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**ИССЛЕДОВАНИЯ ПО
ЛИНГВИСТИКЕ И СЕМИОТИКЕ**

СБОРНИК СТАТЕЙ

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SEMITIC WORD FOR ‘IRON’ AS ANATOLIAN LOANWORD

The earliest attestations of Akkadian *parzillu*- ‘iron’ are found in Old Assyrian sources (gen. *pár-zi-lim* and acc. *pár-zi-lam*, CAD. P: 212b. Cf.: [Dercksen 1992: 798b])¹. This word is also attested in all the subsequent dialects of Akkadian, where it can be written both Sumerographically (AN.BAR) and phonetically (e. g. Neo-Babylonian *pa-ar-zi-il-lum*, CAD, P: 213b). Moreover, Akkadian has been recognized as the source of the words for ‘iron’ in the other Semitic languages, such as, Ugaritic *brdl*, Hebrew and Phoenician *brzl*, Aramaic *przl*, Epigraphic South Arabian *frzn*, and Classical Arabic *firzil* ([Artzi 1969: 268—269], cf.: [del Olmo Lete, Sanmartín 2003: 236])². Artzi (loc. cit.) remarks with regard to the further background of this word: «it could be called safely, for present, only “Anatolian”, being not only non-Semitic but also non-Hittite». Vyacheslav Ivanov, the honorand of this volume, and his co-author Tamaz Gamkrelidze attempted to make a further step toward elucidating the origin of these lexemes in their monumental work *Indo-European Languages and Indo-Europeans*. They tentatively adduced a number of external comparanda, the most promising of which is Svan *berež* ‘iron’ [Иванов, Гамкрелидзе 1984: 710, fn. 1]. The goal of the present paper is to suggest the immediate Anatolian source for Akk. *parzillu* and its Semitic relatives.

The phonological structure of Akk. *parzillu*- inhibits the derivation of this noun from a Semitic triconsonantal template, but prompts its comparison with the Old Assyrian forms from Kültepe, *padal(l)u*- ‘fetter’, *išpa(n)dal(l)u* ‘lodging (?)’, and *išhiul(l)u*- ‘contract (?)’, which were borrowed from the Anatolian languages as a result of the large-scale Assyrian trade in Asia Minor in the so-called *kārum* or Colony period in the twentieth through the eighteenth centuries BC (cf. [Dercksen 2007: 36—37]). The Indo-European languages of ancient Anatolia had a number of lateral suffixes featuring both *l*- and *-ll*-, but it is possible that the variant with the geminate was generalized in Old As-

¹ Subject to the usual disclaimers. We are grateful to G. Barjamovic (Copenhagen), Ch. Woods (Chicago) and A. Yener (Chicago), who took pains to read the drafts of this paper and supplied us with important references, as well as to A. Butts (Chicago), who improved the style of its final version. We would also like to thank Y. Shapir and J. Wagner, who initially brought to our attention the problem of the origin of Akk. *parzillu*-. The abbreviations used in this paper are those of the Chicago Hittite Dictionary (CHD).

² See [Limet 1984] for the attestations of Akk. *parzillu*- in the Old Babylonian texts and for the frequent occurrence of the pseudo-Sumerogram BAR.ZIL ‘iron’ in documents from Mari (we accept the transliteration of the last item adopted in the CAD). It is noteworthy that many of the iron objects mentioned in the Mari texts appear to have been imported from the Levant.

syrian loanwords³. If so, one can explain Akk. *parzillu* from the hypothetical **parzil(i)-*, an adjectival derivative of the nominal stem **parza-*. The derivatives of this kind occur in both Hittite and Luvian, although Melchert [2003a: 16, fn. 10] maintains that the Hittite suffix *-ili-* is ultimately borrowed from Luvian *-il(i)-*.

The credibility of our hypothesis obviously depends on our ability to find other traces of *parza-* in Anatolian. CHD (P: 202b) lists without translation two Luvian words that may help clarify the issue, namely (:) *parzassa*, and *parzagulliya*. We shall argue that they are derived from the reconstructed Luvian stem *parza-* 'iron ore'.

