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Abstract

This paper presents a detailed etymological analysis of words for 'fox' in Indo-European (IE) languages. We argue that most IE 'fox'-words go back to two distinct PIE stems: *$h_2 l\breve{o}p$-$e\acute{k}$- 'fox' and *ulp-i- 'wildcat, fox'. We provide a revised analysis of the etymology and relationship among the various Indo-Iranian 'fox'-words, and we argue that Baltic preserves remnants of the *ḱ*-suffix found in Greek, Armenian, and Indo-Iranian. Additionally, we describe how *$h_2 l\breve{o}p$-$e\acute{k}$- was borrowed from Indo-Iranian into Uralic and we outline the relationship among the reflexes of this word in various Uralic languages. Finally, we reconstruct the paradigm of *$h_2 l\breve{o}p$-$e\acute{k}$- as a unique type of hysterodynamic stem, which nonetheless has close parallels in PIE. We observe that a similar *ḱ*-suffix is found in PIE adjectives and animal names.

Keywords

Introduction

The Indo-European languages attest several words for 'fox', e.g., Skt. *lopāśá-*, Gr. ἀλώπηξ, Arm. *aɫowēs*, Lith. *lãpė*, Lat. *volpēs*, Alb. *dhelpër*, which are similar enough to have justified hypotheses of a common origin, despite the fact that not all of them show regular sound correspondences. Throughout the history of Indo-European etymological research, these words have either been lumped together under a single etymon (e.g., IEW: 1179) or split into several different roots (Schrijver 1998; De Vaan 2000). The aim of this article is to clarify the inner-Indo-European relationships between these stems, as well as their relationship to similar 'fox'-words in the Uralic languages. After discussing the evidence for PIE *$h_2lŏp$-$eḱ$- 'fox' in Section 1, in Section 2 we examine potential Uralic, North Germanic, and Iberian borrowings from an Indo-Iranian descendant of PIE *$h_2lŏp$-$eḱ$-. In Section 3, we reconstruct PIE *ulp-i- 'wildcat, fox' based on Latin, Lithuanian, Persian, and Albanian evidence. Finally, in Section 4 we discuss the derivational history of PIE *$h_2lŏp$-$eḱ$- 'fox' and attempt to explain the ablaut preserved directly or indirectly in the branches of Indo-European.

1 Evidence for PIE *$h_2lŏp$-$eḱ$- 'fox'

1.1 Greek ἀλώπηξ 'fox'

Gr. ἀλώπηξ, -εκος 'fox' shows an ablauting paradigm that is unique for Greek words with velar suffixes. De Vaan (2000: 287) assumes that the paradigm originally had short *-$eḱ$- throughout, which was lengthened in the nominative by analogy. However, as De Vaan himself mentions, other velar stems in Greek have the same vowel quantity in all case forms, which means that there is no plausible model for such an analogy. If the lengthened suffix in the nominative came about by analogy, one would have expected a long vowel in the oblique cases too, following the model of words like νάρθηξ, -ηκος 'giant fennel' (see also Beekes 2010: 79). Rather, ἀλώπηξ, -εκος reflects an ablauting stem nom. *$h_2lōp$-$ēḱ$-, obl. *$h_2lōp$-$eḱ$-.[1] As for the accent, the columnar root accentuation of ἀλώπηξ can hardly be a result of the limitation rule, as an original accented *h_2 is excluded. Unless the accent changed through some other process, ἀλώπηξ

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[1] According to the "Saussure effect", a laryngeal should have been lost before an *o in the following syllable (Nussbaum 1997). However, the rule has been rejected by Van Beek (2011), and *$h_2lŏp$-$eḱ$- may be taken as an additional counterexample to the "Saussure effect".

may reflect the original accentuation of *$h_2 l\breve{o}p\text{-}e\acute{k}$-, which could be supported by the barytone accentuation in Lith. *lãpė* 'fox' (see 1.4).

Besides ἀλώπηξ, one also finds ἀλώπα in Alcaeus, and later ἀλωπός in Herodian (Beekes 2010: 78), which lack the *ḱ*-suffix. One may speculate that -ηξ was analyzable as a suffix, as in ἴρηξ 'hawk', μύρμηξ 'ant' and πίθηξ 'dwarf; monkey', and could thus be removed in a derivative. This may work for the later instances of ἀλωπός 'fox' (compare similarly μύρμος 'ant' in Lycophron), and for ἀλωπός· ἀλωπεκώδης 'fox-like' attributed to Sophocles by Hesychius.[2] However, the explanation cannot apply to Alcaeus' ἀλώπα; the relevant words have -ᾱξ in Aeolic (e.g., μύρμαξ), Alcaeus' native dialect. This means that ἀλώπηξ, with its etymological η < *$\bar{e}$, would not have been immediately associated with the stems in -ᾱξ by an Aeolic speaker. It appears to be difficult to find an analogical model on the basis of which ἀλώπα could have been formed. At any rate, several suffixless forms also appear in later Greek, cf. MiGr. ἀλωπώ, ἀλουπού and MoGr. αλουπού, αλεπού, ἄλπαρος (Passow 1860: 209) and variants. One could argue that both ἀλώπηξ and ἀλώπα go back to PIE formations; however, it should be stressed that ἀλώπηξ cannot be an innovation within Greek, as its suffix is unique. To cast further light on the PIE situation, we must analyse the evidence from other branches of IE.

1.2 *Armenian* **ałowēs** *'fox'*

Armenian *ałowēs*[3] 'fox' is, from the earliest attestations, a *u*-stem (gen.-dat.-loc.sg. *ałowesow*). This is likely due to analogy after the many other animal names following this declension, e.g., *kov* 'cow', *inj* 'leopard', *haw* 'bird'.

Besides the usual nom.pl. *ałowēskᶜ*, the Zohrab Bible contains two instances of *ałoweskᶜ* (*Neh.* 4:3, *Ezk.* 13:4) with the ⟨e⟩ otherwise found in the oblique cases. The paradigmatic alternation of accented *$\bar{e}$* versus unaccented *e* is unparalleled and problematic. If *$\bar{e}$* is the original quality in accented syllables, it would reflect an older *ei or *oi for which there is no external evidence. At the same time, the outcome of an original long *$\bar{e}$*, as found in Greek ἀλώπηξ, would be an *i that is later lost in unaccented syllables.

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2 The explanation of Sommer (1948: 5⁵; cited in Beekes 2010: 78) that ἀλωπός 'cunning' is haplological for a hypothetical *ἀλωπεκ-ωπός "fox-like", where the intermediate syllable -εκ- was also lost in the process, can be rejected out of hand. It is more likely that the adjective arose from the noun in predicative use, viz., "someone is a fox (ἀλωπός)" >> "someone is cunning".

3 The digrapheme ⟨ow⟩ conventionally represents /u/ but is sometimes ambiguous. In this case, it seems to reflect /əw/ (from /uw/) with a consonant *w* from intervocalic *p. The transliteration *atuēs* is therefore less desirable (see further Schmitt 1972: 304). The classical pronunciation would have been approximately /ałə'wes/, cf. the modern standard /ɑʁ'νɛs/.

Thus, assuming that the Greek ablaut of -ηκ-/-εκ- reflects an inherited pattern, the paradigm at one Proto-Armenian stage would have alternated between nom. *$aluɸis$-(V-)[4] and obl. *$aluɸes$-(V-). At first, it would seem attractive to explain the Arm. oblique *ałowes-* as a direct reflection of this reconstructed oblique stem; however, this would not account for the aberrant nominative *-ēs*. Therefore, it appears more fruitful to start with the opposite development, namely the generalization of the strong ablaut variant, thus nom. *$aluɸis$-V-, obl. *$aluɸis$-V-. After the fixation of the accent and the loss of final syllables, we would expect analogy after the usual distribution of stressed $ē$ vs. unstressed i, thus *ałuwḗs*, *ałuwis-V́-*. After the noun had entered the u-stem class, obl. *$ałuwisu$- would yield *ałowesow-* through dissimilatory lowering of i due to a following u, i.e., the *lezow*-rule (cf. Olsen 1999: 187–88, 802). This scenario would sideline the rare nom.pl. *ałoweskᶜ* as a scribal error. Alternatively, one may consider this exact spelling more faithful to the original pronunciation, whereby a replacement with ⟨ē⟩ happened later, when the two vowels had merged in the spoken language (thus Clackson 1994: 95–96). Such an inconsistent replacement of ⟨e⟩ by ⟨ē⟩ does not seem to have sure parallels, however.[5]

In sum, it is likely that the Armenian paradigm reflects an inherited stem *$h_2lōp$-$ēḱ$-. However, unlike Greek, Armenian does not provide direct evidence for the lengthened grade of the suffix. Regarding the root vocalism, the underlying vowel *u could equally well reflect *ou, *$ōu$, or *u. However, there is no external evidence for *$ōu$ or *u. On *ou, see the following section.

1.3   *Indo-Iranian 'fox'-words*

Various Indo-Iranian words for 'fox' have been treated by De Vaan (2000), who attempts to derive them all from a single PIE stem *ulp-i-. In the following, the evidence will be reviewed, and a different scenario will be presented (see 1.3.5) that assumes two PIE stems and that better accounts for the attested material.

