

ELAMITE *NU-MA-KA*^{*}

1. *Introduction*

One of the major textual source corpuses for the study of the internal administrative organisation of the Achaemenid Empire (c. 550-330 BC) in general and for that of the internal administrative organisation of Persia proper in particular is the so-called Persepolis Fortification Archive (PFA), an archive of several thousands of texts especially recorded in Elamite and Aramaic and dating from 509 to 494 BC (i.e. during the reign of Darius I)¹.

Logically, the importance of this archive cannot be stressed enough. The huge amount of both historical and linguistic information, provided by the text corpus, makes it a real treasure for the modern researcher. Nevertheless, the same researcher must also realize that the same archive also raises new questions and that it sometimes withstands any clear explanation.

One of the main tasks in the analysis of this enormous archive is the linguistic interpretation of proper names and appellatives, either Elamite ones or Old Iranian ones in an “Elamite garb”². It should, however, be mentioned that many of the names and appellatives already have been explained, but nonetheless several of these expressions still defy any convincing analysis. The most general is doubtlessly *kurta-*, which is the Elamite rendering of Old Ir. **grda-* “worker”³. More specific appellatives are **gaiθapati-* “overseer of livestock”⁴, **pistakara-* “miller”⁵, **rāza-* “mason”⁶, etc.

This article will focus on a professional expression that is equally attested in the Persepolis Fortification Archive: Elamite *numaka*.

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¹ A good introduction to this archive can be found in HENKELMAN, *The Other Gods*, p. 65-179.

² GERSHEVITCH, *Iranian Nouns*, p. 165.

³ TAVERNIER, *Iranica*, p. 423-424 no. 4.4.7.54.

⁴ TAVERNIER, *Iranica*, p. 422 no. 4.4.7.47.

⁵ TAVERNIER, *Iranica*, p. 429 no. 4.4.7.89.

⁶ TAVERNIER, *Iranica*, p. 430 no. 4.4.7.98.

2. *Elamite numaka*

2.1. *Historical context*

This not very frequently attested expression occurs eleven times in the Archive, in the following spellings:

- (1) *nu-ma-ka₄-ip*: NN 0502:5, 1356:3-4, 1382:5-6; PF 1842:5-6, 1843:5, 1844:5-6.
- (2) *nu-ma-kaš(-be)*: PF 1224:9, 1946:13, 1947:59,62,72.

The first form being suffixed by the Elamite plural marker *-p* and the second form being suffixed by the not yet fully explained suffix *-š*, the nucleus form may be safely analysed as *numaka-*.

The texts themselves are relatively straightforward. In PF 1842-1843 and NN 0502, Assyrian *numaka*-workers and makers of DIN.TAR (DIN.TAR-*hutti*), who are based at Persepolis, receive rations. Only their number varies: 50 men, 45 male children, 87 women and 42 female children (PF 1842-1843), 4 men, 9 male children, 29 women, 7 female children (NN 0502). Assyrian *numaka*-workers and makers of DIN.TAR are also attested at Nušaya⁷ and Antarrantiš⁸ (PF 1844). In PF 1224, 23 Ionian *postpartum* women, *numaka*-workers, are mentioned.

In Rakka⁹ too various groups of *numaka*-workers are active: 34 men, 8 male children, 29 women, 10 female children (PF 1946:13), all Lycians. An ethnically mixed group of Bactrian and Lycian *numaka*-workers appears in PF 1947:59 (42 men, 27+ male children, x women¹⁰, 21 female children). A group of Bactrian *numaka*-workers (1 male child, 8 women) appears in PF 1947:62.

Finally, there are other places where *numaka*-workers were installed: Midazanaš¹¹ (9 men, 1 male child, 15 women, 2 female children, all Lycian;

⁷ Elamite rendering of Old Ir. **Ni-sāya-* “place of lying down, settlement” (EIW 1012; TAVERNIER, *Iranica*, p. 73 no. 2.3.32).

⁸ Elamite rendering of Old Ir. **Antarantiš* “in breathing” (HINZ, *Altiranisches*, p. 29; TAVERNIER, *Iranica*, p. 373 no. 4.3.8).

⁹ Elamite rendering of Old Persian R-x-a (*Raxā*), a town in Persia proper, whose etymology is unfortunately not known (KENT, *Old Persian*, p. 205; TAVERNIER, *Iranica*, p. 75 no. 2.3.38).

¹⁰ The tablet is damaged here, so that it is impossible to determine the exact number of male children and women. The damaged sections account for 72 persons, as the total number of workers is 162 (HALLOCK, *Persepolis Fortification Tablets*, p. 546).

¹¹ Elamite rendering of Ir. **Vīdacanah-* “providing desire” (HINZ, *Altiranisches*, p. 260; TAVERNIER, *Iranica*, p. 401 no. 4.3.249).

PF 1947:72), Tukraš¹² (2 Lycian men; NN 1356) and Kaštiyaruš¹³ (7 men, 5 women, 2 female children, all Cappadocian; NN 1356), where part of the group is defined as being *hušuttip* (an Elamite plural).