The Luvian form *parzassa*, formerly taken to mean 'quiver', is not assigned any meaning in the Chicago Hittite Dictionary. We believe that it can be morphologically analyzed either as nom./acc. pl. of the possessive adjective *parzassa/i-* or as the rare genitive in *-assa* < **-os-so* formed directly from the nominal stem *parza-* (cf.: HEG H: 513—514)⁴. Two out of the three attestations of *parzassa* occur in lists of artifacts, some of which are made of metal. The relevant examples are:

- (1) KUB 13.35 iii 46-47, CTH 293, Werner 1967: 12

GIŠTUKUL GIŠBAN GIKAK.TAG.GA :*pár-za-aš-ša* UNUT ZABAR / URUDU PĀŠU
GAL URUDU HAŠŠINNU GÍR¹ GAL ZABAR

'Mace(s), bow(s), arrow(s) (which are) of *parza-*, utensils of bronze, large hatchet(s), ax(es), sword(s) of bronze'.

- (2) KBo 48.262 ii 22-23, CTH 242, Otten 1989: 366

2 GÚ PÍRIG.TUR GUŠKIN NA⁴ZA.GÌN NA⁴*musnuwan[tas]*⁵ / *pár-za-aš-ša*

'Two leopard protomes of gold, lapis lazuli, *musnuwant*-stone and *parza-*'.

The first text represents a court deposition, where the interrogated individuals claim that they did not embezzle the items cited from the royal warehouses. The Glossenkeil form *parza-ssa* appears to modify either GIKAK.TAG.GA 'arrows' or, less likely, the triad of asyndetically coordinated Sumerograms 'maces, bows, arrows'. GIKAK.TAG.GA *parzassa* 'arrows made of *parza-*' would represent a good match to the next object

³ The last assumption is necessarily speculative, since Old Assyrian cuneiform did not normally distinguish between plain and geminate consonants, while *parzillu-* is the only Akkadian word belonging to this group that survived the end of the Old Assyrian period. Note, however, that at least Akk. *padallu-* is demonstrably derived from an Anatolian noun containing the geminate *-ll-* [Derksen 2007: 37].

⁴ For the reconstruction of the *assa*-genitives in the Luvian dialect of Hattusa, see [Yakubovich 2008].

⁵ [CHD, P: 202b] attempts a different reconstruction NA⁴*musnuwan[tit]* and arrives at the translation 'Two gold leopard protomes *p*-ed (with) lapis lazuli and [with] *musnuwa[nt]*-stone'. The form *parzassa*, however, cannot represent a participle in either Hittite or Luvian, while the implied syntactic distinction between the juxtaposed Sumerograms GUŠKIN and NA⁴ZA.GÌN is strictly *ad hoc*.

in the list, *UNUT ZABAR* ‘bronze utensils’. One has however to observe that although the Hittite texts mention a number of sharp-ended objects made of iron (AN.BAR-*as*^{GIŠ} GAG ‘iron peg’, EME.GÍR AN.BAR ‘iron dagger blade(s)’, ^{GIŠ}SUKUR AN.BAR ‘iron spear(s)’ and ^{GIŠ}*māri*- AN.BAR ‘iron javelin’), cf. HW₂, H: 209-12), they never refer to iron arrowheads⁶. Therefore, it remains likely that *parzassa* denotes a kind of material that was different from the ordinary iron.

It is the second example that provides us with real corroborating evidence leading to the interpretation of **parza-*. This description of composite statuettes can be compared with KBo 20 103 ii 2 + KBo 21 87ii 10 [*HASŠ*]ŠINNU GAL GUŠKIN^{NA4} ZA.GÌN^{NA4} TI AN.BAR GE₆ ‘large axe of gold, lapis lazuli, «life-stone» and «black iron»’ and KUB 42.78 ii 13 1-*EN AŠ.ME*^{NA4} ZA.GÌN AN.BAR GE₆ GUŠKIN GAR.RA ‘one sundisk inlaid with lapis lazuli, «black iron», and gold’. One can see from these examples that both **parza-* and «black iron» could be used in combination with gold and lapis lazuli for manufacturing luxury items. Furthermore, the collocation GUŠKIN AN.BAR GE₆ ‘gold (and) «black iron»’ occurs in KBo 48.262 only five lines before (2). This opens a tantalizing possibility that AN.BAR GE₆ is the regular Sumerographic spelling of **parza-*. Independent evidence is required to confirm this theory, but we hope to have demonstrated that contexts (1) and (2) support the interpretation of *parzassa* as a possessive form derived from the name of a metal or a mineral.

