bad syllable contact incurred by the process of syllabification. However, in Sanskrit, an obstruent does not geminate if it is followed by a nasal. In such cases, Syllable Contact is violated by the optimal candidate and the highest ranked constraint will be * σ[TN that assigns a violation to any stop-nasal sequence at the left edge of the syllable.

Although Assamese has retained similar constraint rankings to its ancestral language Sanskrit, in most of the cases of gemination of obstruents followed by /r/ and /l/ some markedness constraints are invoked in relation to gemination of obstruents followed by /j/ and /w/. Hence, the ranking schemata involved in Assamese gemination are synchronic in nature. Assamese, one of the modern Indo-Aryan languages, has inherited many words from Sanskrit. Kakati (1941) established Assamese as an Indo-Aryan language that is derived from Sanskrit. Assamese words have been equated to Sanskrit formations wherever available in Kakati's monumental study. It includes words that appear in Sanskritised garb in Sanskrit dictionaries. Furthermore, it is interesting to observe that Assamese orthographic representation still adheres to the phonotactic principles of Sanskrit as far as words with medial obstruent–sonorant clusters are concerned. But there are some marked differences between the Sanskrit words and their Assamese counterparts in terms of pronunciation. Such inconsistency leads to the emergence of different rankings of constraints in grammar. Assamese data exhibits not only the presence of syllable contact laws governing the syllabification process but also the repair strategies of metathesis and deletion. Sanskrit data of gemination are taken from Masica (1991) and for Assamese data I have consulted Kakati (1941) and Goswami (1966). Additionally, I have collected the speech samples of five male and five female speakers of the eastern variety of Assamese (standard variety) and transcribed them in IPA to justify my claim about the Assamese gemination process and the repair strategies involved therein. All the respondents are highly educated and within the age group of 25–30 years.

2. Sanskrit and Assamese: a brief description

William Jones, an European philologist, told the Asiatic Society in Calcutta in 1786 ''The Sanskrit language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and in the forms of grammar, than could have been produced by accident; so strong, indeed, that no philologer could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists.'' Sanskrit, one of the scheduled languages of India, is considered to be the source of all Indo-Aryan languages. It is one of the classical languages of India and, as such, has a glorious history of its evolution and development. This language made its mark not only in economics, politics, history, and culture but also in literature, philosophy, and religion. It is a standardized variety of Old Indo-Aryan originating as Vedic Sanskrit and tracing its linguistic ancestry back to Proto Indo-Iranian and Proto-Indo-European. Sen (1975) says, ''Classical Sanskrit is a literary language based on the speech of the educated men (sista) of the midland (madhyadesa). At the same time, it contains features which really belonged to the dialect of the north west (udicya), the mother tongue of Panini, the codifier of Classical Sanskrit.'' However, Classical Sanskrit has undergone various phases of evolution and resulted in the emergence of the Modern Indo-Aryan languages with Prakrit and Apabhramsa as intermediate stages. Classical Sanskrit distinguishes about 36 phonemes; the presence of allophony