The meaning of *hušutti-* is, just like that of *numaka-*, subject to debate. According to Hallock¹⁴ this is a synonym of *ušu.hutti-* “maker of *ušu*”, *ušu* being a synonym of *hišin*, which Hallock¹⁵ does not translate, but which is certainly connected with livestock (El. *aš*). Hinz and Koch¹⁶ translate *ušu.hutti-* as “hurdle maker”.

Concerning the expression *hušutti-*, however, Hinz and Koch¹⁷ do not believe it to be a synonym of *ušu.hutti-*. Instead they connect the expression with the well-attested lexeme *hušu-*, which Hinz¹⁸ translates by “retributive” in a double sense: “punishing” and “rewarding” (comparing it with Akk. *gimillu turru*, that means both “to return a favour” and “to avenge”). Accordingly *hušutti-* may have a negative meaning “convict”.

In our view, the proposal by Hallock is the most plausible one. The Persepolis Fortification is essentially an economic archive, where the role of law enforcement is non-existing. Only once (PF 1980) reference is made to a law and, despite the fact that some law officers are mentioned in the Fortification Archive, they do not appear because of their job itself.

Numaka-workers were not only active in different places. They also belonged to various ethnic groups: Assyrians, Bactrians, Cappadocians, Ionians and Lycians. They are attested from the 21th year to the 27th year of Darius I (i.e. 501-494 BC.). This implies that the work of *numaka-* is not the specialty of one specific region and that the activity is probably rather generally known.

2.2. Etymology and meaning

Clearly *numaka-* is composed of two elements: *numa-* and *-ka-*. The latter is the well-known Old Iranian suffix, frequently attested in personal

¹² Elamite rendering of Old Ir. **Tigra-* “sharp” (EIW, p. 325; TAVERNIER, *Iranica*, p. 398 no. 4.3.220).

¹³ The toponym *Kashtiyaru-* is not yet explained. Could it have something to do with Sogd. *kšt* “to sow”? In all likelihood it is situated in Persia proper (EIW, p. 419; VALLAT, *Les noms géographiques*, p. 136).

¹⁴ HALLOCK, *Persepolis Fortification Tablets*, p. 697 and 699.

¹⁵ HALLOCK, *Persepolis Fortification Tablets*, p. 26.

¹⁶ EIW, p. 1252.

¹⁷ EIW, p. 704-705.

¹⁸ HINZ, *Altiranische Funde*, p. 22.

names¹⁹ and nouns (e.g. OP *arštika-* “spearman”, *karṇuvaka-* “stonemason”; reconstructed Old Iranian **davaka-* “cleaner”, **didiyaka-* “supervisor”, **frasaka-* “investigator”, **frataraka-* “governor; superior”, **gaušaka-* “spy”, **razaka-* “painter”²⁰), so it suffices to identify the meaning of the first element *numa-*.

2.2.1. Former theories

The expression *numaka-* has already been studied by various scholars. Gershevitch²¹ believes that *numaka-* is the rendering of Old Iranian **nāvaka-* “irrigation worker; person concerned with the making and maintenance of channels”. This analysis is based on modern Persian *nāv-* “canal, aqueduct” (which on its turn is related to the root **nau-* “ship”, cf. Av. *nāuuaiia-* “navigable”).

Hinz²² has two objections against this idea. First of all, the majority of the attested *numaka-* workers are women, so it would be strange to make these women maintain or even dig canals. Secondly, according to Hinz Ir. **nāva-* must be rendered by Elamite *na-ma*, and not by *nu-ma*.

Hinz’s assumption that there are more *numaka-* women than men seems to be right. Unfortunately there are some problems concerning PF 1947:60-61 where part of the text is broken. Hallock has 42 ^{mLÚ}meš 3-na 1 ^{mpu-hu} 2-na 26 ^{mpu-hu} 1½-na (61) [x ^{fMUNUS}meš] ‘2(?)’-na 8 ^{fpu-hu} 1½-na 13 ^{fpu-hu} 1-na.

In an accompanying note Hallock²³ explains that there is room to restore one apportionment. This can either be an apportionment for boys, receiving 1 or ½ *bar* or for women receiving 3 *bar*. In any case, the non-preserved apportionments account for 72 people. This implies that either one has to add 72 boys or 72 women. As the ration texts never mention such large groups of boys and as the women groups are always bigger (up to 190 women in one group) than the boys groups, it is more reasonable to prefer a restoration [x ^{fMUNUS}meš 3-na x ^{fMUNUS}meš] 2-na.

It should also be noted that in some texts the *numaka-* were mentioned together with other professional groups, such as makers of DIN.TAR. In this sense, one cannot know for sure the exact number of *numaka-* and how they were divided over the social categories (man, women, boy, girl). The following table lists the various figures

¹⁹ JUSTI, *Iranisches*, p. 521, 524 and 526; MAYRHOFER, *Onomastica*, p. 286 no. 11.1.7.3.8.

