



# Initial Back Fricatives in Middle Persian: Preserved Laryngeals?

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**Abstract:** Since the laryngeal theory is now widely accepted, many scholars have attempted to find evidence of consonantal laryngeals in various Indo-European daughter languages outside of Anatolian. The presence of initial fricatives that seem to continue laryngeals in Khotanese and Persian has been noted by a few scholars such as Martin Kümmel, but little has been done to determine the conditions for this alleged retention. From the data presented in this paper, it appears as if Middle Persian initial fricative consonants in place of original laryngeals are most common before front vowels, and possibly before long  $\bar{o}$ . If prothetic, the presence of these consonants would be irregular, if inter-dialectal borrowing is not at fault. Alternatively, it may be possible that the dialect ancestral to Middle Persian, which was distinct from attested Old Persian, retained some initial laryngeal consonant which is reflected as Middle Persian  $x$ - and  $h$ - in certain contexts.

**Keywords:** Middle Persian, Iranian linguistics, Indo-European linguistics, Laryngeal theory, Historical phonology, Proto-Indo-European

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## Introduction

Proto-Indo-European, the reconstructed common ancestor of all Indo-European languages has, for a very long time, been reconstructed with a series of laryngeal consonants originally formulated by Ferdinand de Saussure to explain different patterns of vowel alternation in its descendants.<sup>1</sup> These consonants are, in the literature, transcribed  $*h_1$ ,  $*h_2$ ,  $*h_3$ . Despite belief in their existence as consonants at some early stage of the reconstructed parent language, in modern Indo-European studies, the only branch of the family widely held to preserve consonantal laryngeals is Anatolian. The Anatolian branch, which includes Hittite and many other languages spoken primarily in ancient Turkey, is also widely held to have been the first Indo-European branch to diverge from all the others.<sup>2</sup> Anatolian not only preserves unambiguous evidence of laryngeal consonants in word-initial position, but also intervocally, as in Hittite *paḥḥur* 'fire'<sup>3</sup> from  $*peh_2ur$ . In the literature, however, there are occasionally other isolated examples of alleged laryngeal preservation. For example, Beekes

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<sup>1</sup> Beekes and de Vaan, *Indo-European Linguistics*, 102–103.

<sup>2</sup> Beekes and de Vaan, *Indo-European*, 102–103.

<sup>3</sup> Kloekhorst, *Etymological Dictionary*, 613.

and de Vaan<sup>4</sup> note that *\*h<sub>2</sub>e* and *\*h<sub>3</sub>e* word-initially appear to become *ha-* and *ho-* respectively in Armenian, while *\*h<sub>1</sub>e* becomes *e-*. Though this particular claim is not without its detractors,<sup>5</sup> it serves as an example of the common phenomenon of Indo-Europeanists attempting to find evidence of consonantal laryngeals beyond Anatolian. Unless the common ancestor of all non-Anatolian Indo-European languages lost consonantal laryngeals, it is certainly not impossible that consonantal laryngeals are preserved in other branches. Indeed, there is independent evidence from a few distinct branches that Proto-Indo-European laryngeals were still consonantal in some of its descendent proto-languages.

One such proposal of consonantal laryngeal preservation is that of certain Iranian languages, which seem to have initial glottal or velar fricatives where there were once laryngeals.<sup>6</sup> Khotanese and Persian, in particular, frequently exhibit initial fricatives in such positions,<sup>7</sup> but the exact conditions are unclear. Persian is especially confounding, as there are examples of initial *x-*, *h-*, and *∅-* in the reflexes of roots that began with laryngeals, with no immediately obvious conditioning factors. This paper will attempt to gather data and present possible tentative scenarios for laryngeal preservation in different stages of Persian in order to add to the discourse surrounding whether or not initial velar and glottal fricatives actually do continue consonantal laryngeals. Specifically, it will be argued that the quality of the following vowel at the Middle Persian stage may be predictive of the presence of an initial laryngeal, but that more research is required for certitude.

The implications of the presence of preserved consonantal laryngeals in Iranian would be manifold. For example, more than one known branch could be used in reconstructing the precise consonantal identity and articulation of the laryngeals, as the comparative method upon which historical linguistics is based becomes more precise the more data is used. Furthermore, linguists may be able to gain a better understanding of the likelihood of certain consonantal segments to be deleted when compared to others. Such typological parallels are ever-important for the historical linguist attempting to discern the precise articulation of an ancient phoneme.

## The Preservation of Laryngeal Consonants in Proto-Iranian

Firstly, it is widely held that laryngeal consonants existed at the Proto-Indo-Iranian stage, a more recent reconstructed daughter language of Proto-Indo-European that serves as the common ancestor of Iranian, Indic (including Sanskrit) and Nuristani in Afghanistan. Laryngeal consonants in Proto-Indo-Iranian are generally written *\*H*, whether or not there were more than one. Kümmel<sup>8</sup> notes that a number of Iranian languages show reflexes of an initial *\*θ* in the word meaning ‘father’s brother’. In Proto-Indo-Iranian, this word is reconstructed as *\*daHiwár*, with the initial *\*θ* in Proto-Iranian likely being from *\*dH*, the result of an early metathesis of *\*a* and *\*H*.<sup>9</sup> Among modern descendants, Ossetian shows the reflex *tiw*, which appears in Dzagoeva’s paper “The custom of avoiding “Uaysadyn” among Ossetians of the XIX-XXI centuries: On the materials of the ethnographic expedition to Turkey”<sup>10</sup> as *mæ-tiw* ‘my father’s brother’, with the initial *t-* of the second element completely inexplicable if from an initial *\*d-*, which would yield Ossetian *d-*. Likewise, Yaghnobi has the form *siwir* ‘id.’,<sup>11</sup> which, once again, is only explicable if originally from *\*θ*.<sup>12</sup> Furthermore, Proto-Indo-European *\*meith<sub>2</sub>-*

