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Prehistoric loanwords in Armenian: Hurro-Urartian, Kartvelian, and the unclassified substrate
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The Hurrian language was widespread across the northern part of
the Fertile Crescent for at least a millennium during the Bronze Age.
Its attestation begins in the early second millennium BCE with a
number of inscriptions from the royal city of Urkeš, in the Taurus
foothills, where the Hurrians ruled over several city states. More
evidence, especially in the form of place names, is found in Akka-
dian sources as early as ca. 2300 BCE. Even earlier, albeit more
controversial, testimony of Hurrian presence comes from the Old
Sum. *tabira*, *tibira* 'coppersmith', which was probably borrowed
from Hu. *tabiri* (PTC) 'who has cast (metal)' (Wilhelm 1988: 50–
2). In the mid second millennium, the Mitanni kingdom wielded
power over most of the Hurrian-speaking area. The Mitanni elite
were Indo-Aryan newcomers to the area, but they retained the local
Hurrian language for writing. The Amarna tablets of the mid four-
teenth century BCE, written correspondences between the Hurrians
and the Egyptians, stands out as the most important monolingual
Hurrian texts. Moreover, a large number of Hurrian texts in the
Hittite libraries provide important linguistic material and testify to
the widespread influence of this language. With the Bronze Age
collapse around 1200 BCE, the Hittite empire dissolves, and the
Assyrian empire expands into the former Mitanni territories. As a
consequence of these events, Hurrian disappears in writing, and its

speakers are largely assimilated into the later state formations. Due to the wealth of multilingual texts in Hurrian, Sumerian, Akkadian, Hittite, and Ugaritic, the Hurrian grammar and lexicon is relatively well understood, but because it employs the foreign Akkadian cuneiform in most of its texts, many aspects of phonology remain uncertain (see Diakonoff 1971: 24–58, Giorgieri 2000: 180–92).

A few centuries after the decline of Hurrian, the cognate Urartian language begins to appear. The Urartian Kingdom (or Kingdom of Van) was situated in the northern highlands around Lake Van in Eastern Anatolia. Urartian inscriptions, mostly commemorating and celebrating the Urartian kings, are dated from around 820 BCE to around 700 BCE. The Urartian corpus is small compared to the Hurrian one, but the close relationship of these two languages is still evident. Urartian is not a direct descendant of Hurrian, however. In many respects, it is in fact more conservative and seems to be most closely related to the Old Hurrian dialect. This entails that it must have split from Hurrian by the end of the third millennium BCE at the latest (Wegner 2000: 29 fn. 33, Wilhelm 2008: 105). It thus seems possible to think of Urartian speakers as a last outpost of a Hurro-Urartian 'people', who managed to preserve their language after the collapse of the Mitanni state.

In terms of time and space, Urartu is the immediate ancestor of Achaemenid Armenia. In the Behistun inscription of King Darius I (522–486 BCE), Akk. *Uraštu* translates OP *Armina*. It is thus clear why the Urartians and the Urartian language has been the subject of immense interest among scholars engaged with the prehistory of the Armenian people, ever since the first decipherment and translation of the Urartian inscriptions by Sayce (1882). The topic of Urartian–Armenian language contact is especially pertinent because there is no evidence to suggest a large population replacement following the collapse of the Urartian state. For that reason, it seems likely that Armenian speakers were to some extent already present in the Armenian Highlands during the existence of Urartu. It has been suggested that Urartian itself was merely a language of the elite (Zimansky 2001), and we may thus envision that a precursor to the Armenian language was spoken by a significant part of the population, perhaps among other languages. Studies in the archaeology (Avetisyan et al. 2019) and ancient DNA (Lazaridis et al. 2022a) of the area now corroborate the assumption that the

Urartian elite was an administrative overlay upon a multicultural and multiethnic population.

Petrosyan (2018: 95–102) takes a different position, arguing that the ruling elite spoke not Urartian, but Armenian. He supports this claim by furnishing Indo-European etymologies for Urartian regal names. Thus, for instance, Argišti is said to be from *√$h_2erǵ$- 'white, bright', and Šarduri is said to contain *deh_3ro- 'gift' (cf. Arm. *towr* 'gift'). In this case, the relation between the rulers and the population of Urartu would be more similar to the situation in the state of Mitanni, whose inscriptions are written in Hurrian, but whose regal names and certain technical terms are borrowed from Indo-Aryan. However, in the case of Urartu, the onomastic evidence is too weak to be conclusive.[1]

Loanwords yield the clearest evidence for contact between Armenian and the Hurro-Urartian languages. Furthermore, it broadly helps to clarify further the social position of Proto-Armenians in relation to Urartians. Possible loanwords between Armenian and Urartian have been noted by Msériantz (1904), Łapᶜancᶜyan (1940: 37–40, 1951, 1961: 104–46), Bănăţeanu (1962), J̌ahowkyan (1967), and Greppin (1982, 1991). Critical summaries of the material, along with additional comparisons, are offered by Diakonoff (1985) and Simon (2023).

In some of his publications, Greppin (1990, 1996b, 2008b, 2011) works explicitly from the assumption that Hurro-Urartian is genetically related to the Nakh-Daghestanian (in particular Lezgic) languages. This hypothesis had previously been advanced by Diakonoff (1971: 157–71) and Diakonoff & Starostin (1986). According to Greppin, then, it is possible to reconstruct Urartian forms based on Nakh-Daghestanian comparisons and, in turn, postulate the borrowing of these forms into Armenian. The relationship between Hurro-Urartian and Nakh-Daghestanian is, however, widely considered to be unproven (see Smeets 1989). Nevertheless, it may be possible to uncover loanwords that entered both Armenian and one or more Nakh-Daghestanian (proto-)languages. In the same way, it may be possible to conjecture Hurro-Urartian words based on their presence in Armenian and Kartvelian. Of

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[1]For example, the equation of Argišti and PIE *√$h_2erǵ$- is questionable because this root contains a palatovelar (cf. Arm. *arcatᶜ* 'silver'), while the Urartian name contains a plain velar.

course, only a textual attestation can decisively establish that a hypothesized loanword existed in a given donor language.

2.1 Hurro-Urartian loanwords in Armenian

In this chapter, I shall critically evaluate most proposals for Hurrian and Urartian loanwords in Armenian that are found in the previous literature. It is possible that some literature has been involuntarily overlooked, especially that which is older or difficult to obtain. Where no references are given, the comparison is, to the best of my knowledge, new. Three categories of proposals are distinguished. The first group (§ 2.1.1) contains the most compelling proposals, namely those loanwords attested in Hurrian or Urartian and whose forms and meanings match an Armenian word. The second group (§ 2.1.2) consists of proposed loanwords that are not attested in Hurrian or Urartian, but conjectured to have existed there on the basis of their morphology and attested loanwords in Akkadian, Hittite and other languages that were in contact with Hurrian or Urartian. Self-evidently, these proposals cannot be definitively confirmed, but I accept them as working hypotheses in cases where no other convincing etymology exists. The third group (§ 2.1.3) contains proposals which are to be rejected because the identity of form and meaning is insufficient, or because a conjectured Hurro-Urartian input form cannot be maintained.

The Hurrian material is primarily gathered from, or checked against, Thomas Richter's *Bibliographisches Glossar des Hurritischen* (BGH, 2012) and follows the transcription practice employed there, which may differ from the practice employed in other cited works. The Urartian material is checked against the dictionary of the *Corpus dei testi urartei* (CTU) by Mirjo Salvini (2018) and the *Electronic Corpus of Urartian Texts* (eCUT), which is based on Salvini's work and edited by Birgit Christiansen. Occassionally, N.V. Arutjunjan's *Korpus urartskix klinoobraznyx nadpisej* (2001) and I. I. Meščaninov's *Annotirovannyj slovar' urartskogo jazyka* (1978) have also been consulted, however mainly for the etymologies found therein. For convenience, Hurrian and Urartian forms are both cited in transcription, following BGH or Salvini (2018) respectively. Single hyphens thus mark morpheme boundaries, not sign boundaries.

2.1.1   Probable loanwords

II 1.   *աղիւս* *aḷiws* (*o*) 'brick, tile' ← Hu. *alipši* 'mudbrick'
(Martirosyan *apud* Yakubovich 2016b: 181, Simon 2023: 74). This
Hurrian word was unknown to previous scholarship, as it is
found only in a bilingual Hurrian-Hittite inscription uncovered at
Ḫattuša/Boğazkale in 1983–85.[2] The borrowing must have preceded
the lenition of postvocalic *-*p*- > -*w*- in Armenian. Note that the
Hurrian *Š*-signs, as in Assyrian Akkadian, generally represent [s]
(Wegner 2000: 38). Hsch. ἄλιψ· πέτρα and λίψ· πέτρα, whatever
their exact path of transmission, may ultimately be related to the
Hurrian form as well, but given the divergent meaning, these forms
are unlikely to be more directly connected to the Armenian word.

II 2.   *դարբին* *darbin* (*a*) 'blacksmith' ← Ur. *dabrini (Yakubovich
2009: 267–70). The Armenian word is usually taken as cognate
with Lat. *faber* 'craftsman, smith' and reconstructed **dʰabʰrino/eh₂*-
(IEW 233–4). This reconstruction requires the suffix to be a contam-
ination of *-*ro*- (as in Lat. *faber* < *dʰabʰ-ro-) and *-*i(H)no*- (Olsen
1999: 471). However, the formal and semantic similarity with Hu.
tabiri, tabirni, tabrenni, tabrinni 'smith' cannot be ignored.