The third occurrence of *parzassa* is, unfortunately, less conducive to elucidating the meaning of this form. The fragmentary passage cited below is taken from a poorly understood letter addressed to a king by his subordinate official. The immediate context contains the author’s complaints about difficult circumstances in which he has recently found himself. The Glossenkeil marking *dāyalla* suggests that the scribe of KUB 40.1 perceived this otherwise unknown adjective endowed with a Luvian suffix as a foreign word. The use of *parzassa* alongside *dāyalla* reinforces the impression that both words had a Luvian origin.

- (3) KUB 40.1 rev.¹ 16, CTH 203, [Hagenbuchner 1989: 69]

pár-za-aš-ša[a x ku²]-e-qa :dāyalla mehurri^{III.A} artari

‘Whatever² *parzassa* [...] *dāyalla* times have come’ (lit. «...are standing»).

It is not clear whether the lacuna in the middle of the passage contains a noun functioning as the syntactic head of *parzassa* or rather both *parzassa* and *dāyalla* modify the same head-noun *mehurri^{III.A}* ‘times’. In the first case, the phrase *dāyalla mehurri* can function either as the second subject, which is asyndetically coordinated with *parzassa* *X*, or as the accusative modifier of time (‘in the *dāyalla* times’). In the second case, one probably has to assume that the expression **parzassa... mehurri* ‘times of *parza-*’

⁶ This gap is unlikely to be accidental. Arrows are expendable commodities, and therefore arrowheads were unlikely to be manufactured of iron while it was still relatively expensive. The appearance of iron arrowheads in eighth century Assyria is normally taken as a telltale sign of the advent of the Iron Age.

had a negative metaphoric meaning. The interpretation of this phrase as «Iron Times» would chime with the later condemnation of the «Iron Age» in Hesiod's *Works and Days*, but we have no support from the Hittite metaphoric expressions involving iron (AN.BAR), where it invariably has positive connotations (cf.: [Kořak 1986: 131—132])⁷. The putative equation between *parza-* and AN.BAR GE₆ is more promising considering that black is cross-culturally regarded as an inauspicious color, but further speculations would be risky. At the present time, one should not go beyond saying that (3) does not either support or contradict the suggested interpretation of *parzassa*.

Another formation that helps to isolate the Luvian stem *parza-* is the compound *parzagulliya-*. Since it is listed together with gold earrings (and possibly other jewelry in the broken part of the inventory), it probably represents yet another luxury item. The second part of this exocentric compound can be compared with Akk. *qullu-* 'loop' (CAD, Q: 298^a), while the possessive suffix *-iya* probably functioned as its syntactic head. If so, the likely literal meaning of the whole compound was «having loops (made) of *parza-*»⁸.

- (4) KUB 12.1 iii 2-3, CTH 504.1, Siegelová 1986: 442
 30 HUB.HI.A ŠA LÚ GUŠKIN x[...] / 1-NUTUM *pár-za-gul-li-ia* [...] §
 'Thirty earrings of gold for men [...], one set of *p*. [...]'.

We have seen that three of the four examples featuring the Luvian morpheme *parza-* support is etymological connection with Akk. *parzillu-*, while the fourth one does not contradict it⁹. If the substantivized adjective **parzili-* «related to *parza-*» could be applied to iron, then the base noun *parza-* was more likely to refer not to iron per se, but to its natural source, such as black magnetite (Fe₃O₄) or black hematite (Fe₂O₃). The black color of these minerals would contrast with the color of gold and lapis lazuli in the composite statue mentioned in (2). It is important for our analysis that Maxwell-Hyslop [1980: 87—88] put forward a very similar identification for the Sumerogram AN.BAR GE₆ «black iron» and stressed the same contrast between black magnetite, blue stone,

⁷ Cf., however, the following metaphoric use of *parzillu* in Boghazköy Akkadian: İnandik rev. 19-20 *awat Tabarna* LUGAL.GAL ša AN.BAR 'The words of Tabarna the Great King are of iron, (they cannot be altered)'. One can speculate that the expression 'hard times' could function as a negative metaphor in Hittite, as it does in English.