<sup>4</sup> Beekes and de Vaan, *Indo-European Linguistics*, 147

<sup>5</sup> cf. Olsen and Thorsø, “Armenian,” 204

<sup>6</sup> Kümmel, “Is Ancient Old and Modern New?,” 79–96.

<sup>7</sup> Kümmel, “The Survival of Laryngeals in Iranian,” 162–172.

<sup>8</sup> Kümmel, “Is Ancient Old and Modern New?,” 82–83.

<sup>9</sup> Kümmel, “Is Ancient Old and Modern New?,” 82–83.

<sup>10</sup> Dzagoeva, “The Custom of Avoiding ‘Uaysadyn’,” 2.

<sup>11</sup> Cheung, “Selected Pashto Problems,” 185.

<sup>12</sup> Novák, “Archaism and Innovation in the Eastern Iranian Languages,” 25.

‘to change position’ is reflected as Proto-Iranian *\*maiθH*, with reflexes of *\*θ* in Old Khotanese *ha-mīh-* ‘to change’, from *\*fra-maiθH-*, and Old Avestan *maēθā-*.<sup>13</sup> The Latin word *mūtō* ‘I exchange’, from the o-grade, indicates the existence of cognates outside of Indo-Iranian which show an original *\*t*.<sup>14</sup> This discrepancy is explained by the fact that, in the Iranian branch, stops became fricatives before another consonant. As such, it is more economical to assume a single sound change from *\*p*, *\*t*, and *\*k* to *\*f*, *\*θ*, and *\*x* respectively before consonantal laryngeals,<sup>15</sup> rather than assuming a sound change where stops plus laryngeals became aspirates in Proto-Indo-Iranian and that these aspirates later became fricatives.

It also appears as if consonantal laryngeals may have been present in some words loaned into Proto-Indo-Iranian from the BMAC culture. The famous Avestan name *zaraθuštra-* shows *\*θ* from original *\*t-H*.<sup>16</sup> The first element is likely the zero grade of Avestan *zarant-* ‘old’ with a vocalized nasal.<sup>17</sup> Normally, a form like *\*zarat-* would yield Avestan *zarat-* or *zaraṭ-*, as no rule of spirantization of intervocalic *\*t* is known in Avestan. Kümmel<sup>18</sup> explains the presence of the fricative as a result of the regular Iranian fricative reflex of original stop-laryngeal clusters, reconstructing the word for ‘camel’ with an initial laryngeal. This onomastic compound would likely date to the Proto-Iranian stage (and is unattested in Indic), and may have been a common name, as livestock-related names are known to be very common in old Indo-Iranian languages. Such names, known as *bahuvrihi*, often carry the interpretation of ‘(one who has) [meaning of the name]’, compare the Mitanni-Indic name *Biridašwa*, probably meaning ‘whose horse is dear’, but literally meaning ‘dear horse’.<sup>19</sup> Because names were often constructed in such a way in old Indo-Iranian societies, the interpretation of *zaraθuštra-* as ‘(one who has an) old camel’ is quite sound. This indicates that the medial /θ/ continues an original *\*t-H* cluster. Since *\*Huštra-* ‘camel’ may be a BMAC loanword,<sup>20</sup> at least one laryngeal-like consonant may be posited for the “BMAC language”. Alternatively, BMAC loanwords may have received a prothetic glottal stop in Proto-Indo-Iranian.<sup>21</sup>

Finally, there are also vestiges of what were once laryngeals in the inherited Old Avestan case declension paradigm. The genitive plural *-ām/-qm* /a.am/ (< *\*aHam*) patterns as two syllables in the metre, rather than a single long vowel.<sup>22</sup> Unlike the Rigveda, which preserves laryngeal-conditioned hiatus more sparingly, prosody in the Gathas consistently indicates that sequences of vowels that were originally separated by a laryngeal are to be read as two syllables<sup>23</sup> which further indicates the presence of laryngeals in Proto-Iranian.

## Modern Iranian Initial Consonants in place of Proto-Iranian Laryngeals

The forms mentioned above show that it is quite likely that there was at least one laryngeal consonant at the Proto-Iranian stage, though it is widely held that the laryngeals do not show consonantal reflexes in the modern languages. The Persian evidence may, however, be suggestive of retention, both in words borrowed from BMAC and in originally native forms. In some cases, there are even words which originally exhibited an initial laryngeal consonant in which a myriad of modern Iranian languages show an initial fricative. Of the latter set of words,

<sup>13</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 260.

<sup>14</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 260.

<sup>15</sup> Kümmel, "The Survival of Laryngeals in Iranian," 162–164.

<sup>16</sup> Kümmel, "Is Ancient Old and Modern New?."