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4   Note that the nominative with final -s cannot directly reflect a consonant stem like the Greek one since the outcome of *-$ḱs$ would be -$cᶜ$. It can thus be assumed that the stem had joined a vocalic class before the simplification of this cluster. Of course, it remains possible that -s was later generalized from the oblique cases.

5   When this replacement occurs there is usually a clear motivation, such as in paradigms where ē, originally reflecting a diphthong [ei], had been reduced to e before vowels and was later reintroduced orthographically, e.g., in the imperfect endings 1/2sg. -ei, -eir, later written -ēi, -ēir based on 3sg. -ēr (Godel 1975: 11). It is far easier to understand the sporadic replacement of ⟨ē⟩ by ⟨e⟩ in *ałoweskᶜ*, since ⟨e⟩ is the more frequent grapheme, certainly in stems, and is found in the oblique cases of this word.

1.3.1   Proto-Indo-Iranian (PII) *(*H*)*raupǎ́ćǎ́*- 'fox, jackal'

Based on Skt. *lopāśá*- 'fox, jackal', Middle Persian (MiP) *rwp'h* 'fox', Modern Persian (MoP) *rōbāh*, Parthian *rwb's* 'fox', Kurdish *rūvī́*, Gūrānī *rūǻs*, Khotanese *rrūvāsa* 'jackal', Ossetic *rubas*, *ruvas* / *robas* 'fox', and Waigali *liwášä* 'fox', PII *(*H*)*raupā́ćǎ́-[6] 'fox, jackal' may be reconstructed (De Vaan 2000). This word closely resembles the Greek and Armenian 'fox'-words discussed above but for the *-u-* in the root.

According to De Vaan (2000: 279), some Iranian forms rather go back to *(*H*)*raupǎ́ćǎ́*- (Sogdian *rwps*, Khwaresmian *rwbs*, Munji *raūso*, and Ormūri *rawas* 'fox') or *(*H*)*raupǎ́ćakā*- (Šughni *rǔpc(ak)*, Yazghulami *rapc* 'fox'; also Balochi *rōpask* 'fox' according to Morgenstierne 1974: 68). However, as De Vaan notes, Sogdian *rwps* is also compatible with medial long *ā* (cf. Gershevitch 1961: 16), as post-tonic medial long vowels are shortened and lost according to the Sogdian 'Rhythmic Law' (Sims-Williams 1984: 204). Although the placement of the accent in Proto-Iranian (PIr.) is not visible, the predecessor of Sogdian *rwps* would in any case have had initial accent, since the initial syllable is heavy. In Ormūri, long *ā* was shortened in unaccented position (Morgenstierne 1929: 323), and so *rawas* could go back to a form with medial long *ā*. In Munji, post-tonic short *ǎ* normally gives *u*, whereas long *ā* in a syllable before final *-ā* gives *o* (Morgenstierne 1938: 91). As intervocalic *-p-* gives Munji *-v-* or *-w-* (Morgenstierne 1938: 42), it cannot be excluded that *raūso* derives from *rawoso* < *(*H*)*raupāćā*- rather than *rawuso* < *(*H*)*raupǎćā*-. Balochi *rōpask* is merely a variant of *rōpāsk* which arose through vowel shortening that affected *ā*, *ī*, and *ū* in some varieties of Balochi (Korn 2003: 186). The remaining languages (Khwarezmian, Šughni, and Yazghulami) may preserve a variant *(*H*)*raupǎćā*- with a short medial vowel (Morgenstierne 1974: 68). Whether these short vowels are remnants of suffixal ablaut will be discussed in 1.3.5.

Recent accounts (Schrijver 1998: 431; De Vaan 2000: 290) have separated PII *(*H*)*raupǎ́ćǎ́*- from Gr. ἀλώπηξ 'fox', Arm. *ałowēs* 'fox' due to the difference in root structure. Instead, the former is seen as being derived within Indo-Iranian from *(*H*)*raupi*- (see 1.3.3). However, while the PII *-u-* is not reflected in Greek or Armenian,[7] the fact that the remaining root consonants are identical and that all words reflect the rare *ḱ*-suffix puts it beyond reasonable doubt that the

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6   For the purposes of this paper, we reconstruct a single PII liquid *r* as the outcome of PIE *r* and *l* (cf. Lubotsky 2018: 1878). For further discussion, see Burrow (1972: 36; 1973: 84) and Schwartz (2008).

7   Although Arm. *ałowēs* is compatible with *$h_2$loup-eḱ-* (cf. 1.2), there is no positive evidence that it reflects such a form. Since Greek, Baltic (cf. 1.4), and Celtic (cf. 1.5) lack *-u-*, it is safest

words are cognate. As noted by De Vaan (2000: 286), this etymon is the most plausible origin for the 'animal suffix' PII *-āća-, which spread to three or four other Iranian (but notably not Indic) words.

The only reliable evidence for the placement of the accent is Skt. *lopāśá-*. Whether this preserves the old oxytone accentuation of the oblique cases of an original athematic stem (cf. Section 4) or is analogical based on the suffix *-śá-* (cf. *yuvaśá-* 'youthful', *babhruśá-*, 'brownish') is unclear.

1.3.2   YAv. *raoža-* 'fox, jackal'

Mayrhofer tentatively connects YAv. *raoža-* 'fox, jackal' to Skt. *lopāśá-* etc., reconstructing *$raub^hća$-* for the Avestan word, thus implying that *raoža-* developed from *$raoβža$-* (KEWA III: 116). This *$raoβža$-* would be very close to *$(H)raupća$-*, a potential zero-grade suffix variant of *$h_2lŏp\text{-}e\acute{k}$-*. A change *$β$ > *u* would not be unparalleled in Young Avestan, cf. YAv. *uuaēm* ~ Ved. *ubháyam* 'on both sides' (Hoffmann & Forssman 1996: 97). However, Mayrhofer does not explain how this *$raub^hća$-* can be connected to *$(H)raupǎ́ćǎ$-* in the first place, given that the voicing of the labial stop does not match. To salvage this semantically attractive etymology one would have to assume that an original Avestan *$raufša$-* (< PIr. *$raufća$-*) became *$rauβža$-* by voicing of *-fš- > -βž-*. However, since this type of voicing is unparalleled, the connection cannot be substantiated.

As an alternative etymology, YAv. *raoža-* (which could regularly reflect PIr. *$rauja$-*) could be derived from PIr. *$rau\breve{j}$-* 'to desire, be greedy' (for the root, cf. Cheung 2007: 318–19). For a semantic parallel, see 2.5.

1.3.3   PII *$(H)raupi$-* 'fox', PIr. *$(H)rupi$-* 'marten'

The reconstruction of PII *$(H)raupi$-* is based on YAv. *raopi-* 'fox' and Khowar (Dardic) *lōw* 'fox'.[8] The meaning of YAv. *raopi-* 'fox' is secured by the Pahlavī translation as well as the Indic cognate (De Vaan 2000: 291).

PIr. *$(H)rupi$-* is reflected in YAv. *urupi-*, which according to a thorough discussion by De Vaan (2000) refers to a dog-like animal with precious fur, most likely a marten, mink, or weasel. Schrijver (1998) proposes that *$(H)rupi$-* is related to Lat. *lupus* 'wolf'. However, the traditional etymology, which explains *lupus* as a borrowing from the Sabellic outcome of PIE *ulk^wo-* 'wolf' (cf. Skt.

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to derive the Armenian 'fox'-word from *$h_2lŏp\text{-}e\acute{k}$-*. See 1.3.5 for an account of the origin of *-u-* in *$(H)raupǎ́ćǎ$-*.

8   Zaza *lü* 'fox' may also belong here, which according to Schwartz (2008) would imply that the PIr. form had *l*; however, see fn. 6.

vŕ̥ka-), is to be preferred over Schrijver's suggestion, since the semantic connection between YAv. *urupi-* 'marten' and Lat. *lupus* 'wolf' is rather weak.

PII **(H)raupi-* 'fox' and **(H)rupi-* 'marten' look like ablaut variants of the same stem and could be etymologically related. According to De Vaan (2000: 289), the words derive from the same source as MiP *gurbag* 'cat' and Lat. *volpēs* 'fox'. However, as this etymology is phonologically irregular (see 3.1), we may rather assume that **(H)r(a)upi-* derives from the root **Hraup-* 'to break, tear, rob' (for a semantic parallel, see 2.5), reflected in, e.g., Ved. *r/lop* 'to break, rob', Khwar. *rwby-* 'to rob', MiP *lwp* /rōb/ 'robbery' (cf. ON *reyfa* 'to break, rob', Lat. *rumpō* 'to burst, break').[9] Note that the same root possibly also gave rise to Skt. *lópā-* 'a kind of bird' (EWAia II: 482; Monier-Williams 1899: 904), cf. Prasun *lūč, lōčo* 'vulture, kite' < **loptr̥* (CDIAL: 649). In this scenario, PII **Hraupi-* 'fox' and **Hrupi-* 'marten' developed as descriptive terms for small, dog-like animals, which were subsequently lexicalized.[10]

1.3.4 Other 'fox'-words

Skt. *lopāka-* (Suśr) 'a kind of jackal' is phonetically and semantically close to Skt. *lopāśá-* 'fox, jackal'.[11] According to De Vaan (2000: 286), since *-śa-* was a productive adjectivizer, Skt. *lopāśá-* 'fox, jackal' would have been analysed as *lopā-śá-* and *-śá-* replaced by *-ka-*. As a model for this development, cf. Skt. *babhruśá-* 'brownish' next to *babhruká-* 'brownish, ichneumon'. Nuristani forms like Ashkun *ẓōkī, žŏkī* 'fox', Kati *ŕwēki* 'fox' reflect **rōpākia-* according to CDIAL: 649.