⁸ Alternatively, one can venture a comparison with *kūla-* 'link in a chain; pendant', which occurs in several lists of metal objects, including our inventory CTH 504.1 (HED, K: 236). The Luvian participle *kulaimi-* 'provided with pendants' coexisted with its Hittite equivalent *kulant-*, and this indicates that the noun *kūla-* was common to Luvian and New Hittite. This noun is probably derived from Luv. *kuwali-/ku(wa)lai-* 'to turn' [Starke 1990: 236, fn. 807], which suggests that its basic meaning must have been *'ring' (cf. typologically Russ. кольцо 'ring' derived from the same Indo-European root). Unfortunately, the geminate *-ll-* remains unexplained under this approach.

⁹ The fact that the Luvian form was adapted as *parzillu-* /*pardzillu*/ and not ***parsillu-* /*partsillu*/ in Old Assyrian suggests that the Luvian phoneme /ts/ (transliterated as *z*) had a voiced allophone /dz/ in a position after the sonorants.

and gold in the case of the sundisk described in KUB 42.78¹⁰. In addition, she did not fail to notice that the majority of artifacts made of «black iron» are ornaments and jewelry ([Maxwell-Hyslop 1980: 87—88], cf.: [Kořak 1986: 132—133]). By contrast, regular iron was predominantly used for various tools and weapons and occasionally for larger objects, such as a wash basin (KBo 18.181 rev. 31) or a throne (KBo 3.22 rev. 74). This reinforces the impression that AN.BAR GE₆ was a mineral used because of its color rather than a metal valued for its durability.

Unlike the Sumerogram AN.BAR ‘iron’, which is known to correspond to Hattic and Hittite *habalki-* in Anatolian texts, the related Sumerogram AN.BAR GE₆ «black iron» has no established phonetic reading in any language of Anatolia¹¹. The traditional theory that identifies AN.BAR and AN.BAR GE₆ with respectively smelted iron and meteoric iron [Siegelová 1984: 159] has been shown by Kořak [Ibid: 125—26] to be philologically not probative¹². It is, however, likely that the external appearance of iron meteorites, which are normally oxydized in the atmosphere and acquire black crust, led to the secondary association between AN.BAR GE₆ and meteoric iron on the part of those scribes who were less familiar with metallurgy. Hence one encounters the passage KBo 4.1 i 39 (w. dupl. KBo 9.33 obv. 15) AN.BAR GE₆ *nebisas nebisaz uder* ‘They brought «black iron» of the sky from the sky’ alternating with the parallel passage KBo 2.2 i 48 AN.BAR *nebisaz uder* ‘they brought iron from the sky’.

Thus we wind up with a triangle of evidence linking black magnetite or hematite to its Sumerographic designation AN.BAR GE₆ and the Luvian noun *parza-*. The link between the Luvian word and the Sumerogram finds support in the interchanging use of the two materials in the description of multicolor composite artifacts. The etymological connection between Luv. *parza-* and Akk. *parzillu* suggests that *parza-* was a kind of iron ore, and this etymological interpretation is compatible with the contextual meaning of *parza-*. The internal structure of AN.BAR GE₆ suggests that this is a black substance containing iron, while

¹⁰ R. Maxwell-Hyslop acknowledges the role of R. Tylecote in the formulation of her hypothesis. She identified AN.BAR GE₆ with magnetite and did not consider black hematite as a possible alternative. We are grateful to A. Yener who turned our attention to the extensive use of hematite in Bronze Age Anatolia. Moorey [1994: 84] remarks that hematite was by far the most common stone for fine cylinder seals in Mesopotamia, Syria, and Asia Minor in the first four centuries of the second millennium BC and tentatively connects its proliferation with Old Assyrian trade.

¹¹ Melchert [1983: 139—41] suggests the identification of AN.BAR with Hitt. **kiklu-* ‘iron’ on the basis of the correspondence between Hitt. *kiklubassari-* and Akk. *unqi parzulli* ‘iron ring’. As an additional comparandum, he adduces Luv. *kiklibaimenzi* ‘plated with iron (pl.)’ (cf.: [Melchert 1993: 103]). Differently Puhvel [HED, K: 174—75], who reads *kiklibaimenzi* and tentatively connects Hitt. **kikliba-*, **kikluba-* ‘iron, steel’ with Gk. *χάλυβος* ‘steel’.