²⁰ KENT, *Old Persian*, p. 51 and SOKOLOV, *Древнеперсидский*, p. 246.

²¹ Apud HALLOCK, *Persepolis Fortification Tablets*, p. 53.

²² HINZ, *Neue Wege*, p. 95.

²³ HALLOCK, *Persepolis Fortification Tablets*, p. 546 n. an. Collation of the text confirms Hallock’s reading.

	All texts		Texts only listing <i>numaka</i> -workers	
Men	158	25.3 %	87	28.4 %
Women	210+ (prob. 282)	45.2 %	77+ (prob. 149)	48.7 %
Boys	97	15.6 %	37	12.1 %
Girls	87	13.9 %	33	10.8 %
Total	624	100 %	306	100 %

The table thus clearly shows the great number of women and girls (56 % if all texts are considered; 62,6 % if the texts only listing *numaka*-workers are considered), which indeed may point to a rather less physical work assignment. This certainly weakens the idea of “irrigation workers”.

Hinz’s second argument *contra* Gershevitch is less valuable. Ir. *nāva* does appear as El. *nu-ma* (with vowel colouring), as is shown by the following example: *Dēnāva- (El. *Tin-nu-ma*)²⁴.

Besides attacking Gershevitch’s proposal, Hinz²⁵ also proposes an alternative solution. He connects *numaka*- with modern Persian *nax* “yarn” and reconstructs an Old Iranian lexeme *naxvaka*- “yarn-spinner”. This indeed fits better with the high number of women and girls in the texts. Nevertheless it is wise to discuss all possibilities since “irrigation worker” and “yarn-spinner” are not the only theoretically possible explanations. In any case, Hinz’s idea was adopted by Tavernier²⁶ who, based on the spelling *nu-ma-ka*₄, reconstructed a form **nōvaka*- < **nauvaka*-.

2.2.2. Etymological study

Theoretically, Elamite *nu-ma* can render many Iranian combinations: *nāhvā*, *nāvā*, *nōvā* and *nūvā*. Next to the two already presented hypotheses, others too may be envisaged. The lexeme could be related to **nāu*-/**nāv*- “ship”, which is attested in Avestan *nāuuaiia*- “navigable” and Old Persian *nāviya*- “deep (so as to require ships)” and in reconstructed Old Iranian **nāupati*- “shipmaster”²⁷ (Aramaic *npt* and *nwpt*) and **nāuuaza*- “sail”, lit. “that which leads the ship”²⁸ (Aramaic *nwz*).

²⁴ TAVERNIER, *Iranica*, p. 174 no. 4.2.533.

²⁵ HINZ, *Neue Wege*, p. 92; IDEM, *Altiranisches*, p. 172.

²⁶ TAVERNIER, *Iranica*, p. 427 no. 4.4.7.78.

²⁷ EILERS, *Iranisches Lehngut*, p. 214; HINZ, *Altiranisches*, p. 174; TAVERNIER, *Iranica*, p. 427 no. 4.4.7.76.

²⁸ SHAKED, *Review of SEGAL*, p. 412; TAVERNIER, *Iranica*, p. 439 no. 4.4.8.14.

In that case the people concerned could be involved in the building of ships. There are, however, two objections against this idea:

- (1) Although the Lycians were known seafarers, this cannot be said of the other people involved, e.g. the Bactrians.
- (2) Shipbuilding is a physically tough job, which is not very suitable for *postpartum* women.

Another possibility is to connect *numaka-* with **nava-* “new”, firmly attested in the Indo-Iranian languages (OInd. *náva-*, Av. *nauua-*, Middle Persian *nōg*, Parthian *nw’g*, Modern Persian *naw*), but this is a rather vague expression. The same objection may be valid if one wants to connect *numaka-* with **nava-* “nine” (OInd. *náva-*, Av. *nauua-*, MP *nō*, Sogd. *nw’*, Khot. *nai-* “nine”, reconstructed Old Iranian **nava-* in **nav-auva-* [Elamite *nu-ma-u-maš*])²⁹, unless one would like to support the improbable idea that ninth-ranked workers are intended.

The last alternative proposal would be to connect *numaka-* with **nauva-*, the standard Old Persian equivalent of East Iranian **naxva-* “first” (attested in Middle Persian *naxust*, Parthian *naxwšt* and New Persian *naxost*)³⁰, in case of which the word would indicate some first-rank workers. The high number of these people, however, speaks against such an analysis.

As already said, the analysis by Hinz is quite plausible, the only objection being that El. *nu-ma-ka₄* cannot render Ir. **naxvaka-*. The phoneme /x/ is always clearly marked by signs containing *k* in the Elamite renderings of Iranian expressions and accordingly Hinz’s form should be written *na-ak-ma-ka₄* in Elamite. This was also the reason for Tavernier to reconstruct a form **nōvaka-*. The precise link with **naxvaka-* remains, however, unspecified.