Martirosyan (EDA 236) proposes that Arm. *darbin* goes back
to a PIE hysterodynamic paradigm. Accordingly, he suggests
that Hu. *tabiri* is borrowed from an Proto-Armenian reflex of a
PIE NOM.SG *dʰabʰ-ér, while *darbin* continues the oblique stem
*dʰabʰ-r- through addition of the suffix *-(*s*)*neh₂*-. This cannot be
accepted since Hu. *tabiri* is a transparent derivation from the verbal
root *tab/w*- 'to cast (metal)' with the agentive participle suffix -*ir-i*
(Wilhelm 1988: 50–2). As such, the form *tabiri* is originally a verbal
formation, while the derivation in -*r-inni* represents a common way
of forming nouns for professions, cf. *urbarinni* 'butcher' (Wegner
2000: 49). Furthermore, Sum. *ta/ibira* is hard to exclude from this
complex. While it can hardly be a loan from Armenian, it is readily
explained as a Hurrian loanword (Wilhelm 1988: 50–2).

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[2]Neu (1997: 256) proposes that the Hurrian word is borrowed from Akk. *libittu*
'brick'. The prothesis of *a*- can easily be caused by the Hurrian restriction against
initial resonants, but the different ending is not simply accounted for, because the
suffix -(*š*)*ši*- normally forms abstract nouns (Wegner 2000: 49). Assibilation *ti > *ši*,
as proposed by Fournet (2011: 52, 2013: 4, not citing Neu), is not a regular Hurrian
sound law.

Since Hurrian initial stops were allophonically voiceless, the root *tab/w-* may reflect an underlying */dab-/. It is therefore possible to assume a donor form Ur. *dabrini, matching Hu. *tabrinni*. On the other hand, the word is not attested in Urartian, so we cannot definitively confirm that the underlying root had a voiced onset (Simon 2023: 71). The suffix *-ni* is not attested in the function of forming profession nouns in Urartian. It appears, however, as a common individualizing suffix (Salvini 2018: 487), so the assumption of an Urartian donor form seems possible. It appears that the word entered Armenian early enough to take part in the regular metathesis of the cluster *br > *rb* (cf. Viredaz 2019: 4). There is no evidence for such a metathesis in Urartian. Unfortunately, there is no other evidence for the timing of the metathesis. Arm. *sowrb* (*o*) 'pure, holy' has been argued to be a loan from an Old Iranian **subra-* (cf. Khot. *suraa-* 'pure' < **śkubʰ-ro-*, Lubotsky 1998: 78–9, 2001a: 51). It remains possible, however, that the Armenian form directly reflects **ḱubʰ-ro-* without the *s* mobile (see EDA 589–90). Simon (2023: 71) claims that Arm. *arawr* 'plough' < **h₂erh₃tro-* means that the lenition preceded the metathesis. However, this only applies to the *tenues*, as they never take part in the metathesis, which is limited to clusters with *mediae* (*aspiratae*).

If we accept that the word was borrowed from Urartian, it does not necessarily mean that Lat. *faber* is unrelated to Arm. *darbin*, as implied by Martirosyan (EDA 236). The Latin word, reflecting PIt. **þabro-*, may represent a 'trade word' that spread to Italy via Anatolia, and ultimately from Hurrian. In the same semantic context, note Lat. *ferrum* 'iron' (quasi-IE **bʰerso-*), which probably reflects a *Wanderwort* with origins in the Near East as well, cf. Akk. *parzillu* 'iron' (← Luw. **parza-*; Valério & Yakubovich 2010), and perhaps Sv. *berež* 'iron' (Thorsø, Wigman et al. 2023: 111–2).

II 3. **խաղող** *xałoł* (*o*) 'grapes' ← Ur. *ḫaluli* 'a fruit (?)' or Hu. *ḫaluli* 'grape' (Diakonoff 1985: 600 following Mkrtčʿyan, J̌ahowkyan 1987: 426, BGH 122). The meaning of the Urartian word is not independently established (cf. Salvini 2018: 389). While Melikišvili (1971: 82) prefers 'ceremony, ritual (?)', Christiansen (eCUT) glosses it 'fruit'. Given the formal match with Hu. *ḫaluli*, which translates Hit. *muri-*, *muriian-* 'grape' and the Sumerogram ᴳᴵˢGEŠTIN (BGH 122), it is likely that the Urartian word also means 'grape' or 'vine'. In the inscription CTU A 12-01, it also appears next to the aforementioned

Sumerogram. Given this context, the Hurrian and Urartian forms are almost certainly cognate. We can thus establish that the Armenian word was borrowed from either Urartian or Hurrian, but the direct source cannot be determined.

II 4. *խարխարեմ xarxarem* 'destroy' ← Ur. *ḫarḫar-* 'destroy' (Simon 2023: 72). Greppin (1982: 72, 1991: 721) and Diakonoff (1985: 600) discuss the alternative stem Ur. *ḫarḫarš-*, but the Armenian word was clearly adopted from the form without *-š-*. Otherwise, the equation is formally and semantically perfect. There exists a widespread stem variant *xarxal-* (see HAB II: 345), but the Urartian form demonstrates that this variant must be the result of secondary dissimilation.

II 5. *խնձոր xnjor* (*o*) 'apple' ← Hu. *ḫinzuri* 'a fruit tree' (Łapᶜancᶜyan 1951: 588, Greppin 1991: 724b). This is a formally perfect equation. Further, the Hurrian word was the source of Akk. *ḫinzūru, ḫenzūru, inzūru* 'a fruit tree' and Aram. *ḫazzūrā* 'apple'. Sum. *ḫašḫur*, Akk. *ḫašḫūru* 'apple' appear to be connected as well, but they must have been borrowed independently from a different source.

   If *-uri* represents a suffix (cf. perhaps *salor*, II 18), it is likely that Hu. *ḫinz-* is borrowed from a Daghestanian language, cf. Dargwa *ʕinc*, Lak *hiwč*, Lezg. *ič* 'apple'; Ch., Ing. *ḥamc* 'medlar' < PND **hʕam(V)c* (Nichols 2003: 263). The native range of the wild apple (crab apple, *Malus sylvestris*) has its southern border along the southern coasts of the Black and Caspian seas, running north of the lakes Van and Urmia. Apples were not cultivated on a large scale before the Classical Era (Zohary, Hopf & Weiss 2012: 137). Thus, it is likely that earlier wild apples and seeds were imported into Mesopotamia from the Caucasus by Hurrian speakers, which also accounts for the spread of the word into Armenian. On linguistic grounds, however, it cannot be excluded that the immediate source of the Armenian word was an unattested Urartian form.

II 6. *պեղեմ pełem* 'to dig (out)' ← Ur. *pili* 'canal' (Łapᶜancᶜyan 1940: 39, 1961: 135–6; Bănățeanu 1962: 264–5, Simon 2023: 68). The Urartian word is cognate with Hu. *peli, pala* 'canal' (BGH 292 with references).[3] The lowering of **i > e* in Armenian can be explained as a late

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[3] Greppin (1991: 726b) adduces Avar *pula* 'pipe' and other, allegedly related Nakh-Daghestanian forms. These may perhaps be considered loans from Hurro-Urartian, but the vocalism seems to pose a problem.

change caused by the following -*ł*, cf. *asełn*, GEN.SG *asłan* (< **asiłan*) 'needle' (Martirosyan 2017: 296). We may thus assume that the verb Arm. *pełem* is independently derived from an unattested **peł* < **pił* 'canal'.

II 7. *սան* *san* (*i*) 'kettle, cauldron' ← Ur. *šani* 'a container (vase, cauldron vel sim.)' (Łapᶜancᶜyan 1940: 38, 1961: 136; Bănăţeanu 1962: 274; Greppin 1991: 726b, 2008b: 80, Yakubovich 2016a: 158, Salvini 2018: 411). This equation is formally and semantically unobjectionable.

II 8. *փոխ* *pᶜox* (*o/i*) 'loan, exchange', *pᶜoxem* 'change, transfer' ← Ur. *puḫ-* 'change, alter', Hu. *puḫ-* 'exchange' (Łapᶜancᶜyan 1951: 39, Diakonoff 1982: 17, 1985: 599, Yakubovich 2009, 2016b: 181). The Hurro-Urartian lexeme must ultimately be borrowed from Akk. *puḫḫu*, *pūḫu* 'exchange, alter'. Yet, it remains most economical to assume that the word was borrowed through Hurrian or Urartian. This is because a phoneme /o/ does not exist in Akkadian except for very late dialects, and because there is a nearly complete lack of supporting evidence for direct Akkadian-Armenian contact (cf. Diakonoff 1982). Hurrian only attests to nominal formations of the root *puḫ-*, while in Urartian, we find a prohibitive verbal form *puḫiani* 'let him not alter'. According to Yakubovich (2016b: 181), this "tips the scale in favor of Urartian as the source of Armenian borrowing". It is not a decisive argument, however, since the formation of the denominal verb *pᶜoxem* would be a trivial process in Armenian. Thus, it cannot be theoretically excluded that Hurrian was the source.

2.1.2   Uncertain and conjectural loanwords

II 9. *աղախին* *ałaxin* (*o*, NOM.PL -*aykᶜ*, GEN-DAT-ABL.PL -*acᶜ/-ancᶜ* [Bible], later *a*) 'maidservant, female slave' ← Hu. **alla-ḫḫi-nni* lit. 'belonging to the lord or lady', cf. Hu. *alla* 'lord, lady', Ur. *alaue/i* 'lord' (Diakonoff 1971: 84, BGH 14, Simon 2023: 70). Diakonoff (1971: 84) also considers Akk. *allaḫinnu* to be a borrowing from this reconstructed Hurrian form. However, although the Akkadian word refers to some kind of administrative function, its precise meaning is unclear (CAD I: 296).

The Armenian word has been connected with the verb Arm. *ałam* 'to grind' < **√h₂elh₁-* and *ałǰik* 'girl' (Meillet 1936a, Olsen 1999:

470). However, the word formation, especially the element *-x-*, is difficult to explain by Indo-European morphology (cf. EDA 24–5). The hypothesis of a borrowing from Hurrian is thus preferable.