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9 Cheung (2007: 320) instead connects the Iranian **raup-* 'to rob' to Skt. *yop-* 'to remove', but this is unconvincing considering the initial **r-* and since the same polysemy of 'to break' and 'to rob' is found in Sanskrit and Old Norse. Alternatively, compare the semantically similar Lith. *lùpti* 'flay, tear off, beat, etc.', Polish *łupić* 'plunder, loot'. The Indo-Iranian verb could in principle be a merger of these two roots. Since we remain agnostic as to whether **r* and **l* merged in Proto-Indo-Iranian, the question of which root the verb reflects is not of primary relevance.

10 This process is potentially reflected in Avestan, if *urupi-* is used as a qualifier of 'dog': *spā urupiš* 'a *urupi-*dog' (V 5.33). However, it is equally possible that *spā* is to be interpreted as an apposition to *urupiš*.

11 Skt. *rū́pakā-* (AV) is glossed as 'female fox or jackal' by Monier-Williams (1899: 886), which superficially looks close to Skt. *lopāka-*. However, since the long *ū* precludes a connection to these words, it is preferable to accept the etymology given in EWAia (II: 456), which states that Skt. *rū́paka-* means 'demon' and is unrelated to the 'fox'-words. The translation of *rū́paka-* as 'fox' could be influenced by the context in which the word is attested (AV 11.9.15); it appears in the same clause as *śvànvant-* 'name of a type of Apsaras' (lit. 'having dogs/dog-like'). Also, Monier-Williams compares Skt. *rū́pakā-* to Av. *urupi-*, implying that the translation may be influenced by this etymological association.

Skt. *lomaśá-* 'hairy' >> 'ram, cat, fox' etc., Skt. *lomaṭaka-* 'fox', and West Pahari *lɔmbṛe* 'fox' (< **lompaṭa-*, CDIAL: 649) probably all derive from Skt. *loman-*[12] 'body hair' and are thus unrelated to Skt. *lopāśá-*.

1.3.5 Summary

In sum, PII **(H)raupǎćǎ-* 'fox, jackal' cannot be separated from Gr. ἀλώπηξ and Arm. *aɫowēs* and thus most likely derives from PIE. PII **(H)raupi-* 'fox' and **(H)rupi-* 'marten', on the other hand, are isolated to Indo-Iranian and may be innovations from the root **Hraup-* 'to break, tear, rob'.

It remains to be determined why **(H)raupǎćǎ-* has **-u-* in the root, unlike its IE cognates. Possibly, it could be explained as a contamination of earlier **(H)rāpǎća-* < **h₂lŏp-eḱ-* by PII **(H)raupi-* 'dog-like animal'. As the suffix **-ǎća-* was unique, **(H)rāpǎća-* may have been analysed as containing the suffix **-ća-* '-like' (cf. Skt. *yuvaśá-* 'youthful') by the speakers of Proto-Indo-Iranian. However, as the "base" of **(H)rāpǎća-*, **Hrāpǎ-*, did not exist as a separate word, the root may have remade based on a folk-etymological association with **(H)raupi-*, yielding **(H)raupǎćǎ-*. The idea that the suffix of **(H)rāpǎća-* would have been analysed as **-ća-* '-like' is paralleled by the derivation of Skt. *lopāka-* 'a kind of jackal' << *lopā-śá-* 'fox, jackal' (De Vaan 2000: 286).[13]

Another issue is whether **(H)raupǎćǎ-* was thematicized in Proto-Indo-Iranian or retained the original athematic inflection of PIE (as reflected in Greek). An early thematicization is suggested by the fact that no Indo-Iranian form preserves a consonant stem. Moreover, it would make the introduction of **u* in the root in PII more understandable, as the suffix **-ǎća-* could then be identified as **-ǎ-* + **-ća-* as argued above. However, the fact that a subset of Iranian languages (Khwarezmian, Šughni, and Yazghulami, cf. 1.3.1) seem to reflect **(H)raupǎćā-*[14] might lead one to think that the originally athematic paradigm was preserved until post-PII and even post-PIr. times, after which the individual languages thematicized either a stem **(H)raupāć-* or **(H)raupǎć-*. To evaluate this scenario, it is useful to examine what the regular outcome of the

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12   Skt. *lūma-* '(a hairy) tail' and *r/loman-* 'body hair' probably derive from a root PIE **HreuH-* '(animal) hair' (cf. ON *rǫggr* 'shaggy hair' < **HrouH-o-*, Kroonen 2013: 407). Various derivations meaning 'one with hair' *vel sim.* could have been specialized with the meaning 'fox'. Such a *Bennenungsmotiv* is paralleled by Middle Welsh *llwynog* 'fox', literally, 'the bushy one', a derivative of *llwyn* 'bush; anything bushy'.

13   Kalasha *ḷawák* 'fox' may preserve **lāpāka-* << **lāpā-śá-*, without analogical **u*, but this remains uncertain.

14   Also, YAv. *raoža-* 'fox, jackal', although it is highly doubtful if it belongs here, would reflect PII **(H)raupća-*.

athematic paradigm (see Section 4 for a more detailed account) would have been in Indic and Iranian:

PII		Proto-Indic	Proto-Iranian
*Hrā(u)pāć-s	>	*raupāṭ(-ṣ)	*raupāš (-ćš?)
*Hrā(u)pać-a(m)	>	*raupaś-am	*raupać-am

The attested forms that go back to *(H)raupāć- would then represent the-maticizations of the nominative stem. This requires the assumption that the outcome of *-ćs was still analyzable as *ć + s at the time of thematicization. For Iranian, such an assumption is supported by the fact that Khotanese may preserve a cluster tṣ from *ćs in kṣīra- 'country, kingdom', suggesting that the simplification *ćs > *š is post-Proto-Iranian (Cantera 2017: 495).

Regardless of whether the thematicization was a PII or post-PII develop-ment, we reconstruct a pre-PII *(H)rāpăć- < *h₂lŏp-eḱ-, which corresponds to the Greek and Armenian cognates.

1.4   Proto-Baltic *lapeš- 'fox'?
Within Baltic, Lithuanian and Prussian share an ē-stem, cf. Lith. lãpė, Pr. (Elbing Voc.) lape·vochz. While these forms resemble those found in Greek, Armenian, and Indo-Iranian, they lack any trace of the ḱ-stem. A trace of the ḱ-suffix, how-ever, may well be found in Latv. lapsa 'fox',[15] which could show the zero-grade of the suffix (PIE *h₂lop-ḱ-; cf. Frisk I: 83, IEW: 1179). At first sight, it may seem like rather a bold claim to assume that an ablauting ḱ-stem would have been pre-served all the way into Proto-East-Baltic. Nevertheless, the forms lãpė and lapsa can be compared directly to two East Baltic reflexes of the word for 'daughter':

Lith. dukté̃   Lith. lãpė
Lith. dukrà   Latv. lapsa

The two Lithuanian words for 'daughter' must have split from a hysterodynamic paradigm, which had remained more or less intact in East Baltic, viz., *dukté́(r),

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15   A similar form is also found in the Zinov Vocabulary, viz., łaps·lisa 'fox'. However, leaving the question of the authenticity of this glossary aside, it cannot be decided whether łaps represents *lapsV with apocope (cf. zem 'earth' ~ Lith. žẽmė) or a masculine *lapVs with syncope (cf. gars 'stork' ~ Lith. garnỹs).

acc.sg. *dúkterin, gen.sg. *duk(t)rés. The word duktė̃ is still declined as an r-stem to this day (cf. acc.sg. dùkterį); however, the nominative duktė̃ has also dialectally served as the basis for a regular ē-stem (acc.sg. dùktę, gen.sg. duktė̃s, see LKŽ s.v. duktė). The same development was also found in Lith. obs. mótė 'wife' (acc.sg. mótę beside móterį, ALEW 771), as well as in its cognates Latv. mãte (acc.sg. mãti), Pr. (III Catechism) acc.sg. mūtien 'mother'. If the inherited nominative form was *lápē, the same development could theoretically be assumed for Lith. lãpė. The only problem here is the development *lápēš >> *lápē in the nominative singular, which has no exact parallels; however, a close parallel is the s-stem mė́nuo 'moon' (acc.sg. mė́nesį), where the nominative form probably reflects an older *mė́nōs.[16] Since *s was not regularly dropped after a long vowel (cf. Lith. jū̃s 'you (pl.)' < *iuH-s; gen.sg. f. -õs < *-eh₂-es), the nom.sg. ending *-ō in mė́nuo must be analogical after other paradigms showing apophonic alternations, such as the n-stems (cf. ãkmuo, acc.sg. ãkmenį 'stone'). It is therefore justified to assume that a similar analogical development took place in a nominative form *lápēš (>> *lápē), which might have been encouraged by an association with other feminine animal names, e.g., vìlkė 'she-wolf' (Bammesberger 1970).