<sup>17</sup> Bartholomae, *Altiranisches Wörterbuch*, 1676.

<sup>18</sup> Kümmel, "Is Ancient Old and Modern New?," 4.

<sup>19</sup> Gentile, "Indo-Iranian Personal Names in Mitanni," 156.

<sup>20</sup> Lubotsky, "The Indo-Iranian Substratum," 307.

<sup>21</sup> cf. Axel Palmér, "Traces of ‘Pre-Indo-Iranian,’” 15.

<sup>22</sup> Beekes, *Grammar of Gatha Avestan*, 88–90.

<sup>23</sup> Beekes, *Grammar of Gatha Avestan*, 88–90.

'bear' is perhaps the best known. Not only does New Persian show an initial *x-* in the word *xers*, but a Western Balochi form *hers* is also known,<sup>24</sup> as are Kurmanjî *hirç/hurç*,<sup>25</sup> and Zazakî *heş*.<sup>26</sup> These cases of initial fricatives seem to be largely confined to Western Iranian. Khwarezmian *hrs* /*hirs*/, which may actually be a borrowing from Middle Persian<sup>27</sup> seems to be the only Eastern Iranian example. The word for 'egg' is also a notable example. In this word, Balochi, Kurdish, and Persian all show initial fricatives: compare Middle Persian *xāyag* 'egg'<sup>28</sup> and Kurdish *hêk*,<sup>29</sup> with their Balochi relatives *haik*, *hêk*, *haig* etc.,<sup>30</sup> all from Proto-Iranian \*Hāwya-kah from Proto-Indo-European \**h<sub>2</sub>ōwyo-*.<sup>31</sup> The Zaza-Gorani group also often shows initial fricatives, as in Gorani *hāya*<sup>32</sup> and Zazakî *hak* 'id.'. The aforementioned Gorani word may be borrowed from Middle Persian, but the Zazakî form is probably native. Indeed, of the words above, many are explicable as Middle Persian borrowings, except for the Kurmanjî form for 'bear'<sup>33</sup> and the Zazakî words. Given the geographic location of Zazakî in Eastern Turkey, at the very edge of the Iranian-speaking area, it is possible that it was not subject to certain areal innovations causing the loss of initial fricatives. In contrast, in both of the aforementioned word sets, certain languages spoken on the shores of the Caspian Sea have no initial fricative, as in Iranian Talysh *üw* 'egg'.<sup>34</sup> It appears that Kurmanjî was affected by the theoretical areal deletion of at least \**h<sub>2</sub>*, as *ax* 'dirt, earth, soil' appears to show the regular initial reflex of \**h<sub>2</sub>* before \**a* in Kurdish, while *xak* is probably a borrowing from New Persian *xâk* 'id.'. Kurmanjî does, however, have the form *hêst* 'bone' from \**Hast-*.

### Middle Persian Reflexes of Initial Laryngeals?

In both of the sets of cognate words mentioned above, if these initial fricatives are continuing laryngeals, they would be reflexes of \**h<sub>2</sub>*, which consequently may not have merged with \**h<sub>1</sub>* in Proto-Iranian, though these two segments did merge in Indo-Aryan.<sup>35</sup> This, then, may explain the extreme paucity of Persian and other Western Iranian initial *x-* and *h-* for Proto-Indo-European \**h<sub>1</sub>*-. The only stable example seems to be Middle Persian *xêšm* 'anger', from Proto-Indo-European \**h<sub>1</sub>oih<sub>2</sub>smos*.<sup>36</sup> This form appears to be native, and no other generally accepted etymology exists for it. Kümmel<sup>37</sup> assumes some kind of laryngeal metathesis or assimilation in this word: \**h<sub>1</sub>...h<sub>2</sub>* > \**h<sub>2</sub>...h<sub>1</sub>* or \**h<sub>1</sub>...h<sub>2</sub>* to \**h<sub>2</sub>...h<sub>2</sub>*. In any case, it seems that the lack of initial back fricatives in place of former initial \**h<sub>1</sub>* and \**h<sub>3</sub>* indicates that the three laryngeals were treated differently in a variety ancestral to Middle Persian. It does not seem likely given a merger of all three laryngeals (as is posited for Proto-Iranian) that nearly every case of an initial back fricative would correspond to original initial \**h<sub>2</sub>*. The author was only able to find very few solid examples of back fricatives reflecting \**h<sub>1</sub>* and \**h<sub>3</sub>*, with all being listed below. Such a result is unlikely assuming random variation. Furthermore, whether or not the explanation for these initial consonants is preservation or prothesis, it seems that the presence of a front vowel

<sup>24</sup> Soohani, *The Phonology of Iranian-Balochi Dialects*, 19.

<sup>25</sup> Korn, *Grammar of Balochi*, 155.

<sup>26</sup> Werner, "East-Anatolian Ethnicity," 679.

<sup>27</sup> Peyrot et al., "The Word for 'Iron' in Iranian and Tocharian," 411.

<sup>28</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>29</sup> Korn, *Grammar of Balochi*, 155.

<sup>30</sup> Korn, *Grammar of Balochi*, 108.

<sup>31</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>32</sup> Mahmoudveysi et al., *The Gorani Language of Gawraju*, 18.

<sup>33</sup> Peyrot et al., "The Word for 'Iron' in Iranian and Tocharian," 411.