Diakonoff (1971: 84, 1985: 599b) further considers Arm. *ałx* (*i*) 'ring, button, lock; baggage, goods; crowd' (especially in the sense 'household') to be a borrowing from Ur. *alāḫi/e*, which would be cognate with the hypothetical Hurrian **alla-ḫḫi-nni*. This is untenable, however, partly because of the semantic difference, and partly because the Urartian accent was most likely paroxytone (Wilhelm 2008: 109). Thus, the expected Armenian outcome would be ****ałax*. In any case, there is no explanation for the loss of the second **a*.

II 10. ***անագ*** *anag* (*i/o*) 'tin'. This word is clearly connected to Akk. *an(n)akum*, Sum. *anna, nagga*, and Skt. *nāga* 'tin', but the exact path of transmission of these forms is unclear. Diakonoff (1985: 598–9) asserts that the final *-g* of the Armenian form can only be due to the Hurrian reflection of intervocalic *-k-*. A form **anagi* is not attested in Hurrian, but it is possible that the etymon is ultimately based on the verbal root Hu. *nakk-* 'to cast (metal)' (Salonen 1952: 6). In this case, the Akkadian, Sumerian and Sanskrit words are all ultimately from Hurrian. The direct source of the Armenian word remains uncertain, however.[4]

II 11. ***անանուխ*** *ananowx* (*o*) 'mint, *Mentha*'. As in the case of *anag* (II 10), we are faced with a *Wanderwort* with a nearly perfect formal match in Akk. *ananiḫu* (*nanaḫu, naniḫu*) probably 'mint'. The *-ow-* of the final syllable is also found in NP *nānūxēh* 'mint'. However, since borrowing from an Iranian language (as per Hübschmann 1897: 96–7, HAB I: 180) cannot explain the initial *a-*, a better solution may be to follow Diakonoff (1985: 599) and assume a Hurro-Urartian donor form **ananuḫḫe*, containing the adjectival suffix *-ḫḫe* (cf. Wegner 2000: 47–8). A parallel formation **ananiḫḫe* would have served as the source for the Akkadian word. Diakonoff compares the base with Hu. *an(an)e/isḫi* 'joy, pleasurable, pleasing (thing) (?)' (BGH 28). All of this remains conjectural, however. An elaborate discussion of this *Wanderwort* is provided by Davtyan (2019).

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[4]We may note another form showing Arm. *-g-* against Akk. intervocalic *-k(k)-*, viz. *owrag* (*a*) 'hatchet', if this can be compared with Akk. *urraku* 'sculptor' (HAB III: 613–4). Due to the semantic difference, this is questionable, however.

II 12. *բաբայ* *babay* 'hill' ← Ur. *baba** 'mountain', PL ᴷᵁᴿ*babani* 'mountainous land' (Łapᶜancᶜyan 1961: 133). This word is a lexicographical hapax in the *Baṙgirkᶜ hayocᶜ* by Eremia of Mełri, with the gloss *blowr* 'hill'. The lemma does not appear in all editions, however, so the existence of the word is doubtful (Amalyan 1975: 45). If it is genuine, Łapᶜancᶜyan's proposal of a loan from Urartian is possible. Hu. *paba-*, *pappa-* 'mountain' confirms that the Urartian word is inherited. Given the very late attestation, it is possible that the final diphthong ⟨-ay⟩ is a hypercorrect spelling for /-a/ (see the discussion of *caṙay*, II 37). However, the etymology is uncertain due to the lack of a reliable attestation of the Armenian word.

II 13. *դոն* *don* (*i*) 'a kind of bread, mostly long and thin' ← Ur. **doni*, cf. Hu. ⁽ᴺᴵᴺᴰᴬ⁾*tuni* 'a bread (?); footstool'. This word is attested in the 13ᵗʰ c. Synaxarion (*Yaysmawowrkᶜ*), but may appear already in the *Knikᶜ hawatoy* (7ᵗʰ c.) in the context *doniw hacᶜiwkᶜ* 'with *don*-breads (?)' (see EDA 241). In Eremia's dictionary (Amalyan 1975: 273), it appears as a gloss of *pakᶜsimat*, a type of twice-baked bread.

Traditionally, it is considered a reflex of PIE **dʰoHneh₂-* 'grain, bread' (cf. Skt. *dhānā́-*, Li. *dúona* 'bread'; HAB I: 679). The absence of the raising *oN > uN* is unexpected, however. Martirosyan (EDA 225, 242) suggests that *u* was lowered to *o* under the influence of a following *a* and thus assumes an *a*-stem ***duna- > *dona-*. However, the only other potential example for this change is *gom* 'fold for sheep/cattle', which replaces expected ***gowm* if compared to ON *gammi* 'earthen hut' < **gʰom(m)-*. However, this word rather reflects PIE **h₂uos-mo-* 'staying place' (see IV 25). Given that the sequence *-on* points to a loanword, we may consider whether the source was an Urartian word corresponding to Hu. ⁽ᴺᴵᴺᴰᴬ⁾*tuni-*, a cultic term for a pastry or bread in the shape of furniture, mostly a 'footstool' (cf. BGH 470 with references). The word also appears in Hittite contexts, as ᴺᴵᴺᴰᴬ*duni-* (as well as *tunik-*, *tunink-*) 'a cultic bread, soup, or mash' (see HEG III(10): 437–8). If this word is of Hurrian origin, and originally designated a kind of bread (rather than a kind of furniture), we may be able to reconstruct an Ur. **doni* 'bread', with voiced onset, which served as the immediate donor of the Armenian form. Due to the somewhat poor attestation of the Armenian word, as well as the uncertainties regarding the original meaning of the Hurrian/Hittite cult term, the etymology remains uncertain. See also the elaborate discussion by Martirosyan (EDA 241–3).

II 14. ծիծ *cic* 'breast' ← Hu. *zizzi* 'female breast' (Fournet 2013: 10–1). The comparison is possible, but the iconic character of these words makes it impossible to exclude that they are independent creations, cf. G *Zitze* 'teat'.

II 15. մախր *maxr*, dial. *marx* 'pine' ← Hu. *maḫri* 'pine (?)' (Greppin 1991: 725, Simon 2023: 74). The Hurrian word is clearly connected to Akk. *meḫri* 'fir', the Ugaritic TN *mḫr* (BGH 238), perhaps the Nakh-Daghestanian forms Ch. *max* 'aspen', Avar *max:* 'birch' and finally NP *marx* 'resinous wood'. The Armenian word is not attested before the 13ᵗʰ century *Geoponica*, however. Therefore, it may also be explained as a loan from Persian (cf. Diakonoff 1985: 599 fn. 16). In this case, the metathesis seen in the literary Armenian form would be paralleled in *čᶜaxr* 'wheel' ← NP *čarx* 'id.' Strictly speaking, it is thus impossible to decide between Persian and Hurro-Urartian origin for the literary form, while dial. *marx* is clearly borrowed from, or influenced by, the Persian form.

II 16. նուռն *nowṙn* (GEN.SG *nṙan*, NOM.PL *nṙownkᶜ*) 'pomegranate' (Diakonoff 1985: 599). This is an old *Wanderwort* connected with Sum. *nurma*; Akk. *nurmû, nurimdu*, (Nuzi) *lurmû, lurīnu*. In Hurro-Urartian, the only attestation is Hu. *nurandi* 'pomegranate'. The variation found within Akkadian suggests a foreign provenance. This may be conferred with the fact that pomegranates are native to the highlands of Iran and not to Mesopotamia. The shape of the Armenian word, with two identical nasals, best matches Hu. *nuran-*, assuming that *-di* represents a suffix, which is uncertain. Assuming that the input form was Hu. or Ur. **nuran-*, we would expect Arm. *nṙ/ran* after the loss of unstressed high vowels. This form would then have been analyzed as a GEN-DAT.SG on the pattern of *dowṙn, dṙan, dṙownkᶜ* 'door'.

II 17. ուղտ *owłt* (*u*) 'camel' ← Ur. *ulṭu (?) 'an animal' (Bănăţeanu 1962: 270, Diakonoff 1985). This is certainly a *Wanderwort* connected with Akk. *udru* and Av. *ušϑra-* 'camel'. However, the Urartian word is only attested in the fragmentary form ᴳᵁ⁴*X-˹ṭu˺-ni*ᴹᴱ�Š (CTU A 8–3 iv 6). Given the incompatibility of other known forms, Urartian does remain the most likely donor of the Armenian word, but this cannot be confirmed. The etymology is further complicated by the Urartian use of the determiner GU₄, which seems to suggest that the word designates a type of cattle (Simon 2023: 69).

II 18. *սալոր salor* (*i/o*), dial. *šlor* 'plum'. Most likely related to Akk. *šallūru*, *šennuru* (Nuzi) 'a fruit tree', Sum. *šennur* 'plum'. This word is not directly attested in Hurro-Urartian, unless it underlies the TN *Šallurašwa* (BGH 347). Nonetheless, the Armenian word cannot be a loan from Akkadian, nor via Hurrian or Urartian, as *o* for *ū* would be unexpected (cf. Simon 2023: 78). It is possible, however, that the etymon is originally Hurrian due to the observed variation of *l* and *n* in the Akkadian/Nuzi and Sumerian forms, which would represent loanwords from different Hurrian dialects (cf. Diakonoff 1971: 55, 1985: 599b). Moreover, we can conjecture a suffix **-uri*, which recalls Hu. *ḫinzuri*, Arm. *xnjor* (II 5) 'apple' (cf. Greppin 1991: 725b).[5] In conclusion, it is possible that the direct source of the Armenian word is Urartian or Hurrian, but the etymology remains conjectural.