Latv. s is admittedly ambiguous, as it may reflect either Proto-East-Baltic *š or *s (< PIE *ḱ or *s). Although this ambiguity can hardly be resolved, it is not an argument per se against the identification of the Latvian suffix with the ḱ-suffix.[17] In fact, a suffix *-sa is not paralleled in animal names, and is otherwise unexplained. One could compare the suffix in Lith. vilpišȳ̃s 'wild cat' (but this suffix is even more obscure, see 3.3.), or assume some kind of corruption after lũsa 'lynx', but this would be ad hoc. Blažek's (1998) attempt to explain the Latvian suffix by starting from a neuter s-stem is semantically unconvincing. Therefore, equating Latv. s with the ḱ-suffix attested elsewhere seems to be the best solution at hand, explaining both the obscure suffixation and allowing us to bring the Baltic forms in line with the other cognates.

A slightly different view of the Latvian form is that it was syncopated from *lapesa, a form more closely resembling that found in Greek (IEW: 1179). Although syncope of suffix syllables is indeed a well-attested phenomenon in

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16   It has alternatively been suggested that the PIE word for 'moon' exhibited an alternation *t ~ *s in the suffix, with nom.sg. *meh₁-n-ōt (> Gothic menoþs 'month') and acc.sg. *meh₁-n-es-m (IEW: 731; Fraenkel LEW: 438–39; Kortlandt 2005: 156). In this case, Lith. mė́nuo could simply reflect inherited *meh₁n-ōt with the regular loss of the final dental. However, the Germanic t-stem may instead be of secondary origin (Lubotsky 2019).

17   On the possible relevance of Lith. vilpišȳ̃s 'wildcat' to this issue, see fn. 34. Although Slavic *lisa 'fox' has often been considered to be cognate with Latv. lapsa (thus ÈSSJa XV: 137–38; Derksen 2008: 279), it is best kept apart as its vocalism is completely irregular.

Latvian (Endzelin 1923: 46–48), the examples generally involve either high vowels (Latv. *àuns* 'ram' ~ Lith. *ãvinas*; Latv. *vȩ̀cs* 'old' ~ Lith. *vẽtušas*), or sequences of identical low vowels (Latv. *ȩ̀rglis* 'eagle' ~ Lith. *erẽlis*; Latv. *pȩ̀lni* 'ashes' ~ Lith. *pelenaĩ*). Since the Latvian syncope is itself an irregular change, and the form **lapesa* falls into neither of these two categories, it seems better to interpret Latv. *lapsa* at face value as a reflection of the zero grade.

In summary, the Baltic words for 'fox' (Lith. *lãpė*, Latv. *lapsa*) could theoretically continue the same *ḱ*-stem attested in Greek, Armenian, and Indo-Iranian. It appears that a zero-grade **h₂lop-ḱ-* best accounts for the Latvian form. The only remaining question is whether the Baltic words could reflect **ulop-* rather than **h₂lop-* and thus be cognate instead with Lat. *volpēs* 'fox'. The *s*-suffix in Latvian favours the identification with **h₂lŏp-eḱ-*, all the more because PIE **ulp-i-* already has a reflex in Baltic (Lith. *vilpišy̌s*). If the Albanian evidence for a full-grade **uolp-* is accepted, it would constitute another argument against connecting Lith. *lãpė* and Latv. *lapsa* with PIE **ulp-i-* (see Section 3.4).

1.5 Celtic **loɸerno-* 'fox'

The relevant Celtic forms are Welsh *llywarn* (pl. *llewyrn*), Middle Cornish *lowarn* (pl. *lowern*), Breton *louarn* (pl. *leern > lern*), Vannetais *luhern*, all meaning 'fox'. The personal names Irish *Loern*, *Loarn* and Gaulish Λουερνιος may additionally be adduced (Schrijver 1998: 421, 428). Schrijver (1998) reconstructs Proto-Celtic (PC) **loɸerno-*, rejecting earlier reconstructions **louerno-* by Jackson (1953: 384; 1967: 282) and **luperno-* by Pedersen (1909: 92).

Schrijver (1998) describes the relationship between Celtic and the other languages as a shared root **h₂lop-* suffixed with an unidentified element **-erno-*. There is, however, little evidence of such a suffix. The suffix may be shared with PC **tigerno-* 'lord' (MIr. *tigern*, W *tëyrn*, OBret. *tiarn*), perhaps containing a zero-grade of PC **teig-o-* 'to go' (Matasović 2009: 378), or from the same root as **tig-u-* 'final' (Vendryes 1940). The suffix **-erno-* may be the result of double suffixation, i.e., an original stem in **-er-* suffixed by **-no-*, but this does not explain the origin of **-er-* in the first place.

Regardless of the origin of the element **-erno-*, the Celtic forms appear morphologically distinct from the other languages in that they do not contain a velar suffix. Schrijver's reconstruction only allows for a root connection to the remaining forms through a shared root **h₂lop-*.[18] A theoretical PIE **h₂lop-ḱ-s* with a zero-grade suffix is unlikely to yield the attested outcome; although a

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18 Regular loss of **k* in athematic stems is impossible in view of PC **esoxs*, gen. **esokos > Gaul. **esox* borrowed as Lat. *esox* 'salmon'.

cluster *-pḱs- is unknown in Celtic, both PIE *-ḱs- and *-ps- regularly yield PC *-xs-, surfacing as W -h- ~ -ch, B -h- ~ -c'h, OIr. s(s).

The segmentation of PC *loɸerno- into *loɸ- (< PIE *h₂lop-) and *-erno- hinges on the correct identification of *-erno- as a suffix or some other unknown lexical element. However, the origin of this suffix is so uncertain that it remains an open question exactly how the Celtic form fits in with the other Indo-European words for 'fox'.[19] If the root connection is correct, then the ḱ-stem inflection found elsewhere (except in Gr. ἀλώπα?) is not shared with Celtic.

2   The origin and spread of an Indo-Iranian *Wanderwort*

2.1   *Proto-Uralic* *repäć(i)

On the basis of Erzya Mordvin *riveś* and Mari *rəwəž* 'fox' (< Proto-Mari *rĭwəž, Aikio 2014: 154), one can reconstruct a (quasi-)Proto-Uralic *repäć(i).[20] The Uralic word is usually derived from Indo-Iranian (e.g., Munkácsi 1901: 521–22; UEW 859). An Indo-Iranian source does indeed appear attractive in view of the close formal and semantic match and the characteristic Indo-Iranian *r for PIE *l.

On the basis of Uralic *e, Holopainen (2019: 202) asserts that the word was borrowed from pre-PII *h₂reupēćo- (cf. Katz 1987: 259), i.e., before the development of PIE *e to PII *a, but after the change *l > *r. However, a reconstruction *h₂reupēćo- is very unlikely, since there is no indication that the root vowel of PII *(H)raupăćă- goes back to an ĕ-grade; rather, the evidence from the other branches clearly points to an ŏ-grade. The Uralic vowel *e is therefore problematic, since it matches neither PIE *ŏ nor PII *au particularly well. Holopainen (2019: 202) assumes that Indo-Iranian *-u̯p- was substituted by Uralic *-p-, since such a cluster may not have been licensed by Uralic phonotactics.[21] If correct, one could assume that PII *a was borrowed as Uralic *e, for which there are several parallels (PU *sejti << PII *sHai̯tu- 'bridge', *rećmä << PII *(H)raćman-

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19   One could assume that Italo-Celtic inherited a form without the ḱ-suffix. As this branch is sometimes held to be the first Indo-European branch after Anatolian and Tocharian to split off from the core Indo-European dialect continuum (Ringe et al. 2002: 87), this would imply that the ḱ-suffix was added in late PIE after Italo-Celtic split off.

20   Whether one reconstructs final *-i is dependent on whether one believes that consonant-final word forms existed in Proto-Uralic, which is an issue we will not deal with here.

21   According to Aikio (forthc.: 14–15), clusters of *w + obstruent do not occur in any reconstructed Proto-Uralic vocabulary, nor clusters of *w + the labial *m.

'rope').[22] It is still difficult to imagine that *w would be lost without a trace, not even having a rounding effect on the neighbouring vowel, but this scenario appears to be the least problematic one.[23] Postulating a borrowing from a later Iranian source (e.g., Oss. *ruvas* / *robas* 'fox') would not help to explain the vocalism.

In Finnic, a form *repoi* is reflected in all of North Finnic (Finnish/Karelian *repo*(*i*), Veps *repoi*). Votic *repo* is probably a loan from Ingrian as *ę̄ should have been preserved as *õ in this language. The standard Estonian form *rebane* and Võro *repäń* 'fox' point to a front-vocalic variant and could be derived from *repäh-inen*, a diminutive of a Proto-Finnic (PFi.) *rep̆äs*. The existence of the latter may be supported by the Estonian toponym *Rebas-mägi* (Evar Saar *apud* Balode 2015: 54), as well as by the element *Reväs-* in Finnish and Karelian toponymy (Kuz'min 2007: 62–64).[24] Admittedly, Veps dial. *rebāńe* 'fox' (Zajceva & Mullonen 1972: 466) would exclude *h, but it may be a recent formation after *repoi* (like *poŕmoi* >> *poŕmāńe* 'weasel').[25] The validity of the Proto-Finnic reconstruction *rep̆äs* is supported by the cognates in Mordvin and Mari, which it perfectly corresponds to. In this case, a suffix substitution must have taken place in North Finnic (Holopainen 2019: 205). A close morphological parallel is provided by Fi. *orpo, orvoi* (< *orpoi*) < PU *orpas*(*i*) 'orphan', and a similar innovation is found in the semantically close Finnish/Karelian *ohto* (< *oktoi*) 'bear' beside the more archaic Võro *otś*, Livonian *okš* 'bear' (< *okci*) (cf. the discussion in Aikio in prep.: 45).