<sup>34</sup> Paul and Payne, *Description of Iranian Taleshi*, 350.

<sup>35</sup> cf. Beekes and de Vaan, *Indo-European Linguistics*, 127.

<sup>36</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>37</sup> Kümmel, "The Survival of Laryngeals in Iranian", 166.

(from Proto-Iranian \*ai or \*i) is a strong predictor of the presence of an initial *x-* or *h-* in Middle Persian:

**Table 1.** Middle Persian consonant-initial reflexes of PIE roots beginning with laryngeals.

Gloss	MP	Proto-Iranian	Proto-Indo-European
bear	<i>xirs</i> <sup>38</sup>	*H <sub>2</sub> ǵa-	*h <sub>2</sub> ǵt <sub>ko</sub> -
ploughshare	<i>hēš</i> , New Persian <i>xēš</i> <sup>39</sup>	*Haiš-	*h <sub>2</sub> oi(H)s-
anger	<i>xēšm</i> <sup>40</sup>	*Haišmah	*h <sub>1</sub> oih <sub>2</sub> smos
thing, matter	<i>xīr</i> , <i>īr</i> <sup>41</sup>	*H <sub>2</sub> ǵya-	*h <sub>2</sub> ǵ'-
firewood	(h) <i>ēsm</i> <sup>42</sup> , (h) <i>ēzm</i> ?, New Persian <i>hezom</i>	*Haid-sma- (whence also Avestan <i>aēsma-</i> )	*h <sub>2</sub> eid <sup>h</sup> -
spear	New Persian <i>xišt</i> <sup>43</sup>	*Hršti-	*h <sub>2</sub> ǵsti-
dust, earth	<i>xāk</i> <sup>44</sup>	*Hāh-akah-	*h <sub>2</sub> eHs-

<sup>38</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 94.

<sup>39</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>40</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>41</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 99 and 371.

<sup>42</sup> Kümmel, "The Survival of Laryngeals in Iranian," 166.

<sup>43</sup> Steingass, *A Comprehensive Persian English Dictionary*, 461.

<sup>44</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

narrow	<i>hanzūg</i> <sup>45</sup>	* <i>Han-ju-</i>	* <i>h<sub>2</sub>em-ǵ<sup>h</sup>u</i>
ear of corn	<i>hōšag</i> <sup>46</sup>	* <i>Hauš-akah-</i>	* <i>h<sub>2</sub>ews-</i>
intellect	( <i>h</i> ) <i>ōš</i> <sup>47</sup>	* <i>HušiH</i>	* <i>h<sub>2</sub>us-íh<sub>1</sub></i>
raw	<i>xām</i> <sup>48</sup>	* <i>HaHmáh</i>	* <i>h<sub>2</sub>eh<sub>3</sub>mós</i>

The data above suggests that initial back fricatives may be conditioned by the following vowel. Initial *x-* and *h-* seem to be most common before Middle Persian front vowels *-i-* and *-ē-*, the latter of which derives from Proto-Iranian \**ai*. Out of forms continuing original PI \**ai* vowel sequences (> *ē*), only Middle Persian *āy-/ay-* ‘to come’ shows no evidence of an initial fricative. This may be because the following vowels in the conjugation paradigm caused the \**i* to remain exclusively consonantal and not form a diphthong with \**a*, since *āy-* is suppletive in the past tense with the stem *āmad*<sup>49</sup> and every Middle Persian present tense conjugation suffix begins with a vowel. The presence of initial fricatives in all of the other forms may be due to the fact that palatalization caused what were once uvular or glottal fricatives (or something similar) to become fronted to \*[ç], which then became [x], as in the history of many Siouan languages.<sup>50</sup> This may have happened whether or not these fricatives can be ultimately explained due to prothesis. The presence of *x-* appears to be particularly common before original syllabic stressed \**ǰ*, which appears to yield *-ir-*.

The conditioning factors for the presence of *x-* versus *h-* in these words are quite confounding. Some form of fortition of Middle Persian *h-* must also be posited in the historical period to explain discrepancies such as *hēš* ‘ploughshare’ and New Persian *xeš* with a velar /x/. Furthermore, it appears as if there are cases where the Middle Persian orthography largely does not actually represent the initial fricative. In the word *ēmag* above, it is possible that nearly all spoken forms started with an initial *h-* as the lack of any vowel-initial reflex in New Persian *hime* shows. The New Persian form *hēzom* is derived from orthographic Middle Persian <‘ysm’>, normally to be read *ēsm*, which Kümmel<sup>51</sup> believes was actually \**hēsm*. In this case, it is theoretically possible that no initial fricative existed in the Middle Persian stage, but no regular sound change of initial Middle Persian  $\emptyset$  to New Persian *h-* is known. There is at least one New Persian form that shows an initial *h-* where it is unattested in Middle Persian, however:

<sup>45</sup> Kümmel, "Is Ancient Old and Modern New?," 83

<sup>46</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 194.

<sup>47</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 391

<sup>48</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>49</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 7.

<sup>50</sup> Wolff, "Comparative Siouan II," 113–121.

<sup>51</sup> Kümmel, "The Survival of Laryngeals in Iranian", 166.