¹² We can add to Kořak’s criticism that there is no substantial difference in color between artifacts made of meteoric iron vs. smelted iron. Therefore, it appears very unlikely that the term «black iron» could be used with reference to objects fashioned from meteorites. Such a designation would be as peculiar as the term «brown ice» applied to ice-cream on the grounds that ice-cream bars are frequently covered with chocolate.

the contexts where this Sumerogram occurs speak for rather than against such a meaning. It may be impossible to arrive at present at the exact mineralogical identification of *parza-*, but its association with the sphere of iron production appears to be vindicated¹³.

The appropriate historical context for the borrowing of Luv. **parzil(i)-* is the invention of iron smelting, the technology that was already firmly in place in the Hittite period and possibly goes back to the early second millennium BC in Anatolia [Иванов 1983: 40—41; Muhly et al. 1985: 1977; Yalçın 1999: 184; Waldbaum 1999: 31]. Scholars frequently assume that the Mesopotamians had been only familiar with meteoric iron before the beginning of the Anatolian trade, while Moorey [1994: 279] proposes as an alternative that iron in early Mesopotamia may have been an accidental by-product of copper smelting. Be it as it may, Old Assyrian merchants treated iron as a rare and precious commodity, whose value surpassed that of gold and silver [Yalçın 1999: 182]. The earliest Sumerian word for iron was (KÙ.)AN or ^(KÙ)AN [Vaiman 1982], while its Old Assyrian equivalent was *amūtu-* and perhaps *aši'u-* (cf.: [CAD, A: 442a])¹⁴. We suggest that the growing awareness of Assyrian merchants about the differences in the technology of iron production in Anatolia vs. their homeland led them to borrow a Luvian word for the kind of iron that was conscientiously smelted from the ore, which was itself derived from the name of the respective ore. Presumably, the spread of smelted iron to Mesopotamia and the Levant resulted in the proliferation of this loanword to the areas where no contact with the Luvians can be surmised¹⁵. The terms *amūtu-* and *aši'u-* fell out of use in Mesopotamia after the end of the Old Assyrian period, and even the Sumerogram KÙ.AN was replaced with the innovative AN.BAR [Maxwell-Hyslop 1972: 162]¹⁶.

¹³ Puhvel (HED, L: 117—18) tentatively suggests the meaning 'iron ore, hematite' for Hitt. *lulluri-*, which CHD (L: 83—84) agnostically translates as '(a mineral)'. Even if Puhvel's guess proves to be correct, the Hittites were likely to have had several words for iron ores, reflecting their different colors. Nothing indicates that Hitt. *lulluri-* was a black mineral.

¹⁴ Differently Maxwell-Hyslop [1972], who suggests that Akk. *amūtu-* and *aši'u-* represent terms for 'bloom-iron' and 'iron ore' respectively in the Old Assyrian usage, thus implying that both words had already been specifically connected with the technology of iron smelting.

¹⁵ One of the early occurrences of AN.BAR is found in an Akkadian text from the 18th century BC found in Tell Aḩana (Bronze Age Alalakh). The relevant text mentions 400 spearheads (or similar weapons) made of iron [AT 410, Wiseman 1953: 107]. In our opinion, it is very unlikely that the precious meteoric iron or the accidental by-product of copper smelting could be used for the mass production of weapons, and therefore it seems reasonable to assume that iron smelting (or smelted iron) had already made its way to northern Syria by that time.

¹⁶ Dercksen [1992: 798b, fn. 3] makes a plausible suggestion that the graphic AN.BAR was originally a way of rendering **parzil* (vel sim.) borrowed into Sumerian, where AN was the old word for 'metal, iron', while BAR functioned as a phonetic indicator hinting at the pronunciation of the initial part of this lexeme. This interpretation finds a degree of support in the spelling AN.BAR-*zi-lu-ú* (or ^{AN}*pār-zi-lu-ú* ?) in the Tigonani Letter of Hattusili I and in the pseudo-Sumerogram BAR.ZIL attested in the Mari texts (CAD, P: 212). For a similar acrophony in the graphic rendering of Sumerian words compare the use of the sign MU with the determinative LÚ 'man' for Sum. **muḩaldim* 'cook'.