The original PFi. *rep̆äs* (gen.sg. *repähen*) could be regularly derived from PU *repäć*(*i*). This could also be supported by certain Saami forms, viz., North Saami (Jukkasjärvi) *rēbeš, rēhpeh-*, Lule Saami *riebij, riehpih-*, South Saami *riepie* (< Proto-Saami *reapēš*; note the regular sound changes *-š > -j in Lule

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and *-š- > -h- in Lule and neighboring Saami dialects),[26] which were probably borrowed from Proto-Finnic, as well as perhaps North Germanic *rebaʀ (see 2.4). It is true that the vocalism of the Saami words would seem to be consistent with PU *repäć(i); nevertheless, Saami *š is not regular from PU *ć, which supports a Finnic origin. Saami *š is sometimes found as a substitution for Finnic *s. In these cases, we can probably envisage a Karelian intermediary, e.g., North Saami šalbmi 'eye of a needle' (<< Kar. šilmä) << PFi. *silmä 'eye', šaldi 'bridge' (< Kar. šilta) < PFi. *cilta 'bridge'. As final *-s in Karelian proper is typically rendered as -š, the Saami words may have been borrowed from a Karelian noun *reväš, now only preserved in toponyms.

2.2   Proto-Permic *roću̇

In Permic, we find Udmurt ǯ́i̇ć́i̇, dial. ǯuć́i̇, (Besermyan) ďøśø beside Komi ruć 'fox', which point to Proto-Permic *roću̇ (according to Zhivlov's 2014: 122–24 reconstruction of Proto-Permic vocalism). Although the loss of intervocalic *p shows that the word must be at least pre-Proto-Permic, the vocalism of the Permic forms is not consistent with PU *repäć(i) (cf. Holopainen 2019: 205). The regular outcome of *e(-ä) in Permic is Proto-Permic *ȯ, cf. *ȯl- 'to live' (< PU *elä), *ȯrd 'side, rib' (< PU *ertä), *pȯz 'nest' (< PU *pesä). Proto-Permic *o points rather to a Proto-Uralic back vowel, namely *a,[27] *e̮, or *o(-a). In addition, as intervocalic single consonants were regularly voiced in Proto-Permic, *ć here implies a PU geminate *ćć.[28] In Uralic terms, the Permic words would suggest a preform *ropaćć(V) or *re̮/apVćć(V). For this reason, Holopainen (2019: 205) assumes that the Permic words were independent borrowings from Proto-Indo-Iranian. As in the case of *repäć(i), his main argument for assuming a specifically PII source is the palatal *ć, which is an unlikely substitution for a later Iranian *s. However, other seemingly late Iranian loans in Permic also show a palatal reflex, e.g., Komi porś, Udmurt parś 'pig' (<< Ir. *parća-, cf. Av.

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26   The North Saami forms are irregular, but can probably be explained by assimilation to the somewhat productive suffix -eš (cf. beallji 'ear' >> bellj-eš 'one who hears well', eallit 'to live' >> ēl-eš 'resilient person'). Alongside NSá. rēbeˈš́, gen. rēhpehan, Qvigstad (1893: 268) cites rǣbiš, gen rēhpehan, whose second syllable -iš would be regular from *-ēš.

27   Proto-Uralic *a is traditionally considered to yield Proto-Permic *ȯ (Sammallahti 1988: 523; ⟨*u⟩ in his notation); however, Reshetnikov & Zhivlov (2011) have argued that PU *a and *e̮ merged in pre-Permic, yielding *o in a-stems (except before palatal consonants) and *ȯ elsewhere. While indeed a palatal consonant is found in Proto-Permic *roću̇, it was not originally adjacent to the root vowel, and we do not venture to draw any conclusions on this basis.

28   It cannot necessarily be excluded, however, that *ć was word-final in pre-Permic and therefore resisted devoicing.

+*parsa-* 'piglet')[29] and Komi *beriś*, Udmurt *beriź* (< *beriź*) 'linden' (<< Ir. *barʲa-* 'birch', cf. Oss. *bærz / bærzæ*), where the voiced anlaut suggests recent origin. Since there is evidence that PII *ć* remained an affricate in Proto-Iranian (Cantera 2017: 492), it cannot be excluded that these Iranian loans were adopted from a more recent source which preserved an affricate pronunciation of PIr. *ć*.

2.3   Ugric *ra/opać(V)

Like Permic *roću*, Hungarian *ravasz* 'cunning' (in Old Hung. 'fox') cannot regularly reflect PU *repäć(i)*, and rather suggests a form such as *ra/opać(V)*. The final consonant could also probably be *s* in view of *fészek* 'nest' (< PU *pesä*). A pre-Hungarian *ropas* comes very close indeed to the actually attested Oss. *ruvas / robas* 'fox'. We can therefore be rather confident in attributing the Hungarian word to a later source, probably Alanic. The modern Hung. *róka* 'fox' (< *rawka*) is most likely derived with the diminutive suffix *-ka* from a secondarily reduced root *raw-* (perhaps *-asz* became analysed as the suffix also found in e.g., *kopasz* 'bald', which might be supported by the later specialization of *ravasz* as an adjective). Such an explanation is more probable than an independent loan from an Iranian *raupaka-* (Holopainen 2019: 204) which, to our knowledge, is not attested.

2.4   North Germanic *rebaʀ

Old Norse *refr* (Icel. *refur*, Far. *revur*, Nw. *rev*, Da. *ræv*, Sw. *räv*) no doubt belongs to the Indo-Iranian *Wanderwort* cluster as well (Thomsen 1870: 45). The word, which may be mechanically reconstructed as Proto-Germanic *rebaz* (or *refaz*), has previously been derived from an alleged PIE root *ĕreb(h)-* 'dark, brown' (cf. IEW: 334). However, the reconstruction of this root is fraught with formal and semantic problems. Furthermore, the isolation of the formation to North Germanic rather suggests that the word was adopted in Scandinavia after the Proto-Germanic period. An ultimately Iranian origin seems plausible (cf. Kroonen 2013: 158), but the exact source of the reconstructed Proto-Norse *rebaʀ* is unknown. Sarmatian has previously been suggested as the donor language (Brøndal 1928: 10), but in fact the North Germanic form *rebaʀ* is formally closest to the cluster of PU *repäć(i)* discussed above (cf. Mordvin *řiveź*, Mari *rəwəž*, as well as North Saami (Jukkasjärvi) *rēbeš* etc.), and its similarity may be

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29   This Permic word is normally considered cognate with Finnish *porsas* 'piglet' and Erzya Mordvin *purcos* 'piglet'; however, the regular outcome of Uralic *o(-a)* is Permic *o* (> Komi *u*), so the Permic words are better interpreted as independent loans from Iranian (cf. UEW no. 1498; Holopainen 2019: 190–93). In fact, even the relationship between the vowels within Permic is irregular.

even stronger if we assume that the sibilant *-*r* was a substitution for the final sibilant in Uralic. Although the exact moment and location of the borrowing process cannot be pinpointed with certainty, we may assume that this originally Iranian word entered North Germanic through Finnic (De Vries 1962: 436; Bergsland 1963: 153–54; 1965) or Saami (Keresztes 1997: 146). Since the sibilant of PU *repäć(i)* was largely replaced in Finnish and Estonian, borrowing from Saami appears to be the more economic scenario. However, the Saami forms were themselves probably borrowed from Finnic *repäs* (see 2.1), and this could also have been the source of the North Germanic word. As a result, neither possibility can be excluded.

2.5 *Ibero-Romance* raposa, rabosa *'fox'*

While most Romance languages continue Lat. *vulpēs* 'fox', Castilian and Portuguese have an entirely unrelated word: *raposa* 'fox'. It has been proposed that *raposa* may originally be a borrowing from Alanic (Brøndal 1928: 10), the unattested language of the Iranian people who established a short-lived kingdom in the South-Central Iberian Peninsula in the 5th c. AD. However, this solution is problematic in view of the absence of any other 'Alanic' elements in the modern Iberian languages.[30]

Moreover, assuming a foreign origin of the word is unnecessary in light of a plausible inner-Ibero-Romance derivation. The first attestations of Castilian *raposa* occur next to a variant *rabosa*, which is still in use dialectally (Corominas 1987: 492). The latter form can easily be a derivation of Portuguese and Castilian *rabo* 'tail' (< Lat. *rāpum* 'turnip').[31] After the addition of the highly productive adjectivizing suffix *-oso/a*, the form was lexicalized from 'the one with the tail' to more specifically 'fox'. There are good parallels for such a semantic development, cf. Gallurese *codabuffa* 'fox' (< *coda* 'tail' + *buffu/a* 'funny', Rubattu 2006: s.v. *volpe*), Welsh *llostog* 'tailed; an epithet of the fox' (<< *llost* 'tail'), Torwali *pūš* 'fox' (< *pucchin-* 'tailed', CDIAL: 467).

