

Sanskrit gemination as a lengthening: in relation to svarabhakti, yama, and Middle-Indo Aryan assimilation

In Sanskrit, one of the members of various biconsonantal clusters underwent gemination, typically the one following *r* or *h*, e.g. *art^ha-* > *art^hha-*, *jihma-* > *jihmma-*, but otherwise the first member of the consonant clusters, e.g. *sapta-* > *sappta-*, *cakra-* > *cakkra-* (cf. Whitney 1889, Wackernagel 1896, and Varma 1929).

This paper claims that Sanskrit gemination is a syllable structure change AND lengthening. On the one hand, gemination is governed by syllable structure as earlier scholars have claimed. For example, in Hock's (1991a, b) interpretation, gemination is a compromise between two possible ways of syllabification, i.e. VC\$RV and V\$CRV, resulting in VC\$CRV (cf. also Varma 1929, Vennemann 1988, and Vaux 1992). On the other hand, a common denominator of various gemination processes is a lengthening of the oral closure or, more broadly, oral gesture, which does not necessarily follow from the syllable structure alone. The lengthening of the oral closure might be one way of resolving the unstable transition of two successive consonants in terms of articulation and of the syllabic status. Other contemporaneous phenomena, i.e. svarabhakti vowels (e.g. *darśa-* > *dariśa-*), yama (e.g. *ruk^hma-*), and epenthetic consonants (e.g. *aśman-* > *aśpman*), also have the same effect of lengthening the entire consonant sequence and thus can be considered to be alternative ways to resolve the same problem.

Earlier studies such as Varma (1929), Murray (1982), Vennemann (1988), and Vaux (1992) have assumed that Sanskrit gemination was a direct precedence of Middle Indo-Aryan assimilation. Based on the proposed interpretation of gemination together with Suzuki (2002)'s interpretation of Pali assimilation, I will show that both phenomena are characterized by the predominance of the oral closure. The apparent contradiction of stop clusters, i.e. $C_1C_2 > C_1C_1C_2$ in gemination (e.g. *sapta-* > *sappta-*) but $C_1C_2 > C_2C_2$ in assimilation (e.g. *sapta-* > *satta-*), is attributed to the difference of the two processes: gemination lengthens the closure represented by the first consonant whereas assimilation is conditioned by the prevocalic release that belongs to the second consonant.

The proposed analysis provides better understandings of Sanskrit gemination as well as a uniform basis of gemination, other contemporaneous processes, and later developments of consonant clusters. Disagreements among phonetic treatises and variations in manuscripts may suggest that Sanskrit gemination is phonetic rather than phonological. The phenomenon shows transitional stages towards Middle Indo-Aryan assimilation and can be regarded as evidence as to how assimilation might proceed in general.

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