*astag* ‘fruit stone’ and modern Persian *hasta* ‘id.’.<sup>52</sup> These words do not appear to be borrowings.<sup>53</sup> Either way, the forms in **Table 1** show that in cases where a stressed syllabic \*r̥ or a front vowel was present in the initial syllable, one can reasonably expect the occurrence of either initial *h-* or *x-* in Middle Persian. If the consonants in these forms do indicate a retention, the laryngeal consonant was likely lost in other positions only after the Old Persian diphthong *ai* became long *ē* in Middle Persian,<sup>54</sup> as, otherwise, the conditioning environment of the front vowel would not be present to allow palatalization or fronting of the laryngeal consonant, unless some sort of long distance assimilation happened, which would not explain *āy-*.

### Potential Conditions for the Loss of Initial \*H in Middle Persian

There are also isolated cases where specific Northwestern Iranian languages show initial *h-* against Persian *∅-*. Kurmanjî Kurdish has *hêr-*, meaning ‘to grind’ from Proto-Indo-European \**h<sub>2</sub>elh<sub>1</sub>-* and cognate with Classical Armenian *alam* ‘I grind’,<sup>55</sup> which can be compared with New Persian *ârd* ‘flour’, from Proto-Indo-European \**h<sub>2</sub>lh<sub>1</sub>-tós*,<sup>56</sup> as the second laryngeal would not vocalize in Iranian.<sup>57</sup> Interestingly, these forms show a sequence of a back vowel and a liquid as the result of unstressed syllabic \*r̥ in Proto-Iranian, probably indicating two different reflexes depending on whether or not the syllabic liquid was stressed in an older stage of the language (see Schmitt 2008 on the likely presence of a syllabic *r* in Old Persian), as in Middle Persian *āluh* ‘eagle’ from Proto-Indo-European \**h<sub>2</sub>r̥gipyós*.<sup>58</sup> Suggestions of the relation of Modern Persian *âs*<sup>59</sup>, to the root \**HarH-* ‘to grind’ should be rejected on phonological grounds, as the disappearance of \**r* would be irregular. Indeed, \**r* is only known to disappear when it is the first element of a medial cluster of three consonants<sup>60</sup>, as in New Persian *xišt* from Proto-Iranian \**Hršti-*.<sup>61</sup> Instead, *âs* is probably from Proto-Indo-European \**h<sub>2</sub>ek-* ‘sharp’. Middle Persian *âdar/âdur* ‘Azar (the ninth month of the year in the Persian calendar)’ from Proto-Indo-European \**h<sub>2</sub>eh<sub>1</sub>tr-*<sup>62</sup> shows that back vowels surface as the reflexes of original unstressed \*r̥ in word-medial position as well. **Table 2** below shows Middle Persian *∅-* from PI word-initial \*H before back vowels, including from the vocalic reflex of unstressed \*r̥:

**Table 2.** Middle Persian vowel-initial reflexes of PIE roots beginning with laryngeals.

Gloss	MP	Proto-Iranian	Proto-Indo-European
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<sup>52</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 56.

<sup>53</sup> Kümmel, "The Survival of Laryngeals in Iranian", 166.

<sup>54</sup> Korn, "Contributions to a Relative Chronology of Persian," 85–127.

<sup>55</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 166.

<sup>56</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 166.

<sup>57</sup> Kümmel, "Is Ancient Old and Modern New?."

<sup>58</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 7.

<sup>59</sup> Steingass, *A Comprehensive Persian English Dictionary*, 46.

<sup>60</sup> cf. Cheung, *Etymological Dictionary of the Iranian Verb*.

<sup>61</sup> Kümmel, "Is Ancient Old and Modern New?," 83.

<sup>62</sup> Greenberg, *Indo-European and Its Closest Relative*.

silver	Yazdi New Persian <i>âli</i> , <sup>63</sup> standard <i>arziz</i>	* <i>Hrjatám</i>	* <i>h<sub>2</sub>rǵntóm</i>
eagle	<i>āluh</i> <sup>64</sup>	* <i>Hrjifyá-</i>	* <i>h<sub>2</sub>rǵipyó-</i>
truthful	<i>ardā</i> <sup>65</sup>	* <i>Hrtāwan</i>	* <i>h<sub>2</sub>er-</i>
water	<i>āb</i> <sup>66</sup>	* <i>Hap-</i>	* <i>h<sub>2</sub>ep-</i>
flour	<i>ārd</i> <sup>67</sup>	* <i>HarH-táh</i>	* <i>h<sub>2</sub>elh<sub>1</sub>-</i>
worth, value	<i>arz</i> <sup>68</sup>	* <i>Harǰ-</i>	* <i>h<sub>2</sub>elg<sup>wh</sup>-</i>
strong	<i>amāwand</i> <sup>69</sup>	* <i>HamH-</i>	* <i>h<sub>3</sub>emh<sub>3</sub>-</i>
and	<i>ud</i> <sup>70</sup>	* <i>Hutá</i>	* <i>h<sub>2</sub>u-té</i> (might instead be * <i>u-té</i> )
broth	New Persian <i>âš</i> <sup>71</sup>	* <i>HasH-</i>	* <i>h<sub>2</sub>ek<sup>h</sup><sub>3</sub>-</i>
millstone	New Persian <i>âš</i> <sup>72</sup>	* <i>Hac-</i>	* <i>h<sub>2</sub>ek-</i>
to come (present stem)	<i>āy-</i> <sup>73</sup>	* <i>Hai-</i>	* <i>h<sub>1</sub>ei-</i>

<sup>63</sup> Kent, *Old Persian: Grammar, Texts, Lexicon*, 171.