If *rabosa* is indeed the original variant, being derived from *rabo*, then the *-p-* in *raposa* requires an explanation. Corominas (1987: 492) ascribes this to influence from Asturian *rapiega* 'fox' or *rapiña* 'robbery' (cf. Grimm 1834: XXV).

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30   Since Alanic is scarcely attested, it is difficult to evaluate whether it is possible to formally derive *raposa* from that language. Judging from the form of the word in the only surviving modern descendant of Alanic, Oss. *ruvas / robas* 'fox', the vocalism does not match.

31   The meaning 'turnip' in Castilian and Portuguese has been taken over by *nabo* < Lat. *nāpus* 'turnip', leaving *rāpum* to designate 'tail'. While a shift from 'turnip' to 'tail' may seem counter-intuitive, parallels include Castilian *nabo* 'turnip; base of a tail', German *Rübe* 'turnip; fleshy part of a horse's tail' (Corominas 1987: 489).

Although it has been suggested that this *rapiega* was derived from *rabo* 'tail'
as well (Cano González 2009: 194), in which case it, too, would have an unex-
plained *p*, it is in fact more likely that it was directly derived from the verb *rapar*
'to shave, snatch, rob'.[32] That the suffix *-iega* could be added to verbal roots is
possibly demonstrated by parallel formations such as *labriega/o* 'farmhand' <<
labrar 'to work' (Corominas 1987: 350; Rainer 1993: 533).

2.6 *Summary*

It appears that at least three different borrowing events resulted in the various
Uralic 'fox'-words. The earliest is PU **repäć(i)* as attested in the westernmost
branches of Uralic, which probably originates in PII, even if the vowel substi-
tutions are not entirely clear. A later, perhaps Proto-Iranian, borrowing yielded
Permic **roću*. A third borrowing from a presumably Alanic source yielded
Hung. *ravasz* (>> *róka*). The Finnic successor of the originally Indo-Iranian
word PU **repäć(i)* was subsequently borrowed into Saami and North Germanic.

It is not immediately obvious why a word for 'fox' would be so frequently bor-
rowed as seems to have been the case here. We may only speculate that trade
in the fur of the (Arctic) fox may have been a factor in the transmission of the
word. The importance of fox hunting to the ancient Iranians is supported by
finds of fox remains in Scytho-Sarmatian settlements and burial sites (Smirnov
1966: 128 *apud* Abaev IESOJ II: 434).

3 Evidence for PIE **ulp-i-* 'wildcat, fox'

3.1 *Middle Persian* gurbag *'cat'*

MiP *gurbag* 'cat' and MoP *gurba* 'cat' reflect **u̯r̥paka-*, which may be connected
to Lat. *volpēs* 'fox' and Lith. *vilpišȳs* 'wildcat' (see below). All three cognates may
be derived from an original *i*-stem **ulp-i-*. In Iranian, the *i*-stem of **u̯r̥pi-* was
replaced by the highly productive **-aka-* suffix. PIE **ulp-i-* most likely meant
'wildcat', assuming a semantic shift to 'fox' occurred in Latin.

According to De Vaan (2000: 289), PII **raupi-* 'fox' and PIr. **rupi-* 'marten'
(see Section 1.3.3) must also ultimately derive from PIE **ulp-i-*, as he finds a
semantic shift from 'wildcat' >> 'fox' in Latin unlikely. Instead, De Vaan argues
that **rupi-* and **raupi-* derive from **u̯r̥pi-* with metathesis in the initial sylla-
ble. He assumes that PIE **ulp-i-* originally meant 'marten', with a semantic shift

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32   This verb, too, could be considered a possible source of secondary *-p-* in *raposa*. Whether
        it was *rapiega*, *rapar*, or *rapiña* that ultimately influenced *rabosa* cannot be established
        with certainty.

from 'marten' >> 'fox' in Latin and 'marten' >> 'wildcat' in Indo-Iranian and Baltic. While this is conceivable, it is difficult to say with any certainty precisely which animals would have been considered (dis)similar by the speakers. Furthermore, the irregular metathesis assumed for *u̯r̥pi- is a complicating factor. Since *raupi- is PII, the supposed metathesis must have been early. At the same time, MiP *gurbag* preserves the non-metathesized form. In De Vaan's scenario, this implies that original PII *u̯r̥pi- 'marten' split lexically into 'marten' and 'wildcat', of which only the former underwent metathesis. However, this leaves the shared semantics of the Persian and Lithuanian words unexplained.[33]

3.2   *Latin* volpēs

Lat. *volpēs* 'fox' (> *vulpēs*, see Meiser 1998: 84) has often been connected to the family of Gr. ἀλώπηξ (e.g., IEW: 1179). However, the Latin form is not consistent with the reconstruction *h₂lŏp- demanded by this material, but instead reflects a distinct PIE *ulp-i- (cf. Bammesberger 1970). As noted above, the Latin word is cognate with MiP *gurbag* 'cat'. The ending *-ēs* is frequent in original *i*-stems and particularly productive in wild animal names (De Vaan 2000: 288), cf. *fēlēs* 'wildcat', *mēlēs* 'badger', *palumbēs* 'wood-pigeon', *verrēs* 'boar'. Besides the zero-grade, the Latin word could equally well continue the *o*-grade *uolp-i- or *e*-grade *uelp-i-, which would yield Latin *volpēs* through the change *-eł- > *-oł- (Weiss 2020: 150).

3.3   *Lithuanian* vilpišỹs *'wildcat'*

A cognate of the Latin and Persian words is Lith. *vilpišỹs* 'wildcat'. However, the formation is somewhat obscure. A similar suffix is found in only a handful of words, largely of obscure origin: cf. Lith. *takišỹs*, Latv. *tacis*, Pr. *takes* 'fishing weir' (with no plausible cognates), Lith. *lašišà* 'salmon' (a word with a North European distribution matching that of the fish itself), and Lith. *lop(i)šỹs* 'cradle' (obscure, but remarkably similar to PU *lepći* 'cradle'). Besides this, a productive suffix *-išius* is found mainly in an agentive function, e.g., *ėd-išius* 'one who eats a lot' (<< *ėsti* 'to eat, guzzle'), *sald-ìšius* 'someone with a sweet tooth' (<< *saldùs* 'sweet'), *merg-išius* 'womanizer' (<< *mergà* 'girl'). Even though we do find a variant *vilpìšius*, it is difficult to explain the motivation for appending such a suffix to the word for 'wildcat'.[34] It is possible that *vagìšius* 'thief'

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33   Unless, of course, it is assumed that Indo-Iranian and Baltic underwent a shared lexical split and semantic development 'marten' >> 'wildcat'; this is very speculative, however.

34   A possible, although speculative, explanation could be that the inherited *vilpi- gained a suffix *-š- under the influence of the Proto-East-Baltic stem *lap-š- 'fox'. The derivative

could have played a role, considering the various potential semantic parallels for 'fox'-words noted in Sections 1.3 and 2.5. In any case, the unclear suffix does not give us cause to doubt the etymological connection with the Latin word.

3.4   *Albanian* dhelpër / dhelpën *'fox'*

A further potential reflex of PIE **ulp-i-* is Alb. *dhelpër* / *dhelpën* 'fox'. The *n*-suffix is recent as shown by the dial. (North Gheg) variant *dhelpë*. The Albanian word can hardly continue a zero-grade in the root: if PIE **ulkʷo-* 'wolf' gave Alb. *ujk* (dial. *ulk*), one would expect **ulp-i-* to yield a similar outcome (***ylp*, *vel sim.*). If the Albanian word does belong here, then, it must reflect a different ablaut grade. Since PIE **e* regularly gave Alb. *-je-* (e.g., *vjehërr* 'mother-in-law' < **sueḱruh₂-*), the vowel in *dhelpë* is more likely to represent an umlauted *o*-grade (**uolp-i-* > PAlb. **välp(i)-*). This preform could of course be identical to that of Lat. *volpēs*. The only issue is the irregular anlaut *dh-* for expected **v-*. Yet for this an almost exact parallel seems to be found in Calabrian Albanian *dhespër* 'evening' (Mann 1948: 90) << Italian *vespero*. As the substitution *dh-* for *v-* is unparalleled in Romance borrowings, we must be dealing with a dissimilation **v–p* > **ð–p*. Indeed, additional support for such a development can be found in the borrowing of the South Slavic word for 'vampire', Bulg. *vampir*, SCr. *vàmpīr*, as Alb. *dhampir* (see Topalli 2003 for a discussion). A similar dissimilation can therefore be assumed for 'fox' (cf. Stier 1862: 144), which may be supported by a secondary association with *dhelë* 'cunning; caress; flattery' (cf. Demiraj 1997: 156; Orel 1998: 81). Note that as an adjective, *dhelpër* means 'cunning, treacherous', and such polysemy is by no means unusual; compare Gr. ἀλώπηξ 'fox; sly or cunning person'. An association with *dhelë* is in any case assured by the dial. (North Gheg) variant *ledhpë* 'fox', which seems to have been created to *ledhë* 'a caress' on the analogy of *dhelpë ~ dhelë*.

