# Research article: Telescoping in Phonemic Change of the Past Stems Ended by "-št"

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## Abstract

In many Iranian languages including Persian, the past tense stem of some verbs terminates with –št, while their present stem ends with a /r/ which in fact exists in the root; but this /r/ does not appear in the past stem. These verbs are */ænbaštæn/, /engaštæn/, /pendaštæn/, /daštæn/, /kaštæn/, /gozaštæn/, /gaštæn/, /gozæštæn/, /gomaštæn/, /negaštæn/* and their combinations. Concerning the basic morpheme of ⌈T⌋ for the past tense of verbs represented in different allomorphs (*t*, *d*, *st*, *št*, *xt*, *ft*, *ad*, *ud* and *id*), this research aims to detect the process of formation the -št form of this morpheme in the mentioned verbs. The question is what phonemic processes have led to the deletion of a consonant (*r*) from the root (which is athwart the definition of "root") and appearance of /š/ in the past stem. The main motivation for this investigation was the lack of convincing reason, explanation or even analysis for the issue. This research based on phonetic factors for sound change containing the elements of motor planning, aerodynamic constraints, gestural mechanics, and especially interactive-phonetic (IP) on one hand, and historical studies on the other hand, has applied both diachronic and synchronic evidences for analysis and explanation of the sound change, and ultimately morpheme formation in the discussed subject.

The absence of a consonant in the stem of a verb, in Persian is a token for being stem constructor, but the presence of a consonant in the root and its absence in only one of the stems indicates that there must be a reason for disappearing the consonant of the root; particularly in past stems due to their construction. In the base of all past stems, "t" or "d" (depending on their voicing the environment) is seen, whilst the presence of /š/ (the only phoneme without any vestige neither in the root nor in the base form of stems, unlike other phonemes than "t/d" in the stems) in /št/ has been regarded as the sole "exceptional" past stem morpheme by the scholars, due to the lack of any reason for it.

The assumption of this study was that the initial allomorph of past stem constructor should have been /st/ which had make the ending consonant cluster /rst/, and then

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through the telescoping process of the /r/ (unvoiced [ɾ/ɹ]) with [s] has triggered to emerge /š/. The question here is about the fount of /s/ in the stem. Some investigations have pointed out that in the aorist paradigm of the Old Iranian languages including Old Persian, /s/ had been the aorist stem constructor; therefore some stems were ended with /*rst/. According to researchers, this /s/ is still seen in some verbs, despite vanishing of aorist inflection, and in some cases, it has been changed into /š/.

This statement improves our presupposition about the initial allomorph of past stem constructor /st/ instead of /št/ to make ending consonant cluster /rst/ in the past stem. Moreover, one of the most frequent past tense morpheme of many stems in Iranian languages is /-st/, and based on diachronic (e.g. in Indo-European and Indo-Iranian Languages) and synchronic (German dialects and Scandinavian Languages) studies there is a universal sound change of s→š in an especial context. Hereupon, it seems reasonable to emerge such phoneme in the discussed stems if the condition is fulfilled. One of the triggering conditions has been reported in *ruki rule* (s → š / r, u, k, i -). Concerning the adjacency of /r/ (the last consonant of the root) and /s/ of the morpheme /st/, the condition is acquired, but the data in Iranian Persian language show that a /t/ or /n/ is needed for the change to occur.

The process of this phonemic change seems to be a phasic telescoping process via saltation (conversion of sound A to C, leaping over a phonetically intermediate sound B) as follows. In order to articulate /r/ at the end of the root and the /s/ of the past tense morpheme, respectively the tip and the blade of the tongue touches the back and the front of the alveolar ridge. In this companion, /s/ gets regressive assimilation with /r/ and becomes retroflex ([ʂ]: intermediate of saltation) by pulling back the tip of the tongue into the hard palate, but the alveolar /t/ in /st/ (which is articulated by blade of the tongue in Persian language) removes immediately the retroflex feature by pulling up the tip of the tongue toward the blade to form /š/. Thus based on telescoping process, contrary to the opinion of most scholars, the /r/ of the root has not been omitted but has been merged into /s/ to emerge the sole phoneme /š/: *CV*r+st →*CV*št.

The results not only explain the sound change in the above mentioned verbs, but also in some other words in Persian  (e.g. /gošne/ *hungry*, /tešne/ *thirsty* and etc.); and in dialects of Iranian languages (e.g. /šuštan/ in Mahabadi Kurdish and /šištan/ in Davani dialect for /šostan/ *to wash* in Persian). As previously mentioned, in all of the samples of this change a /t/ or /n/ must be after /rs/ (*V*rsn/t). Moreover, the appearance of this phenomenon in simple words (free morphemic structure) like *gošne* (hungry), *tešne* (thirsty), *Paštu* (Pashto), *pašne* (heel) and so forth, indicates that this change cannot be a morphophonemic change. Therefore, this view does not consent to most of the studies in this case which remark it as a morphophonemic change; athwart, it accords with all studies and findings in IP model on phonemic change of /s/ to /š/.

**Key words:** Telescoping, Past Stem, Interactive-phonetic (IP), Merger, Saltation