<sup>64</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 7.

<sup>65</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 11.

<sup>66</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 7.

<sup>67</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 11.

<sup>68</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 11.

<sup>69</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 7.

<sup>70</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 65.

<sup>71</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 167.

<sup>72</sup> Steingass, *A Comprehensive Persian English Dictionary*, 46.

<sup>73</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 7.



bone	<i>ast</i> <sup>74</sup> cf. New Persian <i>hasta</i> ‘fruit stone’ <sup>75</sup>	* <i>Hast-</i>	* <i>h<sub>3</sub>esth<sub>1</sub>-</i>
power	<i>ōz</i> <sup>76</sup>	* <i>Háuja-</i>	* <i>h<sub>2</sub>ewges-</i>
dawn	<i>ōš</i> <sup>77</sup>	* <i>Hušāh-</i>	* <i>h<sub>2</sub>us-ós</i>
death	<i>ōš</i> <sup>78</sup>	* <i>Háušah</i>	* <i>h<sub>2</sub>éwses-</i>
firewood	<i>ēmag</i> <sup>79</sup>	* <i>Haid-sma-(a)kah</i>	* <i>h<sub>2</sub>eid<sup>h</sup>-</i>

The figures above show that, generally speaking, initial back fricatives *x-/h-* seem to be more common before front vowels, some of which continue original syllabic stressed \*ǰ, as in **Table 1**. The only word containing a front vowel in its initial syllable with no initial consonant is *ēmag* ‘firewood’<sup>80</sup> from \**Haid-sma-(a)kah*, ultimately from PIE \**h<sub>2</sub>eid<sup>h</sup>-*. An initial laryngeal consonant may be more regularly absent in place of Proto-Indo-European initial \**h<sub>2</sub>* in Middle Persian when a word begins with a low back vowel /a/, though a large number of counterexamples also exist. Among counterexamples, four forms are notable: *hanzūg* ‘narrow’ from \**h<sub>2</sub>em-ǰ<sup>h</sup>u*, *xāyag* ‘egg’, from \**h<sub>2</sub>ōwyo-*, *xām* ‘raw’ from \**h<sub>2</sub>eh<sub>3</sub>mós*, and *xāk* ‘dust’, from \**h<sub>2</sub>eHs-*.<sup>81</sup>

Despite these examples to the contrary, the forms in **Table 2** show that, while it is not only before Middle Persian front vowels that these initial fricatives are found, the presence of a Middle Persian /a/ or /a:/ after a Proto-Iranian laryngeal may be a good predictor that there will be no initial consonant. There are almost no forms that do not show an initial fricative before a front vowel, save for the forms *ēmag* ‘firewood’, and *īr* ‘thing, matter’,<sup>82</sup> which are both attested with initial fricatives as well. It seems that the presence of an /o:/ vowel in the Middle Persian form is predictive of the lack of an initial consonant h-, with the notable exceptions of (*h*)*ōš* ‘intellect’<sup>83</sup> and *hōšag* ‘ear of corn’,<sup>84</sup> the latter of which belongs to a commonly-borrowed semantic domain. This may be due to some kind of historical labialization, as this also seems to have occurred before \*u, as in *ud* ‘and’, though only one example exists showing a reflex of an initial laryngeal followed by \*u.

<sup>74</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 55.

<sup>75</sup> Steingass, *A Comprehensive Persian English Dictionary*, 1499.

<sup>76</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 62.

<sup>77</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 62.

<sup>78</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 61.

<sup>79</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 98.

<sup>80</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 98.

<sup>81</sup> Kümmel, "The Survival of Laryngeals in Iranian," 166.

<sup>82</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 99.

<sup>83</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 391.

<sup>84</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 194.

## Evidence for and against Initial Fricative Prothesis

Since words in Proto-Indo-European could not begin with a non-high vowel,<sup>85</sup> it is very difficult to ascertain whether or not many originally vowel-initial words would surface with a prothetic voiceless velar or glottal fricative in Middle or New Persian. Furthermore, this difficulty is compounded by the fact that there are few Proto-Iranian forms which began with vocalic *\*u* and *\*i* from which to choose,<sup>86</sup> though see forms such as Manichaean Middle Persian *abzēn* ‘to sew’,<sup>87</sup> from *\*upa-čaiH-*.<sup>88</sup> There are, however, some BMAC loanwords that are often reconstructed with initial vowels. These words do exhibit initial fricatives in Middle Persian, but are orthographically vowel-initial in Old Persian, which represents a dialect very similar but not identical to the ancestor of Middle Persian.<sup>89</sup> For instance, Middle Persian has *xišt* ‘sun-dried brick’, from PI. *\*išt(i)a*, reconstructed with an initial vowel by Lubotsky.<sup>90</sup> The Old Persian form of the modern word is transcribed in the cuneiform script as /išti-/ without an initial consonant.<sup>91</sup> The Middle Persian form is *xišt*, with an initial *x-*. The epenthesis of an initial consonantal *x-* cannot be regular before initial short /i/, because Middle Persian *im* ‘this’ with no initial consonant<sup>92</sup> is likely a direct descendent of an older form *iyam*, which is identical to the Old Persian form.<sup>93</sup> It is thus possible that the reconstruction of *\*išt(i)a* with no initial consonant is incorrect, and it was actually *\*Hišt(i)a*. Perhaps, then, the dialect ancestral to Middle Persian retained these initial consonants while Old Persian did not.<sup>94</sup> Furthermore, New Persian *hūš* ‘intellect’, which mostly occurs in compounds,<sup>95</sup> is from Middle Persian (*h*)*ōš* ‘consciousness, awareness’,<sup>96</sup> attested both with an initial *h-* and without any initial consonant, as aforementioned. The Old Persian form is, however, attested only as ⟨ušiy⟩,<sup>97</sup> once again without an initial *\*\*h-*. Forms like these leave a few distinct possibilities.