II 19. *տուփ towpᶜ* (*o*) 'box, case' ← Hu./Ur. **tup(p)-*. Based on Hit. *tuppa-* 'chest, basket', which may be a loan from an identical Hurrian form, Simon (2023: 72) cautiously assumes an Urartian input form **dupa-*, which underwent the Armenian sound shift. Since I do not accept the premise that Hurro-Urartian loans generally preceded the sound shift (see § 2.4), I rather assume that the input form had intial **t-*, a possibility admitted by Simon, and that the final stop was aspirated as in Ur. *puḫ-* 'change' (II 8). In this case, the loan hypothesis is possible, but remains conjectural due to the lack of Hurro-Urartian attestations.

2.1.2.1 Possible Hurro-Urartian suffixes

In a small group of words, Hurro-Urartian origin can be suspected on the basis of particular suffixes alone. By their nature, all of these etymologies are uncertain.

Arm. -*ard* Łapᶜancᶜyan (1951: 595) connects *saɫard* (more often spelled *saɫartᶜ*) 'leaf, leafy branch' and Hu. *šalardi*, a word of unknown meaning. Two other words of obscure origin may also contain a suffix -*ard*, viz. *makard* 'rennet' and *tᶜakard* 'trap'. The

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[5]The claim that the *l* tenuis of the Armenian word requires the input of a geminate (Fournet 2013: 7, 11) is baseless. If there is any difference in the treatment of geminates and singletons, rather the opposite would be the case, since in inherited words, the Armenian velarized *ɫ* only develops before other consonants whence it may spread analogically (Meillet 1936b: 46–7).

function of Hu. *-ardi* seems to be the formation of abstract nouns (Diakonoff 1971: 70, 73), which does not harmonize well with the meaning of the Armenian words, however. The suffix is unattested in Urartian.

Arm. *-sx* The following three words in Armenian appear to contain an element *-sx*. Already Bugge (1893: 10) identifies this as a suffix, suggesting that it reflects PIE **-iskʰo-*, cf. Gk. -ιχο- next to -ισκο- (= Arm. *-icᶜ*). This is unlikely, however. Based on the meaning of these few words, I would rather suggest to tentatively compare *-(i)sx-* with Hu. *-Vsḫi*, Ur. *-sḫi* which forms *nomina loci* and *nomina instrumenti* (Wegner 2000: 50), functions which potentially fit all three examples. For none of them, however, is a comparison with any Hurrian or Urartian root possible. It cannot be determined whether the suffix *-sx* was at some point productive within Armenian. The scarcity of examples would suggest this not to be the case, but it is possible that its productivity was later eclipsed by the Iranian loan suffix *-an* (Olsen 1999: 289) and the etymologically obscure *-ocᶜ* for the specialized purpose of forming *nomina loci*.

II 20. խարիսխ *xarisx* (*a*) 'foundation'. Ge. *xarisx-* 'staircase' is borrowed from Armenian. The by-form *sarisx* is probably secondary (HAB II: 345). On phonological grounds alone, a hypothetical link with Hu. *ḫari*, Ur. *ḫari* 'road' would be possible, but the semantic development is difficult to understand, unless an additional meaning 'ground, base' is assumed. Hu. *ḫareshi* is found in a Hittite religious text, but its meaning is unknown (BGH 133).

II 21. խորիսխ *xorisx* (*o*) 'honeycomb'. Dialectally, this word often refers to the 'soft center' of cakes and fruits, and in Trebizond 'egg yolk' (cf. HAB II: 408). It has been compared to Li. *korýs* 'honey', Gk. κηρός 'wax' (Bugge 1893: 10). This requires that the suffix *-sx* was added to an inherited (perhaps originally European substrate) form **kʰori-*. Bugge starts from **kori-* with subsequent (post-sound shift) assimilation *kᶜorisx > *xorisx*. No parallels for this phonological development exist, however.[6] No word with the meaning 'honey' or similar is attested in Hurrian or Urartian, which leaves the possibility open that *xorisx* is a wholesale borrowing from these languages.

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[6]Bugge's equation of Arm. *xaxankᶜ* 'laughter' with Gk. καχάζω 'laugh aloud' is a poor parallel due to its obvious iconic character.

II 22. *շարասխ šarasx* 'a plant that deters or kills insects', attested only in a medical text. Ališan (1895: 483) cites it with a question mark, but suggests it may be identical with *šardak*, *šardowk*, similarly of unclear meaning. Ačaṙyan (HAB III: 502–3) records no etymologies for these words. It seems possible to think of *šarasx* as a derivation of *šar* 'swarm', also 'row, rank, chain' etc., but its unclear meaning makes any etymology uncertain.

Suffix -*or* The element -*or*, found in *xnjor* 'apple' (II 5) and perhaps *salor* 'plum' (II 18) is potentially a tree name suffix. This makes it relevant to note other tree names with this suffix in Armenian, even though they find no comparanda in Hurrian or Urartian: Arm. *gxtᶜor* (*głtᶜor, gxtor*) 'gall (nut)' and the synonymous *šklor* (Ališan 1895: 486–7).

Finally, we may note *ałtor* (var. *axtor, ałtowr*) 'sumac (tree), *Rhus coriaria*' (HAB I: 136, J̌ahowkyan 2010: 40). For this word, we may perhaps adduce Hit. ᴺᴵᴺᴰᴬ(*a*)*lattari-* 'a kind of bread', which is considered a Hurrian loanword (HED I: 32), and might thus mean 'bread sprinkled with sumac'. Ge. *alaṭro* 'sumac' seems to represent a borrowing from a related source. However, for want of any relevant Hurro-Urartian attestations, this etymology remains speculative.

2.1.3   Rejected proposals

II 23. *ագարակ agarak* (*a*) 'farm, field' ← Hu. *awari* 'field, steppe' (Greppin 1991: 724, Fournet 2013: 3). The Armenian word is an *a*-stem and contains the suffix -*ak*, which suggests it was borrowed from an Iranian form with the suffix *-*aka*- (EDA 5). However, there are no Iranian comparanda, and it cannot be excluded that the suffix was added independently within Armenian (cf. Olsen 1999: 240–1). It is also difficult to exclude borrowing from a different source, e.g. Sum. *agar* 'meadow', in which case the word would have passed through an unknown language, cf. Bănăţeanu (1962: 266), who proposes a borrowing from Sumerian through Urartian. The assumption that *-*u̯*- ← HU -*w*- is reflected as Arm. -*g*- remains uncontradicted and is thus not problematic in itself, but requires confirmation by a more certain loanword, which does not exist.

II 24. *ագուռ agowṙ* (*o*) 'burned brick'. In the older literature, this word is attested only once (*Paterica*). It is clearly connected to Akk.

agurru, Aram. *agōrā* 'brick'. Diakonoff (1985: 598) assumes that the word was borrowed through Hurrian because a loan from Syriac would yield **aguray. The word is not attested in Hurrian, however, and because it appears late in the Armenian literature, the immediate donor may easily have been NP *āgūr* 'brick' (HAB I: 78–9).

II 25. ⲁⲓⲧ *ayt* (*i*, mostly PL *aytkᶜ*) 'cheek' ← Hu. *ab/wi* (spelled *ai(e)*, *aj(e)* in Mitanni texts) 'front; in front of' (Fournet 2013: 5). The semantic match is poor, and the gloss 'face', provided by Fournet, appears to be unsupported (see BGH 36). The final -*t* is not clearly explained. If from a suffix *-*di*, we would have to assume that the borrowing happened before the Armenian consonant shift, for which there are no other clear examples (see § 2.4 for a discussion). Most crucially, the Armenian word should not be separated from its derivatives *aytnowm* (AOR *ayteay*) 'to swell', *aytowmn* and *aytoycᶜ* 'swelling'. All reflect PIE *√h_2eid- 'swell', cf. Gk. οἶδος 'swelling, tumor', οἰδέω 'to swell' and OHG *eiz* 'abcess' (HAB I: 172, EDA 61).

II 26. ⲁⲩⲣ *ayr* (*i*) 'cave, den' ← Hu. *abiri derived from *abi* 'pit, hole' (Fournet 2013: 5). The suffix -*iri* is a participal suffix (Giorgieri 2000: 243) and would be unexpected in a word of this meaning. Fournet envisions a lenition of the intervocalic *b/w* similar to *ayt* (II 25), but such a lenition would be irregular. With these obstructions in mind, the traditional Indo-European etymology is preferable.

Arm. *ayr* is compared with Gk. ἄντρον 'cave' since Pisani (1944: 161–2). A comparison with Lat. *antrum* 'cave', most likely a loan from Greek, is suggested already by Petermann (1837: 146). The Greek form can be assumed to have originated as the singulative of a collective *ἄντρα, which allows for the postulation of a hysterodynamic *$h_2ntḗr$, *h_2ntr-, compare Gk. ἀστήρ and ἄστρον (Lamberterie 1978: 243–5). In Armenian, the NOM.SG *$h_2ntḗr$ would develop along the lines of *ántēr > *anēr > *anir > *ayr*. The transfer to the *i*-stem declension probably results from a wish to eliminate an irregular *r*-stem paradigm *ayr*, *aner (compare *oskr*, *osker* 'bone') that would have emerged after the lenition of *n before *i (Olsen 1999: 92).[7]

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[7] The difficulty posed by Lamberterie's (1978: 243–5) proposed development via "*andhir > *ayndhir" through *i*-epenthesis is criticized by Clackson (1994: 98), who points out that this epenthesis otherwise never operates across consonant clusters. This does not warrant the labelling of the Greek-Armenian etymology as "impossible"

II 27. *առիւծ aṙiwc, aṙewc* (*u*, later *o*; nom.pl. *aṙiwck^c* and *aṙiw-cownk^c*) 'lion'. According to Blažek (2005: 14–5), this is a borrowing of Ur. **arenzu-*, an unattested cognate of the Hurrian river-name *Aranzu* (cf. also PN *Aranzaḫ* and other variants), referring to the river Tigris. Blažek ascribes the loss of *n* and the diphthong *iw* (< **ew*) to *u*-epenthesis, but it is unlikely that this rule operated at such a late point in time. The *u*-epenthesis (*strictu sensu*) as in *giwt* 'discovery' < **u̯id-(t)u-* is only observed in cases where a *u* in the final syllable has been lost. This rule is not identical with the so-called *awcanem-*rule, which is responsible for the loss of *n*, i.e. **-VnK^w- > Arm. -Vwḱ-* (see Kümmel 2007: 319–27). The latter must be a very early change since it only applies to sequences with old labiovelars. Therefore, it is impossible that it could also be responsible for a late change of **-enz- > *-ewc-*.