   Given that *dhespër* 'evening' and *dhampir* 'vampire' are both loans, one may wonder whether *dhelpë* could also be a loan. A Latin origin cannot be maintained, as Alb. **s* regularly surfaces as *sh* in Latin loans (Matzinger 2006: 84). Furthermore, Latin already had *-u-* in 'fox' by the start of the Classical period, which could not have yielded Alb. *-e-*. Since Lat. *u* developed again into **ọ* in most Romance dialects (cf. Italian *volpe*), one might be tempted to consider a later Romance source. However, this is chronologically difficult, as later Romance loans were not affected by the Albanian umlaut. A direct substitution

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*vilpiš-ja-, which underlies the attested Lithuanian form, would then have been formed on the basis of this extended root.

of Romance *ǫ with Alb. *e* has been supported by, e.g., Ferguson (1976: 68), but the examples are best interpreted as Latin loans with Lat. *ō* >> pre-Proto-Alb. *ō* (> *ē*); see De Vaan (2017: 1735). In conclusion, the idea that the Albanian word could be a loan cannot be substantiated.

If the Albanian cognate is accepted, it would provide evidence for an ablauting *uolp-i-* / *ulp-i-*. There are several parallels for IE *i*-stems with *o*-grade in the root, cf. *mor-ui-* 'ant' (OIr. *moirb*, ORu. *morovej*), *mon-i-* 'neck' (> ON *men*, MIr. *muin*), *ḱlou-ni-* 'thigh' (> ON *hlaun*, Lith. *šlaunìs*). The ablaut of *uolp-i-* / *ulp-i-* would be comparable to *h₁olḱ-i-* (> ON *elgr* 'elk') / *h₁lḱ-i-* (> Skt. *ŕ̥śya-* 'male antelope').

4   Reconstructing a PIE athematic *ḱ*-stem

As Greek, Armenian, and Indo-Iranian all provide unambiguous evidence for a *ḱ*-suffix, and the same suffix could neatly account for Latv. *lapsa*, we consider it optimal to explain all of these forms from a single Proto-Indo-European *ḱ*-stem. Since these words are so widespread across the branches of IE, yet within each branch so morphologically isolated, they can hardly be seen as independent post-PIE innovations. Besides these forms, there is also marginal evidence for a suffixless form *h₂lŏp-* which could have been the basis of Gr. ἀλώπα 'fox' (in Alcaeus) and Celtic *loɸerno-* 'fox'. A suffixless form could also provide a simpler explanation for Lith. *lãpė*, although as argued in 1.4, the Lithuanian form could have been extracted from the original *ḱ*-stem, which is probably preserved in Latvian. It is therefore theoretically possible to reconstruct a shorter form *h₂lŏp-* beside the *ḱ*-stem *h₂lŏp-eḱ-* for PIE, but it should be stressed that the evidence for the former is relatively isolated, while the most reliable evidence points to a *ḱ*-stem. The remaining question is how the paradigm of *h₂lŏp-eḱ-* should be reconstructed for PIE.

4.1   *The morphology of PIE* *h₂lŏp-eḱ-*
The forms we have analysed show evidence for both root and suffixal ablaut. In the root syllable, Gr. ἀλώπηξ and probably Arm. *aɫowēs* show a lengthened *ō*-grade, while Lith. *lãpė* and Latv. *lapsa* imply a short *o*. In the suffix syllable, the aforementioned Greek and Armenian forms, as well as Indo-Iranian *(H)raupắćă-* and probably Lith. *lãpė*, support the reconstruction of a lengthened *ē*-grade. A short *e*-vowel in the suffix syllable is continued by the Greek oblique stem ἀλώπεκ- and possibly by some Iranian reflexes of *(H)raupắćă-*. Finally, in our opinion, Latv. *lapsa* provides fairly compelling evidence in favour of a zero-grade allomorph *-ḱ-*.

The *ē/e/Ø*-ablaut in the suffix syllable suggests a hysterodynamic (*$ph_2tēr$*-type) paradigm. Such a paradigm is usually associated with a zero-grade in the root, as opposed to the actually attested *ŏ*-grade. There are, however, a number of potential parallels for hysterodynamic consonant stems with *o*-grade roots:

1) **kouH-ei-*: Av. nom.sg. *kauuā*, acc.sg. *kauuaēm*, gen.sg. *kauuōiš* 'a lordly title', Skt. *kaví-* 'seer, poet, wise one', Lydian *kave-* 'priest'

2) **mosgʰ-en-*: RuCS pl. *moždeni*, Lith. pl. *smãgenys* 'brain, marrow', Skt. *majján-* 'marrow' (< **mosgʰ-én-*)[35]

3) **poh₂i-men-*:[36] Gr. ποιμήν, Lith. *piemuõ* 'shepherd' (and derived OE *fǣmne* 'young woman' < **poh₂i-mn-ih₂* 'shepherdess')

4) **pont-eH-*: Skt. *pánthās*, gen. *pathás* 'way, path', Av. *paṇtå*, gen. *paϑō* 'way, path', Lat. *pōns*, gen. *pontis* 'bridge', Gr. πάτος 'path', πόντος 'sea', Arm. *hown* (*i*-stem) 'ford, passage', OCS *pǫtь* 'way', Pr. *pintis* 'path'[37]

5) possibly Germanic ablauting *n*-stems of the type **maþē/ōn*, gen. **muttaz* 'maggot, moth', Gothic *maþa* vs. Old English *moþþe* (Kroonen 2011: 208)

The stems PIE **poh₂i-men-* and **mosgʰ-en-* provide unambiguous evidence for *o*-grade in the root and *e*-grade in the suffix. Although Indo-European **e* and **o* often cannot be distinguished in Indo-Iranian, the short *a* in the suffix of acc.sg. Av. *kauuaēm* suggests an original *e*-grade, as **o* would have been lengthened by Brugmann's Law. Therefore, the suffix of nom.sg. *kauuā* may safely be con-

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35 Another Slavic word often believed to continue this type is RuCS *korę, koren-* 'root'. As the word is generally masculine, the nominative *korę* looks isolated and could be viewed as an archaic relic. Nevertheless, considering that the form *korę* is also used in the acc.sg., it seems to be a neuter synchronically. Alternatively, this form could be viewed as secondary to the masculine in, e.g., OCS *kory* (see the discussion in Olander 2015: 84 with lit.). The confusion of masculine and neuter *n*-stems is understandable, since they are identical in the oblique cases. The same apparently occurred in Ru. dial. *pólomja* 'flame, fire' (< **polmę*, neuter) beside OCS *plamy* 'flame, fire' (< **polmy*, masculine).

36 The unexpected *o*-grade has led certain scholars to reconstruct the root with **h₃* (cf. IEW: 839, s.v. *pō(i)-1*, Mayrhofer 1986: 174–75); however, the *e*-grade reconstructed by these scholars is just as unexpected in a noun of this type. Analogical introduction of the vocalism of **poh₂i-u-*, cf. Gr. πῶυ n. 'herd' (thus Van Beek 2018: 342) suffers from the same problem. Furthermore, it is hardly acceptable to separate the word for 'shepherd' from, e.g., Lat. *pāscō* 'feed, pasture', OCS *pasti* 'feed, herd' which demand **h₂* (LIV s.v. **peh₂(i)-*).

37 Skt. *pánthās* etc. points to an original accentually mobile, ablauting paradigm. Due to the partial merger of **e* and **o* in Indo-Iranian, multiple ablaut types can be envisioned. The paradigm has previously been reconstructed as nom.sg. **pént-ŏH-s*, acc.sg. *pnt-éH-m*, gen.sg. **pnt-H-és* (cf. the discussion in EWAia II: 82). However, we observe that the thematic stems in the non-Indo-Iranian languages all point to an *o/Ø*-alternation in the root, and inferring an *ě*-grade for the suffix on the basis of **poh₂i-men-*, **mosgʰ-en-*, and **kouH-ei-*, we consider the most likely reconstruction to be PIE nom.sg. **pónt-ēH-s*, acc.sg. *pónt-ěH-m*, gen.sg. **pnt-H-és*.

sidered to continue lengthened *$\bar{e}$. As for the root ablaut, the non-palatalized Indo-Iranian *k- and Lydian *a suggest an original *o-grade. Since the word is connected to the root Skt. *kav^i 'to intend' with a final laryngeal that closes the syllable (cf. SCr. *$\check{c}\grave{u}ti$ 'to hear, sense'), lengthening of *o via Brugmann's Law would have been prevented.

The *CoC-eC*-type inferred from the above examples neatly accounts for the *o*-grade of the root and the *$\bar{e}$/e/Ø*-ablaut of the suffix found in the PIE word for 'fox'. Still, it fails to explain the lengthened *$\bar{o}$*-grade in the root as implied by the Greek evidence.