## Possible Explanations

Firstly, some cases of Middle Persian *x-* and *h-* may actually go back to initial *\*∅-* and were originally inserted in some words to break hiatus or prevent syllables without onsets from occurring. This phenomenon, though rare, is attested from a number of languages such as the Ritwan languages of the Algic language family,<sup>98</sup> as well as from the Tukanian language Kueretu.<sup>99</sup> These words with initial prothetic *h-* and *x-* may be borrowed from dialects or speech styles that prothesized initial fricatives in all originally vowel-initial words. However, if conditioning environments can be established in which one can expect the presence of an initial *x-* or *h-* in Middle or New Persian, the dialectal borrowing hypothesis becomes less likely. Another possibility is that there actually was one or more laryngeal consonants present in the ancestral dialect which are reflected as Middle Persian *x-* and *h-* but were underspelled in the

<sup>85</sup> Beekes and de Vaan, *Indo-European Linguistics*, 139 and 146–149.

<sup>86</sup> cf. Cheung, *Etymological Dictionary of the Iranian Verb*.

<sup>87</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 18.

<sup>88</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 29.

<sup>89</sup> cf. Korn, "Contributions to a Relative Chronology of Persian.", 85–127.

<sup>90</sup> Lubotsky, "The Indo-Iranian Substratum.", 304.

<sup>91</sup> Lubotsky, "The Indo-Iranian Substratum.", 309.

<sup>92</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 97.

<sup>93</sup> Kent, *Old Persian: Grammar, Texts, Lexicon*.

<sup>94</sup> cf. Korn, "Contributions to a Relative Chronology of Persian.", 85–127.

<sup>95</sup> Steingass, *A Comprehensive Persian English Dictionary*, 218 and 275.

<sup>96</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 74.

<sup>97</sup> Schmitt, *Wörterbuch der Altpersischen Königsinschriften*, 69.

<sup>98</sup> Blevins, "Consonant Epenthesis" 85.

<sup>99</sup> Chacon, "Proto-Tukanian Consonants and Tukanian Family Classification," 311.

native Old Persian script, perhaps because they were quite weakly articulated from a phonetic perspective, or because there was no good approximation for their phonetic quality. It is also possible that the dialect ancestral to Middle Persian retained these sounds while they were lost in Old Persian.<sup>100</sup> While this explanation may be attractive, it should be treated as only speculative until regular sound correspondences between Proto-Iranian initial \*H and Middle Persian initial *h-/x-* can be worked out.

The fact that vocabulary in Middle Persian and New Persian may be borrowed from a variety of different dialects also makes the second hypothesis very difficult to maintain, since there may ultimately be different dialectal sources for Middle Persian doublets such as *xīr*, *īr* ‘thing’<sup>101</sup> from \**Hīya-*. This makes it rather difficult to establish regular sound correspondences with Proto-Iranian word-initial laryngeals, as it is possible that any given Middle Persian word with initial *x-* or *h-* may descend from a dialect that prothetized *h-* in all cases. It is, however, obvious that no regular sound change from \**#V* to \**#hV* exists in Persian, as Middle and New Persian *abr* ‘cloud’, from \**abrāh*,<sup>102</sup> shows, among many others. This can also be shown to not have occurred with rounded vowels, on the basis of forms such as the aforementioned Middle Persian verb *abzēn* or the form *abgriyišn* ‘crying, moaning’,<sup>103</sup> both originally beginning with the vowel-initial Proto-Iranian derivational prefix \**upa-*<sup>104</sup> which never began with a laryngeal. Furthermore, some of the words in **Table 1** and **Table 2** that exhibit initial fricatives belong to lexical domains that suggest they are slightly more unlikely to be borrowed, such as *xām* ‘raw’.

Since the notion that the words with initial fricatives are borrowings from a dialect with regular epenthesis is an ad hoc explanation, and no dialect with universal *h-* epenthesis in word-initial or syllable-initial position is securely attested in Iranian, it must be considered whether or not the hypothesis of initial laryngeal preservation is tenable. As previously shown, not all words beginning with laryngeals show initial consonants in Persian. Besides the previously shown counterexamples, Old Persian *utā* ‘and’, apparently from \**h<sub>2</sub>u-té* is notable, as it seems to be another unambiguous example of initial \**h<sub>2</sub>* surfacing as *∅-* in a back-vowel context, in contrast to many other words that seem to show initial *h-* for \**h<sub>2</sub>* before a back vowel. This discrepancy may be explained by the possibility of a different etymology. Jared Klein reconstructs a Proto-Indo-European \**utá* or \**utéh<sub>2</sub>* ‘and’,<sup>105</sup> though, admittedly, the presence of an original initial laryngeal in this reconstructed word (if it existed) cannot be ruled out.