A solution may be provided by the study of the Old Iranian dialects. As is clear from other names, Proto-Indo-European **s_u* and Proto-Iranian **/hu/* may sometimes appear as /uw/ (written u-v) in standard Old Persian, /huw/ (written h-u-v) in dialectal Old Persian and /hw/ (written *huu-*, Late Av. *-ḥ^vh-*) and /xw/ (written *-x^v-*) in Avestan. Examples are:

- (1) OInd. *sva-* “own”, Av. *huua-* and *x^va-*, OP *(h)uva-* (written u-v).
- (2) OInd. *Sárasvatī-* “Arachosia”, Av. *Harax^vaitī-*, OP *Hara(h)uvaī-*.

²⁹ GERSHEVITCH, apud CAMERON, *New Tablets*, p. 183-184; HINZ, *Neue Wege*, p. 81; IDEM, *Altiranisches*, p. 175; TAVERNIER, *Iranica*, p. 455 no. 4.4.18.6.

³⁰ TAVERNIER, *Iranica*, p. 560.

It is generally acknowledged that the Avestan writing of the land name Arachosia is not an indigenous spelling and that the usual Avestan spelling would be **Haraj^haitī*, or perhaps **Harahuaitī*³¹. Still there is no unanimity as to the origin of Avestan /xw/, as some scholars believe it to be of Arachosian origin³², whereas Skjærvø denies this³³. Most likely, however, the origin must be East Iranian. The following table presents the development of PIE **s_u* in Old Iranian:

PIE	OInd.	Proto-Ir.	Av.	Med.	Old Persian	East Ir.
<i>*s_u</i>	/sw/	<i>*/h_u/</i>	/hw/	/hw/	/(h)uw/, /hw/	/xw/

Note that this development is parallel to the development of Proto-Iranian **/xm/* to Avestan and Median /xm/ on the one hand and to standard Old Persian /m/ and dialect Old Persian /hm/ on the other hand, a widely accepted development³⁴.

Examples of the latter development are:

- (1) PIE **teukmen-*, OInd. *tókman-* “young blade of corn”, Proto-Iranian **tauxma-*, Av. *taoxman-* “seed, offspring, family”, standard Old Persian *taumā-*, dialect Old Persian **tauhmā-*, MP *tōhm*, Parth. *twxm*, NP *tuxm*, Pašto *tōma* “seed”.
- (2) Av. *taxma-*, Med. *taxma-*, OP **ta(h)ma-* “brave, valiant” (e.g. in *Ti-iš-šá-an-tam₅-ma*, the Elamite rendering of **Ciçanta(h)ma-*).

With this in mind, it is fairly possible to derive an Old Persian form **nahvaka-* out of East Iranian **naxvaka-*. Such a form can perfectly be rendered by Elamite *nu-ma-ka₄*. Nevertheless the way how this form should be conceived is not clear yet. Two possibilities come in mind:

- (1) It is the result of the regular Indo-European development (PIE **s_u* > /xw/ or /hw/).
- (2) It is the result of formation by analogy. **Nahvaka-* is not the expected Indo-European development, but the Persians created this word by analogy to the regular development.

³¹ HOFFMANN, *Ved. dhānus*, p. 15 n. 2; IDEM, *Zur altpersischen Schrift*, p. 641; SCHMITT, *Zur Ermittlung von Dialekten*, p. 205.

³² KELLENS, *Avestique*, p. 35; HOFFMANN – FORSSMANN, *Avestische Laut- und Flexionslehre*, p. 107-108.

³³ SKJÆRVØ, *Review of HOFFMANN – NARTEN*, p. 108.

³⁴ MEILLET – BENVENISTE, *Grammaire du vieux-perse*, p. 81; BRANDENSTEIN – MAYRHOFER, *Handbuch des Altpersischen*, p. 40; HINZ, *Neue Wege*, p. 38; MAYRHOFER, *Onomastica*, p. 299.

In order to determine the right hypothesis of these two, it may be useful to have a closer look at New Persian *nax* “yarn” and to establish its reconstructed Proto-Indo-European form. To do this, one has to look for related words in other Indo-European languages. Hitherto no scholar has really studied the origin of the Persian word. Nevertheless, there are cognate lexemes in other languages, which have been discussed more intensively. First of all, there is Greek *βάκος*, a neuter noun³⁵, attested from the 5th century onwards (Pindar, Herodotus)³⁶. It is used to denote a cover for animals, esp. goats and sheep³⁷.

Secondly, medieval Latin has a lexeme *naccum*, *nachum*. The lexeme is only attested in the accusative and ablative sg., so that it cannot be determined whether it was a masculine (*nachus*)³⁸ or a neuter (*nachum*)³⁹. Nevertheless it is more likely that the word was at least originally neuter, as was its Greek counterpart.

The oldest attestation of the Latin word might go back to the fifth century AD (Romulus, *Fabulae Aesopii* 53,1), although it is now believed that this author was a legendary figure⁴⁰. In Latin it designates a fleece or cover for animals, e.g. horses⁴¹. The Latin word survived in other medieval languages, such as medieval English, French, etc.