The importance of Anatolia in the matters of iron production can be independently confirmed through the destiny of *habalki-*, the main word for ‘iron’ in Hattic and Hittite. This word, which is usually thought to be Hattic in origin, spread not only to Hittite, but also to Hurrian. One can make this claim because the peripheral Akkadian form *habalkinnu-* ‘iron’ is attested in an Amarna letter coming from Mitanni and shows the addition of the Hurrian nasal suffix (cf.: [CAD, H: 3])¹⁷. One can hypothesize that the Mitanni Hurrians borrowed the term for ‘iron’ from the Hittite language, which acquired social dominance in central Anatolia beginning with the conquests of Anitta in the eighteenth century BC¹⁸.

The Luvian origin of Akk. *parzillu-* strengthens the suspicion that Luvian was as important of a source of lexical borrowings in Old Assyrian as was Hittite (cf.: [Dercksen 2007: 31]). The Luvian origin of OAss. *targumannu-* ‘interpreter’ and *ubadinu-* ‘land-grant’ is commonly accepted, while in the case of some other forms, such as vessel names *kullitannu-* and *hiniššannu-*, it can be plausibly surmised¹⁹. The majority of the extant Old Assyrian tablets emanate from Kaneš (Kültepe), a city whose population was predominantly Hittite, as the analysis of the local personal names appears to indicate [Garelli 1963: 148—149]. This is the reason why scholars are frequently willing to emphasize the Hittites as the primary partners of the Assyrian merchants in Anatolia in the *kārum* period. Yet we know that the network of Assyrian trade spread all over the central part of Asia Minor, and so the words for the local realia could be borrowed from Luvian, which was also widely spoken in this region in the Colony period, as argued in [Yakubovich 2010: 208—223].

¹⁷ There is a possibility that Hattic/Hittite *habalki-* ‘iron’ and Luvian *parza-* ‘id.’ are etymologically related. Schuster [2002: 194] remarked with regard to the relationship between the Hattic and the Hittite forms: «Dass für die Entlehnungen das H[attische] der gebende Teil war, wird befürwortet durch die Möglichkeit, daraufhin *ha-* als Präfixelement abzutrennen und **palki-* as Wortstamm zu bestimmen». Schuster never justified this segmentation in his published works, but see [Soysal 2004: 217] (and cf. already [Иванов 1983: 42]) for the existence of the locative prefix *ha-* in Hattic. Thus *habalki-* could originally mean *‘one that is in *balki-*’. If one assumes that **balki-* ‘iron ore (vel sim.)’ was borrowed into Luvian in a very early period, it could develop into **parza/i-* through well-attested phonological processes. See: [Melchert 1994: 234] for the development **k’/ > /ts/*, [Melchert 2003b: 180] for the *r ~ l* alternation, and [Ibid.: 188] for the development of *i*-stems into mutation-stems in Luvian. Compare also the variation between ^{URU}*Hawalkina* and ^{URU}*Hawarkina* in the name of a northern Anatolian town derived from the Hattic word for ‘iron’ [Иванов 1983: 43].

¹⁸ Note, however, that the old term for ‘iron’, *amūtu-* is also attested in Mitanni Akkadian, although it completely fell out of use in Mesopotamia in the Late Bronze Age. For difficulties involved in tracing differences in meaning between various designations of ‘iron’ in Mitanni Akkadian, see: [Güterbock 1943: 150].

¹⁹ For Hitt./Luv. *kulli(t)-* ‘(a vessel)’ see HED, K: 239. Hitt. ^{DUG}*hanissa-* ‘(a vessel)’ should be connected with Luv. **hanī-* ‘to draw (liquids)’, from which it was derived with the help of a rare thematic suffix *-(i)ssa-*. Other Luvian nouns that may have been formed with the same suffix are Luv. *luwarissa-* ‘a topographic feature’, *masharissa-* ‘?’, and *parissā-* ‘relief’.

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