Furthermore, very few examples of the loss of an original *h-* are known in Persian. There is, however, at least one case. In Sassanian texts, the preposition *az* ‘from’ is well-attested, and derives from an earlier form transcribed ⟨hc⟩,<sup>106</sup> ultimately from Old Persian *hacā* ‘id.’.<sup>107</sup> If Old Persian *utā* ‘and’ was actually \*/huta:/ or something similar, the loss of an initial fricative in Middle Persian would not be impossible, as there do exist some word classes that are commonly weakly stressed, and may be subject to different phonological rules than other words, see, for example, the common cross-linguistic phenomenon of the contraction of auxiliaries. Indeed, such an explanation is the most likely reason for the loss of initial *h-* in the preposition *az*, as, once again, there is no regular sound change deleting initial \**h-* (< \**s*) in the history of Persian, assuming that the New Persian form is not borrowed from some dialect which deleted every initial *h-*. A similar phenomenon is attested in Khotanese, a language also

<sup>100</sup> cf. Korn, "Contributions to a Relative Chronology of Persian.", 85–127.

<sup>101</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 99 and 371.

<sup>102</sup> Novák, "Problem of Archaism and Innovation in the Eastern Iranian Languages," 199.

<sup>103</sup> Durkin-Meisterernst, *Dictionary of Manichaean Middle Persian and Parthian*, 10.

<sup>104</sup> Cheung, *Etymological Dictionary of the Iranian Verb*, 112.

<sup>105</sup> Klein, "Some Indo-European Systems of Conjunction," 1–51.

<sup>106</sup> MacKenzie, *A Concise Pahlavi Dictionary*, 15.

<sup>107</sup> Kent, *Old Persian: Grammar, Texts, Lexicon*, 82.

alleged to preserve evidence of initial laryngeals,<sup>108</sup> where *\*hačā* became *jsa* [dza].<sup>109</sup> If *az* is a borrowing, this would mean that New Persian may have borrowed from dialects which epenthesized initial *h-*, and with dialects which lost it. This would be exceptional from a typological perspective, especially because the few words that show loss of *\*#h-* are found in closed classes, as in the case of Middle Persian (and New Persian) *az*, a preposition. If the lack of an initial *h-* in Middle Persian *ud* can instead be explained by the regular loss of the laryngeal consonant, forms such as *hōšag* ‘ear of corn’ or the aforementioned *(h)ōš* ‘intellect’, ultimately from Proto-Indo-European *\*h<sub>2</sub>ews-* and *\*h<sub>2</sub>us-ih<sub>1</sub>* respectively, are more difficult to explain. Clearly, if a chronology of regular sound changes can be established for all of the forms in **Table 1** and **Table 2**, no universal loss of *\*h<sub>2</sub>* before rounded or back vowels can be posited.

## Conclusion

The evidence presented in this paper shows that there is some evidence for the preservation of consonantal *\*H* in Iranian,<sup>110</sup> and for the different treatment of *\*h<sub>2</sub>* against *\*h<sub>1</sub>* and *\*h<sub>3</sub>*. Indeed, the general lack of forms continuing original initial *\*h<sub>1</sub>* and *\*h<sub>3</sub>* is unexpected assuming random variation, but there are also alternative explanations for the presence of initial *x-* and *h-* in place of Proto-Iranian laryngeals in stages of Persian which are equally possible. This paper has also attempted to illuminate phonetic conditions under which the presence of an initial fricative continuing a laryngeal can most reasonably be expected. It indeed appears as if the most stable environment in which initial fricatives are found in place of original laryngeals appears to be before front vowels, including those from Proto-Iranian *\*ai*. It is possible that in the history of Persian, word-initial laryngeals were preserved until the transition to Middle Persian, and then were preserved into the modern language if they occurred before front vowels /i/, /i:/ and /e:/. Additionally, initial *h-* in place of original laryngeals is common before Middle Persian long /o:/. If the preservation of laryngeals in Persian varieties is to be rejected as more research is conducted, the presence of initial fricatives in such contexts may instead serve as a consistent conditioning factor under which so-called prothetic *h-* was most regularly prothesized, as in forms like Middle Persian *xīšt* ‘sun-dried brick’. The reason for the fronting of some initial fricatives before front vowels and not others is, however, still obscure. While much more work must be done to determine whether or not initial *x-* and *h-* sometimes continue initial consonantal laryngeals, this paper has attempted to serve as a starting point for further research. Hopefully with more analysis, regular systematic sound correspondences will be discovered between the initial consonants in Persian and Proto-Indo-European laryngeals. This would provide more solid evidence for the longer preservation of laryngeals in the Iranian family, which could shed light on which features Iranian and its close relative Indic innovated or preserved from the proto-language, and further provide evidence regarding the original articulation of the Proto-Indo-European laryngeals.

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<sup>108</sup> cf. Kümmel, "The Survival of Laryngeals in Iranian".

<sup>109</sup> Bailey, *Dictionary of Khotan Saka*, 113–114

<sup>110</sup> cf. Kümmel, "Is Ancient Old and Modern New?," 83.

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