The word has traditionally been derived from a poorly attested root **√reug-* 'roar' (HAB I: 259–60). Kölligan (2020b: 78–85) more convincingly derives it from PIE **h₃réǵ-ō(n)*, GEN.SG **h₃rǵ-n-és* 'king' (cf. Skt. *rā́jā, rajñáḥ,* Brythonic *ricon*), an etymology first proposed by Łap^canc^cyan (1927: 105–7). Starting from an old *n*-stem better explains the vaccilation between *u*- and *n*-stems in the Classical Armenian paradigm (NOM.PL *-ownk^c* < **-ones*). The trilled *ṙ*, which is traditionally explained by sound symbolism (cf. Olsen 2020: 120), may instead represent a generalization from the archaic oblique stem **aṙn°* < **h₃rǵn-*.

II 28. *արտ art* (*o*) 'tilled field' ← Hu. *arde* 'town' (Greppin 1991: 724b). The equation is unlikely for semantic reasons. Greppin adduces the parallel of Slavic **gordъ* 'town' and ON *garðr* 'yard, farm', but the Old Norse form does not betray the same semantic shift, because all these words reflect an older meaning 'fence, enclosure' (Li. *gaȓdas*) or 'house' (Go. *gards*).

Arm. *art* is usually considered to reflect PIE **h₂(e)ǵro-* (HAB I: 337, EDA 146–7), cf. Gk. ἀγρός, Lat. *ager*. The problem of the development **-ǵr- > -rt-* should not be exaggerated. This most likely reflects the loss of affrication before *r* at some point before the metathesis,

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as per Beekes (2010: 110), however. If we accept the proposal of Olsen (1989; cf. Kümmel 2017) that the outcome of originally pretonic **-nt-* is *-n-*, and assume that this change was relatively early, the development of **antēr > *anēr* would have proceeded identically with that of *ayr* 'man' from **h₂nḗr*, whether as a result of intermediate *i*-epenthesis or not.

thus *-ǵr- > *-tˢr- > *-tr- > -rt- (Pedersen 1906a: 352, but see Kölligan 2020a for an alternative view). Another example is *barti* 'poplar' < PIE *bʰ(e)rHǵ- (EDA 146, 172–4). Arm. *merj* 'near' < *meǵʰsri (Gk. μέχρι 'as far as') is not a counterexample since the cluster was voiced and may have been more resistant to deaffrication (Pedersen 1906a: 352 assumes an intermediate stage *merz*, which is less economical).

11 29. ասեմ *astem* 'to ask in marriage, to marry (?)', a word of poor attestation without a fully certain meaning, has been seen as a loan from Hu. *ašte* 'woman' (Łapᶜancᶜyan 1951: 31, Greppin 1990–1991). This implies that the Hurrian word was reflected as an unattested Arm. **ast* 'woman, wife', from which the verb *astem* was internally derived. However, the meaning of the Hurrian word is also contested (BGH 59–60 with references). Alternatively, a connection between Arm. *astem* and *hastem* 'to affirm' has been proposed – see Lamberterie (1992), who notes a parallel development in MHG *vesten*, MEng. *fast* 'to become engaged'. This proposal is equally plausible. For further discussion, see EDA 119–20.

11 30. աւան *awan* (*a*) 'small town, village' ← Ur. *ebani* 'land, region' (Łapᶜancᶜyan 1940: 38, 1961: 133–4). According to Łapᶜancᶜyan, Meg. *abani* 'place' and Ge. *ubani* 'district' are independent loans from Urartian. However, the substitution *e → a* (and Georgian *u*) is unexplained. Arm. *awan* is doubtlessly an Iranian loan, cf. OP *āvahana-* 'village' (HAB I: 353). The loss of *h* between homorganic vowels, i.e. *-aha- > -a-*, is regular, cf. Arm. *akanǰat* 'whose ears are cut' < **akanǰa-hat* (HAB I: 353), Arm. *van* 'dwelling' ← Ir. **vāhana-*. The scepticism of Hübschmann (1897: 112), followed by Bănăţeanu (1962: 260), is thus unwarranted.

11 31. աւրիորդ *awriord* (*a*) 'young woman, maiden'. Łapᶜancᶜyan (1961: 134) considers the first element **awri°* to be borrowed from Ur. *euri* 'lord' (cf. Hu. *ewri*). Because of the vocalism (*awri-* for ***ewri-* or ***iwri-*), this equation is not compelling. A slew of alternative etymologies are at hand. Olsen (1999: 531) suggests we are dealing with an agent noun in *-ord* (< *-kʷr̥t* (?), cf. *ors-ord* 'hunter') built to a stem **ātriio-* 'fire' (< PIE **h₁eh₂-tr-*), with a semantic parallel in Lat. *ātriensis* 'house servant' and a potential cognate in Av. *ātrə-kərət-* 'who has to do with the fire'. It remains most attractive, however, to assume that the transparent analysis as a nominal compound **awri + ord** 'offspring' (< **porti-*, cf. Gk. πόρτις 'calf', Arm. *ord-i* 'son', and

perhaps *ortᶜ* (*ow*) 'calf') is fundamentally correct. Martirosyan (EDA 157) suggests that *awri can reflect an Iranian **ahuri-* 'lordly', derived from **ahura-* 'god, lord', but offers an alternative comparison with Mac. ἀκρεία, Phr. (Hsch.) ἄκρι-στις 'young girl', if from **h₂ekr(e)i-*. Finally, an enticing suggestion is offered by Kölligan (2019: 100–4), who compares Lat. *aper* 'wild boar; a kind of fish' with the assumption of a semantic shift 'boar' > 'lord, ruler' as paralleled by the cognate ON *jǫfurr* 'king' (cf. OE *eofor* 'boar'); or, alternatively, a direct metaphorical transfer of 'young boar' to 'young woman', with several parallels in Greek literature.

II 32. *գինդ gind* (*a*) 'earring' ← Hu. *ḫi(n)dduḫḫu* 'an object made of metal' (Łapᶜancᶜyan 1951: 583–4). The equation is phonologically impossible, because the established sound substitution of Hu. *ḫ-* is Arm. *x-* (cf. *xnjor*, II 5). The Armenian form can readily be explained from PIE **u̯endʰ-eh₂-*, cf. OE *windan* 'to wind, twist' (EDA 213–4).

II 33. *երկիր erkir* (*i/a*) 'earth, land, world' ← Ur. *qi(u)ra* 'earth, ground, soil' (Łapᶜancᶜyan 1961: 134–5). While it is probably true that Ur. *qira* would be reflected as Arm. **kir, we would have to assume an analogical addition of *er°* under the influence of *erkin-kᶜ* 'sky, heaven'. This scenario is not very plausible. For a comprehensive discussion of the famous word pair *erkinkᶜ/erkir*, see Knobloch (1961), Rasmussen (1999: 623–6), and especially Kölligan (2019: 104–49), who argues that *erkir* reflects an originally epithetic **du̯ēh₂reh₂* 'width'.

II 34. *ես es* 'I' (pers.pron. 1.SG.NOM) ← Ur. *ieše* 'I' (ERG) (Łapᶜancᶜyan 1961: 324). From the Urartian form, we would expect Arm. **yes > **[hɛs] (cf. Simon 2023: 66). The Armenian personal pronouns generally reflect the PIE paradigm, although analogy is extensive (Schmitt 2007: 115–7). The unexpected auslaut *-s* in the NOM.SG of the first person is usually explained by a generalized sandhi variant, arising in positions before other affricates. Most scholars assume that the regular Armenian form was **ec (< *h₁eǵ-oH, cf. Gk. ἐγώ), which underwent deaffrication (Meillet 1892: 164, Schmitt 2007: 116), but it is also possible to start from **ez (< **h₁eǵʰ-*, cf. Skt. *ahám*) with devoicing. However, especially given the ACC.SG *is* < *im-s, the influence of the deictic particle *-s-* (< *-*ḱo-*, cf. *ay-s* 'this (near me)') must be taken into account as well; similarly, the deictic particle *-d-* (*ay-d*

'that (near you)') may have influenced the second person pronoun *dow*, which appears for expected ***t^cow* < *PIE *tuH* (Godel 1975: 110, EDA 257, Kölligan 2019: 122–3 fn. 372).

II 35. *թիւ t^ciw* (*o*) 'number' ← Hu. *tiwe* 'word, deed', cf. Ur. *tini* 'name' (Łap^canc^cyan 1951: 597–8, Diakonoff 1985: 599) The equation is semantically problematic. Although the derivation from PIE *√*teuH-* 'swell, become strong' (cf. Olsen 1999: 23) is not completely convincing either, it is difficult to reject.