It is clear that the Latin word has its origin in the Greek one, although Niermeyer and van de Kieft believe its origin is unknown⁴². On its turn the Greek lexeme has been differently analysed by various scholars. Lidén reconstructed a PIE form **nǎk-* for *βάκος* and later he connected Old English *næsc* “soft leather” with the Greek word and reconstructed an Old Germanic form **naska-* and a Proto-Indo-European form **nak-s-**ko*.⁴³ This idea was picked up by various scholars⁴⁴. Frisk also stressed that there were no known non-Greek equivalents to this word, but this idea has proven to be blatantly wrong.

³⁵ A feminine variation *βάκη* is also attested a few times.

³⁶ Interestingly it also occurs in a third century BC inscription found at Magnesia (SIG 560:40).

³⁷ LIDDELL – SCOTT, *A Greek-English Lexicon*, p. 1159; BEEKES, *Etymological Dictionary*, p. 994.

³⁸ Sic NIERMEYER – VAN DE KIEFT, *Mediae Latinitatis Lexicon Minus*, p. 919.

³⁹ Sic the other lexica.

⁴⁰ KIBLER – ZINN, *Medieval France*, p. 331.

⁴¹ *Novum Glossarium Mediae Latinitatis*, s.v.; *Thesaurus Linguae Latinae*, vol. 9/1, s.v.

⁴² NIERMEYER – VAN DE KIEFT, *Mediae Latinitatis Lexicon Minus*, p. 919.

⁴³ LIDÉN, *Studien*, p. 67; LIDÉN, *Altenglische Miscellen*, p. 410-412.

⁴⁴ WALDE, *Vergleichendes Wörterbuch*, vol. 2, p. 316; BOISACQ, *Dictionnaire étymologique*, p. 656; POKORNY, *Indogermanisches etymologisches Wörterbuch*, p. 754; FRISK, *Griechisches Etymologisches Wörterbuch*, p. 287; FURNÉE, *Die wichtigsten konsonantischen Erscheinungen*, p. 294, who explains the inserted /s/ in *næsc* as secondary and mobile; CHANTRAINE, *Dictionnaire étymologique*, p. 733.

Lewy makes a link between Gk. *βάκος*, OInd. *nāka*- “vault of the sky” and Breton *naka*- “to cover, hide, disassemble” and derives these lexemes from a reconstructed Proto-Indo-European root **nāk-* “to cover, hide”⁴⁵.

Most recently, Beekes has devoted some lines to the problem⁴⁶. He opposes to Lidén’s connection with *nāsc* because Old Germanic **naska-* is in fact isolated within Germanic, something which was already mentioned by Chantraine⁴⁷. He rather considers this form to be of pre-Greek origin.

Beekes could very well be right and in my view the word may very well have a Persian or Anatolian origin. New Persian *nax* is not attested in other Iranian languages, but its occurrence as loan word *no* in the Chinese literature from the Sui Annals (completed in 636 AD) onwards makes sure it was also a Middle Iranian word⁴⁸.

All this means that we may construct a new group of words denoting yarn or a cover for animals (perhaps made of yarn): MP **nax*, NP *nax*, Gk. *βάκος* (with variant *βάκη*) and Latin *naccum*, *nachum*.

2.2.3. Lexical development

The next question is: what is the Proto-Indo-European form from which all these lexemes emanate and what was its development in the various languages? In the following section, some hypotheses will be presented and discussed, in order to present some plausible answers to these questions.

2.2.3.1. Without intermediary form between the PIE and the Iranian form

a) PIE **nasuo-* > Iranian *nax* and Greek *βάκος*

As the development of the PIE cluster **s_u* would yield different results in Iranian and Greek, it seems impossible to reconstruct a Proto-Indo-European form **nasuo-* common to Iranian and Greek. Whereas in Iranian PIE **s_u* developed to /hw/ or /xw/, it originally became **z_u* in Greek, which developed to **hw*. The latter cluster then knew two possible developments: in East Aeolic it became **ww*, which finally ended up as *u*, whereas in the other Greek dialects (Dorian, Ionic, and Attic) it assimilated with the preceding vowel, which in return was lengthened⁴⁹. A good

⁴⁵ Lewy, apud POKORNY, *Indogermanisches etymologisches Wörterbuch*, p. 754; also MAYRHOFER, *Kurzgefaßtes etymologisches Wörterbuch*, vol. 2, p. 149. In his more recent etymological dictionary (MAYRHOFER, *Etymologisches Wörterbuch des Altindiarischen*, vol. 2, p. 33) Mayrhofer has abandoned this connection.

⁴⁶ BEEKES, *Etymological Dictionary*, p. 994.

⁴⁷ CHANTRAINE, *Dictionnaire étymologique*, p. 733.

⁴⁸ LAUFER, *Sino-Iranica*, p. 495-496.