One hypothesis could be that lengthened *$\bar{o}$ in *$h_2l\breve{o}p$-$e\acute{k}$- was analogically introduced from a root noun *$h_2l\bar{o}p$-, where lengthened grade would be expected. The PIE lengthened grade (in athematic nouns) has been argued to have essentially two regular origins: 1) Szemerényi's Law[38] and 2) monosyllabic lengthening[39] (Streitberg 1894; Wackernagel 1896: 66–68). In the case of *$h_2l\bar{o}p$-, the latter would apply. However, the evidence for a monosyllabic root noun is virtually non-existent, since Gr. ἀλώπα 'fox' is of debatable etymological value (and in any case, is not a root noun) and the original stem class of the derivationally unclear Celtic *$lo\phi erno$- 'fox' is obscure. In other words, only the lengthened grade itself could be seen as evidence for a root noun *$h_2l\bar{o}p$-. To use this hypothetical root noun as an explanation for the same lengthened grade would amount to circular reasoning.

A more economical hypothesis is that the original paradigm of *$h_2l\breve{o}p$-$e\acute{k}$- contained a monosyllabic form. We hypothesize the following paradigm:

nom.sg.	*$h_2l\acute{o}p$-$\acute{k}$-s	>	*$h_2l\acute{\bar{o}}p$-$\acute{k}$-s
acc.sg.	*h_2lop-$\acute{e}k$-m		
gen.sg.	*h_2lp-$\acute{k}$-$\acute{e}s$		

This model could provide an explanation for the length alternation in the root implied by the attested material, as an original nominative *h_2lop-$\acute{k}$-s would have been subject to monosyllabic lengthening. Moreover, the scenario is in line with the diachronic model developed by Beekes (1985: 161), according to which the Proto-Indo-European *o*-grade hysterodynamic nouns developed from a paradigm with a monosyllabic nominative singular form. Within this

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38 See Szemerényi (1970). For an alternative explanation of the same phenomenon, see Kortlandt (1975: 85).

39 This accounts for the lengthened grade in Skt. *s*-aorists (cf. also ToB 3sg. *śem* (< *$g^w\bar{e}mt$) beside 3pl. *kamem̥* (< *g^wmont) 'came') and for the length alternations in root nouns such as Lat. *vōx* ~ Gr. ὄψ* 'voice'.

framework, nom.sg. *CoC-C, acc.sg. *CoC-eC-m transitioned into nom.sg. *CoC-$\bar{e}C$, acc.sg. *CoC-eC-m on the basis of the accusative form.[40] The $\bar{e}$-grade of the $\acute{k}$-suffix as reflected in Greek ἀλώπηξ, Armenian *aɫowēs*, Indo-Iranian *(H)rau-pắčă̆-*, and arguably Lithuanian *lãpė* thus replaced an older zero-grade (nom.sg. *$h_2 l\acute{o}p$-$\acute{k}$-s >> *$h_2 l\acute{o}p$-$\bar{e}\acute{k}$-s). The original nominatives of *$kouH$-ei-, *$mosg^h$-en-, *$poh_2 i$-men- (etc.) would have remained unaffected by monosyllabic lengthening because their suffixes were in vocalic position (i.e., *-i, *-$\textsubring{n}$, and *-$m\textsubring{n}$). On the other hand, we note that PIE *$h_2 l\acute{o}p$-$\acute{k}$-s is crucially different from these forms in that it was phonetically monosyllabic and therefore liable to lengthening. The phonetic motivation behind the presence of long *$\bar{o}$ in *$h_2 l\breve{o}p$-$\acute{e}\acute{k}$- versus its absence in other *CoC-eC-stems can thus be found in the consonantal as opposed to vocalic realizations of the corresponding suffixes.

Regarding the subsequent development in the different daughter languages, we observe that Greek and Armenian levelled the lengthened $\bar{o}$-grade of the nominative *$h_2 l\acute{o}p$-$\bar{e}\acute{k}$-s. In Indo-Iranian, the $\acute{k}$-stem was thematicized based on the nominative stem *$h_2 l\acute{o}p$-$\bar{e}\acute{k}$- or perhaps the accusative stem *$h_2 lop$-$\acute{e}\acute{k}$- in part of Iranian. In Baltic, it appears that short *o was levelled throughout the paradigm, but the ablaut in the suffix was retained. While we accept that there may be other ways to account for the data, we consider this the option that best accounts for all the relevant evidence, while also being in line with what we otherwise know about PIE nominal ablaut.

4.2   *The PIE ḱ-suffix*

While a suffix *$\acute{k}$ is not particularly common, there is solid evidence for an adjectival $\acute{k}$-suffix, perhaps originally limited to the positive degree of the word for 'young', cf. OIr. *óac*, W *ieuanc* 'young' (< *$h_2 iuHn$-$\acute{k}o$-, cf. Skt. *yuvaśá-*) beside comp. OIr. *óa*, MW *ieu* (< *$h_2 i\acute{e}uH$-ios-, cf. Skt. *yávīyas-*), and Lat. *iūnior* < *$h_2 iuH$-n-ios-.[41] In PIE, positive forms with and without the suffix may have

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existed side by side in view of Skt. *yúvan-* ~ *yuvaśá-* 'young' and Lat. *iuvenis* 'young man' ~ *iuvencus* 'young bull'. In Sanskrit, this doublet is paralleled by, e.g., *árvan-* ~ *arvaśá-* 'quick' (< *$*h_3er$-un(-$\acute{k}o$)-), *sárva-* ~ *sarvaśa-* 'whole, complete' (< *$sol(h_2)$-uo(-$\acute{k}o$)-). The thematic suffix further appears in several chromonyms, *babhrú-* ~ *babhruśá-* 'brown(ish)' (< *b^he-b^hr-u(-$\acute{k}o$)-), *kr̥ṣṇá-* ~ *kr̥ṣṇaśa-* 'black(ish)' (< *$krsno$(-$\acute{k}o$)-), a usage perhaps echoed by Lith. *pálšas* 'light grey' < *$polH$-$\acute{k}o$-.[42] Although it is clear that the $\acute{k}o$-suffix became productive in Sanskrit, meaning that few of these doublets are likely to be old, the example of 'young' shows that this pattern was present in PIE.

A $\acute{k}$-suffix could furthermore be identified in certain animal names, among which stands most prominently PIE *$h_2rt\acute{k}o$- 'bear' (Hitt. *hartakka-*, Skt. *r̥kṣa-*, Gr. ἄρκτος). Although its derivational base is unclear, this formation is probably best analysed as containing a suffix *-$\acute{k}o$-. An athematic manifestation of this suffix might be found in *$h_1ol\acute{k}$-i- 'stag (?)' (compare ON *elgr*, PSl. *olsь 'elk', Skt. *r̥śya-* 'male antelope', Wakhi *rūš* 'wild mountain sheep'), if this is built to the same root as *h_1el-en- 'deer' (ToB *yal* 'gazelle', Gr. ἐλλός 'fawn', W *elain* 'doe', PSl. *$elen$ь 'deer').[43] We consider it quite conceivable that the suffix of *$h_2l\breve{o}p$-$e\acute{k}$- can be identified with the $\acute{k}$-suffix found in these other animal names. Whether the adjectival $\acute{k}$-suffix is etymologically identical to the above is uncertain, but possible.

5   Conclusion

Unlike early research (e.g., IEW: 1179), we have split the IE words for 'fox' into two families. One, represented by Lat. *volpēs*, can be reconstructed as PIE *ulp-i- 'wildcat, fox' and may have cognates in Lithuanian, Persian, and Albanian. The other, represented by Gr. ἀλώπηξ, can be reconstructed as PIE *$h_2l\breve{o}p$-$e\acute{k}$-. In contrast to some recent accounts (Schrijver 1998; De Vaan 2000) we have reinstated the Indo-Iranian words for 'fox' as members of the ἀλώπηξ family, and have attempted to clarify the fate of the $\acute{k}$-suffix in Baltic and Celtic. We have provided a new perspective on the Uralic borrowings that follows from

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42   It is possible that Lith. *pálšas* 'light grey' is directly related OCS *pelesъ* 'dark grey', R *pelësyj* 'spotted', which could imply an ablauting *$pelh_1$-$e\acute{k}$- beside *$pelh_1$-$\acute{k}$- (in which case the Lith. vocalism could be secondary after *paĩvas* 'grey').

43   Furthermore, *$por\acute{k}o$- 'young pig' (cf. YAv. ⁺*parsa-* 'piglet', MIr. *orc* 'young pig', PSl. *$p\grave{o}rse$ 'piglet') could be analysed as a derivative of the shorter *$p\breve{o}r$- found in Gr. πόρις 'calf', OS *fŏr* 'immature pig'. Also compare the North European word Proto-Germanic *$baruga$- 'barrow' (< *b^hor-u-$\acute{k}o$-?) beside PSl. *$borv$ъ 'hog, livestock' (< *b^hor-uo-).

our discussion of the IE evidence. A remaining problem is that the Uralic vocalism is hard to derive from any possible (pre-Proto-)Indo-Iranian source form. The least problematic option seems to be PII *(*H*)*raupắć*(*ẵ*)-, which when borrowed lost its *u due to Uralic phonotactics. Finally, we have explored the morphology of the ἀλώπηξ family, arguing that it preserves an athematic paradigm that was rare, but not unparalleled, in PIE. Moreover, we have argued that the suffix *-*ḱ*(*o*)-, present in some animal names and adjectives, might be related to the suffix in the ἀλώπηξ family. On the one hand, the Indo-European words for 'fox' have frequently been subject to secondary developments, lexical innovation, and borrowing; on the other hand, they have preserved traces of archaic morphological patterns.

Acknowledgments

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