II 36. *ծառ caṙ* (*o*, once INST.PL *caṙawk^c*, Song of Songs 4.14) 'tree' ← Ur. *zari*/*ṣari* 'garden, orchard', cf. Hu. *sar-me* 'wood' (Bănăţeanu 1962: 271–2, Diakonoff 1985: 600, Greppin 1991: 726, Fournet 2013: 7). Based on the Hurrian form (attested only via Akkadian; BGH 337) one may expect an additional meaning 'wood' for the Urartian word as well, but this cannot be independently established. Therefore, the semantic difference remains a problem. It is safer to follow the traditional etymology (HAB II: 446, IEW 372), taking the Armenian word from PIE **ǵrsó-*, **ǵrséh₂-* (cf. Gk. γέρρον 'wattle-fence', ON *kjarr* 'brushwood'. The original meaning of **ǵrsó-* may have been 'twig, branch' (cf. Hsch. γάρρα· ῥάβδος) from which a semantic shift to 'trunk; tree' is conceivable.[8]

II 37. *ծառայ caṙay* (*i*) '(male) servant, slave' ← Ur. **ṣarrā-* 'captive' (Łap^canc^cyan 1951: 584–5, Diakonoff 1985: 598, cf. Diakonoff *apud* Greppin 1991: 727, note F). Diakonoff compares this reconstruction to Hu. *šarri* 'live booty, spoils' and *zarri* in the Mitanni Letter (cf. BGH 357). Usually, the final segment -*ay* reflects -*ā* in Syriac loanwords, which postdate the Urartian loans (e.g. *šowkay* 'market' ← Syr. *šūqā*, *k^cahanay* 'priest' ← Syr. *kāhnā*; Kitazumi & Rudolf 2021). The spelling ⟨ay⟩ appears to be a learned attempt at reflecting a foreign long /aː/ which does not exist in Armenian. This is similar to the reflection of Greek ⟨ω⟩ /oː/ as Arm. ⟨ov⟩ (Morani 2011: 152–5). It is hard to imagine that a similar principle could have applied to the much earlier Urartian loanwords. The remaining solution is that the ending of *caṙay* was affected by semantically somewhat similar terms like *tłay* 'boy' and *erexay* 'child' (cf. Pedersen 1906a:

[8]Martirosyan (forthcoming) adduces a rare word *caṙan* 'penis', found in a scholion to Philo (cited by NBHL 1: 1012), as well as in the dictionary of Norayr (922). It is possible that this word, probably limited to some dialects, represents a secondary derivation of *caṙ* '*twig' with the instrument suffix -*an*.

398). It would remain puzzling, however, why the final syllable did not undergo apocope to **caṙ. The assumption of an Urartian trisyllabic form **ṣarraV (Diakonoff 1985: 598) appears baseless. Finally, the reconstruction of initial Ur. ṣ- is based on the assumption that the actual Hurrian form was sarri, attested only once in an Akkadian word list (Diakonoff 1985: 598). Based on the more well-attested form šarri (BGH 357), we would expect Ur. *šarrV → Arm. **saṙ. In conclusion, if the Hurrian and Armenian words are even related, the word most likely passed through another (Semitic?) language.

II 38. *ծարաւ caraw* (*o*) 'thirst, drought' ← Ur. *ṣirabae* 'unwatered, deserted' (Petrosyan 2007: 16–7). Although the Urartian word appears only once (CTU A 08-15), its meaning is clear, as it refers to a land which was *ṣirabae* before King Argišti had ordered the construction of canal there. Nevertheless, the sound substitution *i* → *a* cannot be explained, so a direct loan from Urartian is impossible.

II 39. *ծով cov* (*u*) 'sea' ← Ur. *ṣue* '(artificial) lake, reservoir' (Msériantz 1904, Diakonoff 1985: 600, Greppin 1991: 726). The etymology of the Armenian word is an old crux. Given the imperfect semantic agreement with the Urartian word, which mostly designates an artificial lake (cf. Salvini 2018: 411), I prefer the assumption of a loanword from Kartvelian (see III 21). For a critique of alternative hypotheses, see Kölligan (2019: 152–63), who suggests that the word represents a transferred epithet, PIE *$d\mathdjieu$-o-b^hh_2-u- 'sky-coloured, sky-like'. If this etymology is correct, Ur. *ṣue* cannot be a loan from Armenian, because the change of intervocalic *b* (< PIE *b^h) > w postdated the contact with Urartian, as demonstrated by the TN *Zabaḫae* → Arm. *J̌awax-kᶜ* (cf. Diakonoff 1985: 601). In other words, we would expect Ur. **ṣub-. If the Kartvelian etymology is correct, a loan from Armenian is possible, but requires the assumption of a semantic change 'sea' → '(artificial) lake', which seems even less likely than the opposite change.

II 40. *կացին kacᶜin* (*o*) 'axe, hatchet'. This word may be connected to Akk. *ḫaṣṣinu* 'axe', but there is no indication that Hurrian or Urartian was the immediate source for Armenian, as per Diakonoff (1982: 16; cf. Simon 2023: 77).

II 41. *կորդ kord* (*a*) 'fallow, unploughed land' ← Ur. *quldini* 'desert, barren (?)' (J̌ahowkyan 1987: 432) The Armenian word lacks a better

etymology and the semantic match with the Urartian form would be acceptable. Still, there is no explanation of the substitution *l* → *r*. According to J̌ahowkyan (1987: 432), this may reflect Urartian dialectal features, but there is no evidence for this claim. For want of parallels to this sound substitution, the comparison cannot be accepted.

II 42. *կուտ kowt* (*o*) 'grain, seed' ← Hu. *kade* 'barley' (Greppin 1982: 144–5, 1991: 725). There is no way to explain the substitution *a* → *u*. Moreover, since single consonants were realized as voiced inter-vocalically in Hurrian, we would expect Arm. **kad.

II 43. *կնիք knik^c* (*o*) 'seal' must be related to Akk. *kanīku* 'sealed document'. According to Diakonoff (1985: 599), the difference between initial *k-* and final *-k^c* points to an intermediary Hu. *kanikki. It is not clear how this solves the problem, since there is no evidence for a particular treatment of geminates in Hurro-Urartian borrowings. More importantly, to explain the syncope of the first vowel, Armenian requires an input form **kinik^{(h)}V-* or **kunik^{(h)}V-*, with a different vowel in the first syllable, which cannot be accounted for by Hurrian intermediation.

II 44. *հուղկահար(ու) howłkahar*(*ow*) (*a*) 'robber, highwayman', assumed to be a late derivation from *howłk** 'wagon'.[9] Simon (2013: 105) rejects a proposal that *howłk** is a borrowing from Hit. *ḫuluganni-* 'wagon', but proposes that the Armenian word could have been borrowed from Hu. *ḫulug(*a*)- which also served as a source for the Hittite word. However, this established loanwords show the substitution *ḫ* → *x*. Moreover, it is to be expected that trisyllabic *ḫuluga or *ḫulugi* would have become paroxytone in Armenian, and thus yielded *xłowg or *xłowk* after the syncope and vowel weakening.

II 45. *ներ nêr* (*i*) 'sister-in-law' ← Hu. *nera* 'mother' (Łap^c-anc^cyan 1951: 582–3, Greppin 1982: 145) The Hurrian word is usually considered a derivation of *ne/ir-* 'good' (BGH 275). The semantic shift 'mother' > 'sister-in-law' is unlikely and the substitution *e* → *ê* (originally a diphthong *ei) is not accounted for. Despite several

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[9]There is no way to confirm the meaning of *howłk**. The meaning may also have been 'road', cf. HAB III: 121, where the parallel NP *rāhzan* 'robber' from *rāh* 'road' is offered.

formal uncertainties, the Armenian word is usually assumed to continue PIE *(h_1)i̯enh₂tér (cf. Lat. *ianitrices*, Skt. *yātar-* 'sister-in-law') (Olsen 1999: 190–1, EDA 503–5; more sceptical Kölligan 2012: 142–4).

II 46. *տոլի* *toli* (*ea*) 'grapevine' (var. *towyli*) ← Ur. *uduli*, *uldu* 'vineyard' (Łapᶜancᶜyan 1961: 137, Bănăţeanu 1962: 270). These forms may ultimately be connected, as they seem to reflect the same *Wanderwort*, cf. also Udi *tul* 'grape', Arab. *davāli* 'a kind of grape' (HAB IV: 416), but a direct loan from Urartian is unlikely due to the irregular sound substitution *d* → *t*.

II 47. *շերտ* *šert* (*i*) 'woodchip, splinter' ← Ur. *šer(i)du-* "cleave" (Łapᶜancᶜyan 1961: 136). The substitution *š* → *š* is unexpected (cf. e.g. *san*, II 7), and the meaning of the Urartian word is rather 'conceal' vel sim. (Salvini 2018: 412). The Armenian word might reflect *sk(H)ed-r(i)-* (cf. Li. *skedervà* 'splinter' and perhaps Arm. *cᶜtem* 'to cut, scratch'), although the change of PIE *sk(H)-* > Arm. *š-* is controversial (see IEW 919, Olsen 1999: 91, EDA 629).

II 48. *ողջ* *olǰ* 'whole, healthy' ← Ur. *ulgu** 'life' (Greppin 1982: 72). As observed by Simon (2023: 67), the Urartian form *ulguše* 'life' is only attested with the spelling ⟨gu⟩, which renders the required phonological interpretation **/oljo/ impossible. The Armenian word must reflect PIE *sol-i̯o-* 'whole', cf. Skt. *sárva-* 'whole' < *sol-u̯o-* (EDA 531).

II 49. *ուրու* *owrow* (*a*) 'vision, illusion' ← Ur. *uruli* (Łapᶜancᶜyan 1961: 138–9). The equation is based on an obsolete interpretation of the Urartian word, which is a form of the verb *uru-* 'dig out, excavate' (see now Salvini 2018: 423).

II 50. *պախրէ* *paxrē* (*i*) 'cattle, provisions, money' (dial. 'ox') ← Ur. ᴳᵁ⁴*paḫini* 'cattle' (Łapᶜancᶜyan 1961: 135). The assumed suffix *-rē* (as if < *-rei̯*) cannot be equated with any Hurro-Urartian derivational suffixes. The Armenian form, and especially the variant *paxray*, are closer to Syr. *baqrā* 'flock' (cf. HAB IV: 7), but the direct source of these words remains unidentified.