⁴⁹ LEJEUNE, *Traité*, p. 155; IDEM, *Phonétique historique*, p. 135-136; RIX, *Historische Grammatik*, p. 80.

example is Proto-Greek **nasuos/vασφός* “temple”, which became *ναῶς* in East Aeolic. The other development can be seen in its equivalents *νᾶός* (Doric), *νηός* (Ionic) and *νεώς* (Attic).

b) PIE **nakwo-* > Iranian *nax* and Greek *νάκος*

Another possibility is to reconstruct a PIE form **nakwo-*, which would also yield an Iranian form *naxva-* (in Proto-Iranian the stops *p*, *t* and *k* became *f*, *θ* and *x* before */w/*)⁵⁰. In Greek, the situation is a bit more complex. In Mycenaean the PIE cluster **kū* was retained, but in alphabetic Greek it has already become *ππ*⁵¹, as can be seen in PIE **(h₁)ek̑wo-* “horse”, Myc. *i-qa* (= */ik^wo/*), Gk. *ἵππος*. Again one sees two different developments here and therefore this idea has to be given up. Note, however, the variant *ἴκκος* which is three times attested as personal name (*Ἰκκος*)⁵² and also occurs as substantive in the *Etymologicum Magnum* (474,12), where, nevertheless, the form is under debate and should according to Gaisford⁵³ be emended to *ἴννος*.

At this point, it has become obvious that the Iranian and the Greek forms cannot be directly united within one PIE root. Still the semantic similarity of both forms is too striking, as a consequence of which a common historical form must be looked for. Therefore, it may be acceptable to assume that either forms or just one of them is secondary. Two possibilities come in mind: either the Iranian form was borrowed directly by the Greeks or an Anatolian form also played its role.

c) PIE **nasuo-* / **nakwo-* > Iranian **naxwa-* (which was then borrowed by the Greeks)

One is inclined to accept now that the Greek word *νάκος* is a loanword from Iranian **naxva-* through an intermediate form **nakwa-*. The disappearance or assimilation⁵⁴ of the labial element */w/* is frequently attested in Greek, as is demonstrated by the following examples:

(1) Gk. *λάκκος* “pond, cistern, reservoir”: this lexeme probably developed from PIE **lokwo-* (zero grade **!kwo-*), which became **λακφος* in Proto-Greek. This labial element may also be seen in Latin *lacus*

⁵⁰ MAYRHOFER, *Vorgeschichte*, p. 8.

⁵¹ LEJEUNE, *Traité*, p. 72; IDEM, *Phonétique historique*, p. 83.

⁵² Once in the Argolid (492 BC) and two times in Magna Graecia (Tarentum [5th century BC] and Rubi [4th century BC]). Cf. FRASER – MATTHEWS, *A Lexicon of Greek Personal Names*, p. 218).

⁵³ GAISFORD, *Etymologicon*, comm. apud 474,12.

⁵⁴ According to SCHWYZER, *Griechische Grammatik*, p. 227, the gemination of *kappa* is due to the assimilation of the digamma.

“lake”, Old Irish *loch* “lake”, Old Saxon *lagu-* “lake, pond” and Old Church Slavonic *loky* “lake”⁵⁵.

- (2) Gk. *ὄκκον* “eye”: this gloss, only once attested in the Lexicon of Hesychius, derives certainly from a root **ok^u-*⁵⁶, but is an irregular form, since the normal derivative would be **ὄππον*.
- (3) Gk. *πέλεκυς* “(battle) axe, hatchet”: two derivatives of this expression, *πέλεκκον* “axe handle” and *πελεκάω* “to cut with an axe” are generally considered to be developments from **πελεκF-* and this is confirmed by Mycenaean *pe-re-ku-wa-na-ka*, if this is really a forbear of *πέλεκυς*⁵⁷. The gemination of κ may be pre-Greek⁵⁸.

This disappearance of the labial element indicates that the borrowing must have taken place rather late, i.e. in the first half of the 1st millennium BC, which is indeed perfectly possible. The lexeme, attested in the Achaemenid administrative language, may have been picked up by Greeks in Anatolia, who may have transformed Ir. **naxwa-* into **nakwa-* (cf. infra).

Two problems remain, however, problematic for this assumption:

- (1) In general, the Greek *kappa* appears in a geminated way. Only the verb *πελεκάω* has a single *kappa*. This problem may be solved, however, if one assumes that the loanword was only introduced after the *kappa* geminated.
- (2) How could an Iranian sound /x/ develop to /k/ in Greek? Usually the Greeks rendered the Iranian sequence /xw/ or /x^w/ as χ, such as in Βατάναχος for **Bātanaxva-*⁵⁹. Also Ir. /x/ appears normally as χ. Nevertheless, there is one exception: *Φαρνακίας* for **Farnaxva-*⁶⁰.

2.2.3.2. A possible Anatolian interplay

As various cultural items as well as linguistic forms were transmitted from the East to Greece through Anatolia, it is not implausible to think that Iranian **naxva-* < PIE **nas^uo-* or **nak^uo-* may have had an Anatolian equivalent, which was as such borrowed by the Greeks. Having this in mind, there are two ways in which the evolution of the root discussed here may be reconstructed:

⁵⁵ CHANTRAINE, *Dictionnaire étymologique*, p. 615; BEEKES, *Etymological Dictionary*, p. 827.