II 51. *սէր* *sêr* (*o*) 'love, affection' ← Hu. *še/ir-* 'pleasant' (Łapᶜancᶜyan 1951: 594–5). The Armenian word rather reflects *ḱei-ro-* or *ḱei-ue-ro-*, cf. Skt. *śeva-* 'dear' (Olsen 1999: 30–1).

II 52. *սուր* sowr (*o*) 'sword, knife; sharp, acute' ← Ur. ^(GIŠ)*šuri*
'spear' (Bănăţeanu 1962: 268–9, Greppin 1991: 726, Arutjunjan 2001:
465, Yakubovich 2016a: 158). The Urartian word is cognate with Hu.
šauri 'weapon'. While the equation of the Urartian and Armenian
words appears superficially satisfactory (despite the slight semantic
disagreement), the Armenian word can also reflect PIE *$\hat{k}eh_3ro$-,
cf. Lat. *cōs, cōtis* 'whetstone', YAv. *saēni-* 'point', from the root 'to
sharpen' (HAB IV: 254, Olsen 1999: 55, LIV² 319–20). This etymo-
logy better accounts for the Arm. *o*-stem, as well as the adjectival
meaning 'sharp', which is unlikely to be secondary to 'sword'. A
borrowing from Armenian to Urartian is excluded by the existence
of a Hurrian cognate.

II 53. *սերկեւիլ* serkewil (*i*) 'quince' may be related to Akk. *sapar-
gillu, sapurgillu, supurgillu* 'quince'. This is obviously a foreign word,
but not the immediate source for Armenian. Diakonoff (1985: 599b)
and Greppin (2011: 294) speculate that the immediate donor of this
word was Hurro-Urartian, but this is impossible to substantiate.

II 54. *տարմաջուր* tarmaǰowr (*o*) is ostensibly a compound of
tarm* 'flock of birds' and *ǰowr* 'water'. It is a hapax in the *Geography*
by Vardan Arewelc^ci, where it is described as a flowing water, which
is always followed by birds who eat locusts (HAB IV: 387). Greppin
(1990–1991: 19) suggests that the *tarm* that appears in this compound
is in fact an etymologically distinct word, which is borrowed from
Hu. *tarmane* or Ur. *tarmani* 'source, spring'. The original meaning of
tarmaǰowr would thus be 'spring water', and the meaning in Vardan
would be the result of folk etymology (cf. Mahé 1990–1991: 26–7, EDA
608 fn. 128). This assumption remains highly conjectural in light of
the poor attestation of this word and lack of a better understanding
of the underlying mythological motives. Hrach Martirosyan (p.c.)
suggests a relationship with NP *tarmašīr* 'a species of elixir', MP
*tarmašīr (→ Syr. *tarmašir, tarmašig* 'dittany'; Ciancaglini 2008: 186–
7), which, again, would require the assumption of folk etymology.
For further discussion of *tarm** 'flock, swarm; starling' and its deriv-
atives, see EDA 607–8.[10]

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[10]In toponyms, Arm. *t*- usually replaces Ur. *ṭ*-, e.g. *Tosp* ← ^{URU}*Ṭušpa*-. If the Urar-
tian opposition *ṭ* : *t* reflects a contrast between glottalized and aspirated stops (cf.
Wilhelm 2008: 107–8), we should expect Ur. *t*- to be replaced by Arm. *t^c*-. I thus
wonder whether Arm. *t^carm* 'fresh' (a late word, cf. Norayr 566–7) is borrowed from

II 55. ւոււդւո *towłt* (*o*) 'marshmallow, althea' ← Hu. *tuldu* (Diakonoff 1985: 599–600). This word is a hapax in an Akkadian wordlist, where it is glossed *ladīru*. The Akkadian gloss was assumed by Diakonoff to designate some medicinal plant, but actually means 'worm, maggot' (CAD XVIII 467, Simon 2023: 79)

2.2 Results

The most probable loanwords from Hurrian or Urartian are listed in Table 2.1. Uncertain and/or conjectural loanwords are listed in Table 2.2. For further discussion of this material, see § 2.4. It is clear from the results of this survey that the number of Hurro-Urartian loanwords in Armenian is relatively small. Only eight words can be said to be of Hurro-Urartian origin with sufficient confidence. An additional eleven words cannot be excluded to be Hurro-Urartian loanwords, but neither can they be positively confirmed. The limited size of both the Hurrian and Urartian corpora means that the actual number of loanwords may have been higher, so that undetected Hurro-Urartian loanwords may still exist in the Armenian lexicon. Moreover, it is probably reasonable to assume that some loanwords were replaced by even younger loanwords prior to the attestation of Armenian.

Armenian	Hurrian/Urartian	Lemma
ałiws 'brick'	Hu. *alipši* 'mudbrick'	II 1
darbin 'blacksmith'	Ur. *dabrini 'blacksmith'	II 2, IV 28
xałoł 'grape'	Ur. *ḫaluli* 'grape' or Hu. *ḫaluli* 'id.'	II 3
xarxarem 'destroy'	Ur. *ḫarḫar-* 'destroy'	II 4
xnjor 'apple'	Hu. *ḫinzuri* 'apple'	II 5
pełem 'dig', *peł 'canal'	Ur. *pili* 'canal'	II 6
san 'kettle'	Ur. *šani* 'a container	II 7
pᶜox(-) 'loan, exchange'	Ur. *puḫ-* 'change, alter'	II 8

Table 2.1: Hurro-Urartian loanwords in Armenian

Ur. *tarma**, assuming that *tarma-ni* is a nominalized adjective with the suffix *-ni* (cf. Salvini 2018: 488). Semantically, this obviously requires a few unsupported assumptions. J̌ahowkyan (1987: 425) assumes a borrowing from Armenian to Urartian, but the Indo-European background of Arm. *tᶜarm* is not clear (?< **tr-mo-*, traditionally compared with Skt. *táruṇa-* 'young, fresh', Gk. τέρην 'tender'; HAB II: 161).

Armenian	Hurrian/Urartian	Lemma
ałaxin 'maidservant'	Hu. **alla-ḫḫi-nni* 'belonging to the lord'	II 9
anag 'tin'	Hu. **anagi* 'id.'	II 10
ananowx 'mint'	Hu./Ur. **ananuḫḫi*	II 11
babay 'hill' (?)	Ur. *baba** 'mountain'	II 12
don 'a kind of bread'	Ur. **doni* 'id.'	II 13
cic 'breast'	Hu. *zizzi* 'id.'	II 14
maxr 'pine'	Hu. *maḫri* 'id.'	II 15
nowṙn 'pomegranate'	Hu. *nuran** 'id.'	II 16
owłt 'camel'	Ur. **ulṭu* 'id.'	II 17
salor 'plum'	Ur. **salor-* 'id.'	II 18
towpᶜ 'box'	Hu./Ur. **tup(p)-* 'id.'	II 19

Table 2.2: Uncertain Hurro-Urartian loanwords in Armenian

2.3 Armenian loanwords in Urartian?

A complete critical revision of suggested Armenian loanwords in Urartian is outside the scope of this work (see Simon 2023 for a comprehensive treatment). Nevertheless, I shall present four of the most frequently cited and strongest cases below. While I maintain that these four words are possible loans from Armenian, I fundamentally agree with the interim conclusion of Simon (2023: 83): "there are no assured Armenian loans in Urartian". That said, I also agree with the observation that there is no *a priori* reason to reject the possibility of such loanwords (Simon 2023: 80 fn. 168, *contra* Schmitt 2012: 126). Still, if they exist, the amount of Armenian loans in Urartian is clearly smaller than the amount of Hurro-Urartian loans in Armenian.

II 56. Ur. *abilidu-* 'to gather' ← Arm. *y-awelowm* 'to add, increase', *aweli* 'more'. Taken as a loan from Urartian to Armenian by Łapᶜ-ancᶜyan (Łapᶜancᶜyan 1940: 38, 1961: 132–3). He rejects the established comparison with Gk. ὀφέλλω 'increase, sweep' and ὀφέλμα 'broom', of which the latter has a semantic counterpart in Arm. *awel* 'broom' (see Clackson 1994: 156–8), as he claims that the expected form would be *obel or *abel. This is, however, clearly false as the reflex of intervocalic *-b^h- is -*w*-. In view of the impeccable Greek-Armenian root comparison *h_3b^hel- 'sweep, increase', it is unlikely that Armenian borrowed any of these forms from Urartian.

It remains possible that the Urartian verb is somehow a borrowing from Armenian, but the substitution of Arm. *e* by Ur. *i* is unexplained, which could suggest that *-il-* rather represents an Urartian verbal suffix (cf. Simon 2023: 80 with references).

II 57. Ur. *amani* 'pot, container (?)' ← *aman* (*o/a*) 'vase, pot'. The meaning of the Urartian word is uncertain (see Arutjunjan 2001: 434). The Armenian word is usually compared to Skt. *ámatram* 'drinking bowl' and Gk. ἄμη 'shovel, pail' (Hübschmann 1897: 416). This allows for a possible reconstruction *$*h_2emH$-no-* or *$*h_2em$-ṇno-* (Olsen 1999: 296). Since this etymology is not completely certain, we may also be dealing with an Urartian loanword into Armenian, but the equation of these words remains uncertain as long as the meaning of the Urartian word cannot be verified.