⁵⁶ LEJEUNE, *Phonétique historique*, p. 83 n. 1.

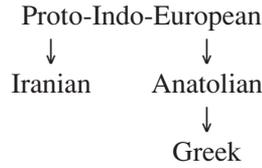
⁵⁷ CHANTRAINE, *Dictionnaire étymologique*, p. 875; BEEKES, *Etymological Dictionary*, p. 1166-1167. Cf. Old Indian *paraśu-* and Ossetic *færæt*. The PIE form is **peleku-*.

⁵⁸ FURNÉE, *Die wichtigsten konsonantischen Erscheinungen*, p. 150 n. 38.

⁵⁹ SCHMITT, *Iranische Namen*, p. 160-161 no. 120.

⁶⁰ SCHMITT, *Iranische Namen*, p. 390 no. 360.

- (1) The PIE form developed directly into an Iranian and an Anatolian form, the latter of which was borrowed by the Greeks.



- (2) The Iranian form was picked up by the Anatolian languages (during the Achaemenid period). Later on, the Greeks borrowed this Anatolian form.



If one wants to discuss the first possibility, one immediately encounters the problem that the Anatolian outcome of the PIE form is not attested. As a result of this, one has to reconstruct it. In addition, the development of PIE **ku*⁶¹ is hardly known in Anatolian, making things even more complex. Nevertheless, this development is probably comparable to the development of the labiovelar stop **k^w*, a stop which became most likely */k^w/* in Proto-Anatolian⁶² and which subsequently developed to */k^w/* in Hittite⁶³, to */k^w/*⁶⁴ or */k/* in Luwian⁶⁵, to */k^w/*, */kw/* or */k/*⁶⁶ in Lydian⁶⁷ and to */t/* in Lycian and */k/* in Milyan⁶⁸.

⁶¹ PIE **nasuo-* cannot be taken into account with regard to the Anatolian form, as this PIE form would have developed differently in the Anatolian languages. The only possible PIE form is thus **nakuo-*.

⁶² WATKINS, *Hittite*, p. 557; GÉRARD, *Phonétique*, p. 63.

⁶³ MELCHERT, *Anatolian Historical Phonology*, p. 95; WATKINS, *Hittite*, p. 557-558.

⁶⁴ Despite Melchert's doubts, Luwian most likely possessed the labiovelar stop */k^w/*, as shown by e.g. the relative pronoun *ku-i*, related to Hitt. *k^wis* (cf. KLOEKHORST, *Etymological Dictionary*, p. 489).

⁶⁵ MELCHERT, *Anatolian Historical Phonology*, p. 229; IDEM, *Luwian*, p. 579.

⁶⁶ Delabialization is found in four situations: before */o/*, before */u/*, before consonants and in final position after apocopes. This means that **nakuo-* would have stayed *nakwa-* in Lydian.

⁶⁷ MELCHERT, *Anatolian Historical Phonology*, p. 332-333; GÉRARD, *Phonétique*, p. 67.

⁶⁸ MELCHERT, *Anatolian Historical Phonology*, p. 303.

This would result in the following reconstructed developments of PIE **nakwo-*: Hittite **nak^wa-*, Luwian **nak^wa-*, Lycian **nata-*, Milyan **naka-* and Lydian **nak^wa-* or **nakwa-*. Two possibilities now come in mind:

- (1) The Greeks adopted the Anatolian form **nakwa-*, which became *νάκος*. In that case the only possible intermediary language would be Lydian.
- (2) The Greeks adopted the Anatolian form **naka-*, which became *νάκος*. In that case the only possible intermediary language would be Milyan. This solution remains acceptable, the more if one takes into account that Milyan was spoken in the Xanthos region, where intense contacts existed between Greeks and Anatolians.

Nevertheless, the second scheme should also be considered. Perhaps the Iranian expression was transmitted by the Achaemenid administration to Anatolia, where it was picked up by native speakers. The form transmitted was most likely **naxva-*.

As Lycian probably⁶⁹ and Lydian certainly did not have /x/ in their phoneme inventory, the Anatolian outcome of Iranian *naxva-* must have been **nakwa-* or **nak^wa-*, which in Greek became *νάκφος*. The Greeks, following their own phonological rules, later on transformed this word to *νάκος*.

It is even not impossible that the Anatolians borrowed the more recent form **naxa-* (assuming, based on Elamite, Babylonian and Aramaic renderings of Iranian names, that the Iranian development /x^w/ > /x/⁷⁰ already started in the Achaemenid period). The Anatolian outcome of such a form must have been **naka-*, again because of the lack of a velar fricative /x/ in Lycian and Lydian. Quite logically, the Greek form then would have been *νάκος*.

2.2.3.3. Back to the Proto-Indo-European form

At this stage, it has become plausible that in the first millennium BC the Iranian form was directly or indirectly (through the Anatolians) adopted by the Greeks or that the Anatolian form was adopted by the Greeks. This implies that the Greek form is merely a secondary development. As a consequence of this, the PIE form may have been **naswo-* as well as **nakwo-*.

⁶⁹ Carruba (*La Scrittura licia*, p. 850) and van den Hout (*Lycian consonantal orthography*, p. 133-134 and 137-138) defend the existence of /x/ in Lycian. According to Carruba, the Lycian grapheme x renders both /k/ and /x/. According to van den Hout, however, the Lycian grapheme κ could render both /k/ and /x/, whereas the grapheme x was a rendering of /k/ and /g/ (after nasals). Eichner (*Probleme von Vers*, p. 45) believes that the grapheme β denotes a rare labiovelar /k^w/.

⁷⁰ Cf. WEBER, *Zur Problematik*, p. 111.

2.2.3.4. A Mycenaean equivalent?

For the sake of completeness it is also necessary to discuss briefly the Mycenaean Greek form *ko-wo*, which seems to have two readings⁷¹:

- (1) In the form *korwos* it means “boy; son” and can be connected to Greek *κόροζ/κοῦροζ*⁷².
- (2) In the form *kōwos* it is just once attested (PY Un 718:4), meaning “sheepskin; fleece” and connected to Gk. *κῶας*⁷³.

In all likelihood this word, in its second meaning, has no relation whatsoever with the lexeme under discussion in this article, although their meaning is similar. The etymology is unknown⁷⁴ and the lack of the initial *n* is troublesome.

2.2.3.5. The Elamite equivalent

As **naxva-* is an Iranian word attested in the Elamite language, a genuine Elamite equivalent must also have existed. Possibly this word is *bahu* (*ba-ah-ú^{mes}*), which is seven times attested in the Susa Acropole Texts (ca. 580 BC)⁷⁵. Remarkably it is always followed by the sign MEŠ, which is normally used to indicate that the preceding word is a logogram⁷⁶.

3. Conclusion

The first conclusion that can be drawn with regard to the Elamite form *nu-ma-ka₄* is that it is the rendering of an Old Persian form **nahvaka-* “yarn-spinner”, whose Eastern Iranian counterpart **naxvaka-* developed to Middle and New Persian *nax* “yarn”. Non-Iranian equivalents are Greek *νάκος* and Latin *nachum*. The history of this word family remains, however, obscure. Three possible hypotheses have been discussed:

- (1) PIE **nakwo-* developed to Iranian **naxva-* and to Anatolian **nak^wa-* (Hittite, Luwian, Lydian) or **naka-* (Milyan). The Iranian form

⁷¹ DUHOUX, *Mycenaean Anthology*, p. 367; RUIGH, *Mycenaean and Homeric Language*, p. 270.

⁷² CHADWICK – BAUMGARTNER, *The Mycenaean Greek Vocabulary*, p. 212; CHANTRAINE, *Dictionnaire étymologique*, p. 562; BEEKES, *Etymological Dictionary*, p. 752.

⁷³ CHADWICK – BAUMGARTNER, *The Mycenaean Greek Vocabulary*, p. 215; CHANTRAINE, *Dictionnaire étymologique*, p. 604; BEEKES, *Etymological Dictionary*, p. 811.

⁷⁴ CHANTRAINE, *Dictionnaire étymologique*, p. 604; BEEKES, *Etymological Dictionary*, p. 812.

⁷⁵ EI^W 121.

⁷⁶ See STOLPER, *Elamite*, p. 66-67 and TAVERNIER, *Elamite*, p. 320.

became **nahva-* in Old Persian by analogy and *nax* in Middle and New Persian, whereas the Anatolian form was borrowed by the Greeks.

- (2) PIE **nakuo-* or **nasuo-* became **naxva-* in Iranian. This form was picked up in Anatolia during the Achaemenid period by speakers of an Anatolian language, who transmitted it to the Greeks living in Anatolia.
- (3) PIE **nakuo-* or **nasuo-* became **naxva-* in Iranian. A more recent form **naxa-* was picked up in Anatolia during the Achaemenid period by speakers of an Anatolian language, who transmitted it to the Greeks living in Anatolia.

No matter what the correct answer is, the Greek form is certainly secondary.

The meaning of *numaka-* may thus be safely identified as “yarn-spinner”, a profession which is also iconographically attested at Susa (Appendix, Fig. 1).

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Abstract — This article concentrates on the Irano-Elamite expression *numaka-*, which denotes a profession in the Achaemenid Persepolis Fortification Archive. Next to a description of older theories concerning this appellative, a new and thorough study is conducted, following which some possible solutions as to the etymology of this word are presented. Moreover, some historical thoughts on the importance of this lexeme are also presented.

APPENDIX



Fig. 1. “La fileuse” (Louvre Museum SB 2834), dated to the 8-7th century BC⁷⁷.
 Credit: Marie-Lan Nguyen / Wikimedia Commons
 (Public Domain; http://en.wikipedia.org/wiki/File:Relief_spinner_Louvre_Sb2834.jpg).

⁷⁷ MUSCARELLA, *La fileuse*, p. 200.