II 58. Ur. *burgana** (always PL *burgana-ni*) 'some kind of building'[11] ← Arm. *bowrgn* (*-ownkᶜ, -ancᶜ*) 'tower, pyramid' < *burgan-*. This equation is often considered to reflect a borrowing in the opposite direction, from Urartian to Armenian (e.g. J̌ahowkyan 1987: 430–2). However, the expected Armenian reflex would be ***burgan > brgan* (Perikhanian *apud* Diakonoff 1985: 602b).[12] Moreover, it seems very likely that Arm. *bowrgn* is somehow connected to Gk. πύργος 'tower', suggesting that it predates Armenian contact with Urartian (see IV 20 for further discussion). All in all, this means that if the Urartian and Armenian words are related, the donor language was most likely Armenian (cf. also Diakonoff 1985: 602b, EDA 246 s.v. *durgn*). Still, the comparison remains uncertain because the meaning of Ur. *burgana* cannot be established with certainty. Despite the apparent

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[11] The meaning is very unclear, but appears at least to refer to an edifice of importance since it is relatively frequent (15 times in total) in the inscriptions commemorating the achievements of Urartian kings. Salvini (2018: 384) assumes we are dealing with a construction meant for sacrificial animals ("uno stabilimento dove si raccolgono gli animali destinati al sacrificio"), i.e. a kind of pen. Diakonoff & Starostin (1986: 99), in an addendum, corrects the meaning from 'tower' to 'column, pillar' but do not specify what this is based on. It is possible that they assume the *burgana** to be a kind of stela demarcating the territory belonging to Urartu. An inscription of Išpuini (CTU A 03-11, l. 20–22) tells of *burganani* that were built next to a gate (KÁ) of the god Ḫaldi which would also harmonize with a meaning 'tower'.

[12] We might imagine that, at a later stage, such a form would have been analyzed as a GEN-DAT-LOC.SG of an *n*-stem and given rise to a new, back-formed nominative. In such a case, however, I assume that oblique *-an-* would have prevailed across the entire paradigm. Instead we find NOM.PL *brgownkᶜ*, ACC.PL *brgowns*.

lack of an attested cognate in Hurrian, it cannot be excluded that the Urartian word is native, in which case its similarity to the Armenian form would be due to chance.

II 59. Ur. *qaburza-ni-li* (DEF.PL) 'bridges'. Appears once in an inscription from Bulutpınar, East Turkey (Çavuşoğlu, Işik & Salvini 2010). The stem *qaburza-* would match PA **kaburǰa-*, cf. Arm. *kamowrǰ* 'bridge', Gk. γέφῡρα 'bridge; beam; dam, dyke' (Petrosyan *apud* EDA 353).[13] This would mean that the *-m-* of the Armenian form is secondary. For further discussion, see IV 46.

2.4   Analysis

The attestation of the Urartian language ends around 700 BCE. Thus, we would *a priori* expect that the contact between Armenian and Urartian had ended at this point. Naturally, it is impossible to exclude that Urartian, Hurrian (or unknown cognate languages) were spoken for some time after the end of their textual transmission (cf. Simon 2023: 68). Nevertheless, the small corpus established in the previous allows us to date the Armenian-Hurro-Urartian contact prior to the following sound changes:

- · The loss of final syllables is seen in all of the most probable loanwords from Hurro-Urartian, e.g. *xałoł* (II 3).
- · The reduction of pretonic *i and *u, cf. *xnjor* (II 5), perhaps *nowṙn* (II 16). No evidence for diphthongs.
- · The metathesis of the clusters *TR and *DR, cf. *darbin* (II 2).
- · The lenition of *VpC > *VwC*. The only example in this corpus is *ałiws* (II 1), but note the TN Ur. *Zabaḫae* → Arm. *J̌avax-kᶜ* (Diakonoff 1985: 601).

Especially the latter two sound changes are relevant, as these must have stopped operating before the first Iranian loanwords enter Armenian. A reasonable *terminus post quem* for the onset of Iranian-Armenian language contact is the expansion of the Medes into the Armenian Highland in the seventh century BCE, and certainly, the establishment of the Achaemenid Empire in

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[13] Additional evidence for the identification, at least in some cases, of the Urartian consonant *z* with /dʒ/ comes from the placename *Zabaḫae* reflected in Arm. *J̌avaxkᶜ* (Diakonoff 1971: 48 fn. 46).

550 BCE. This approximate dating is consistent with the *a priori* assumption that Urartian-Armenian contact had ended at this point. With regard to most of the other sound changes between PIE and Armenian, it can be surmised that they had taken place at this point. However, the material yields very little positive evidence for this. On the basis of Arm. *don* 'bread' (II 13), it appears that the raising of **oN > uN* (and by extension, probably **eN > iN*) had already taken place. While this etymology admittedly comes with caveats, additional support for the chronology comes from the TN Ur. *Quṭumu-* > Arm. *Kotom*.

2.4.1   The chronology of the sound shift

The Armenian sound shift is of crucial interest to the chronology of sound changes in relation to the Armenian-Hurro-Urartian language contact. It is usually assumed that the sound shift had ended when the first Hurro-Urartian words were borrowed by Armenian (thus Diakonoff 1985). Indeed, this is the assumption that best fits the data in our corpus. Simon (2023) takes a different position, namely that the entire period of contact with Hurrian and Urartian predated, at least, the Armenian shift of *mediae* to *tenues*. This view is solely based on another assumption – supported by many previous scholars – that the earliest Iranian borrowings undergo this sound change as well, and that the first Iranian loans cannot be older than ca. 600 BCE. However, the actual evidence for this claim is questionable. Arm. *partēz* 'garden' appears to be a loan from an Old NW Iranian form, matching Av. *pairi-daēza-* 'enclosure, garden', NP *pālēz* 'orchard'. This *Paradebeispiel* has been widely cited since Meillet (1911: 250). It is remarkable, however, that the initial *p-* did not shift to ***h-* in this word. Therefore, it is necessary to assume that the change of *mediae* to *tenues* was chronologically distinct from the change of *tenues* to *aspiratae* (Lamberterie 1978: 249–50). To be sure, it is conceivable that these sound changes were not entirely contemporaneous, and at any rate, T > TA cannot be later than M > T (since T and TA do not merge). On the other hand, it is remarkable that in this and most other examples of early loanwords from this period, the affected stop also follows a resonant, cf. *xałtikᶜ* 'Chaldeans' against Gk. χάλδοι, OGe. *kaldev-el-* (Meillet 1911: 250); and especially the variant forms *əngoyz*, *ənkoyz* 'walnut' (← Ir. **ni-gauza-* → Ge. *nigoz-* 'walnut'; Gippert 1993: 155–66). For that

reason, we may suspect that it is exactly the resonant that caused the ostensible change of voiced to voiceless stop (Vogt 1938: 329, Gippert 2005: 155).[14]

Another word that is commonly assumed to precede the Armenian sound shift is *arcatᶜ* 'silver' if from Ir. **ardᶻata-* (< PIE **h₂erǵnto-*). This word would observe a change of the *media *j* to the *tenuis c* (Lamberterie 1978: 245–51). However, we must also account for a change of **-t-* to *-tᶜ*, which requires that old intervocalic **-t-* was already at a stage **-ϑ-* or *-y-* but initial **t* had not yet become *tᶜ-*. See now Kümmel (2017) on the possibilty Arm. *arcatᶜ* is inherited from PIE **h₂rǵnto-* after all. Finally, Arm. *tᶜšnami* 'enemy' (← **dušman-*) and *tᶜšowaṙ* 'miserable' (← **dušfar-*) are irrelevant to the question, because the change of **d-* to aspirated (!) *tᶜ-* is simply caused by voicing assimilation, which followed the weakening of pretonic **u* (cf. *kᶜsan* 'twenty' < **gisan* < **u̯iḱmti*).[15]

As additional evidence for the claim that the influx of Hurro-Urartian loanwords preceded the Armenian sound shift, Simon (2023: 68) adduces Arm. *pᶜoxem* 'loan, exhange' ← Ur. *puḫ-* 'change', as well as the toponym *Copᶜ-kᶜ* ← Ur. *Ṣupa*, which he considers to show a change of **p* to *pᶜ*. Consequently, he considers an otherwise compelling loanword like Arm. *peł-em* 'dig' ← Ur. *pili* 'canal' to be uncertain. Against these claims, we must note that the outcome of initial PIE **p-* is always Arm. *h-* or ∅- (with **pᶜ-* or **f-* being merely an intermediate stage). This means that the postulated change of **p > pᶜ* in these examples would have to be independent of the sound shift *per se*, and thus appears illusory. A different explanation is necessary for the ostensibly divergent treatments of Urartian ⟨p⟩. We must note that Urartian employs the Akkadian so-called "emphatic" signs ⟨ṭ⟩ and ⟨q⟩ to represent a particular series of stops. Although we cannot be certain about their realization, they are evidently distinct from the phonemes written ⟨t⟩ — ⟨d⟩ and ⟨k⟩ — ⟨g⟩

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[14] I wonder if the substitution **RD → RT* was considered more appropriate because voiced stops after resonants were perceived as aspirated at this time. The assumption that the old cluster **RT* went through **RTʰ > *RDʰ*, before becoming *RD*, has been used to explain why it did not coalesce with **RD > RT* (Lamberterie 1973–1974).

[15] Olsen (1999) suggests three additional pre-sound shift loans, which I must discard in light of the discussion above and due to the inexact semantic matches: 1. Arm. *parc* 'proud' ← Ir. **bardz-* 'high' (1999: 857, 904); 2. *atean* 'court, council; time' ← a derivative of **√had-* 'sit' (1999: 959); and 3. *ciran* 'apricot', cf. Av. *zaraniia-* 'gold' (1999: 450). The latter is better understood as a *Wanderwort* (see p. 87).

respectively, and thus represent a third (perhaps glottalized) series of stops (Wilhelm 2008: 107–8). As for labial stops, however, Akkadian does not have an emphatic variant of /p/, so only the signs ⟨p⟩ and ⟨b⟩ are found. Unless we make the *a priori* unlikely assumption of an identical gap in the Urartian stop system, it is likely that the grapheme ⟨p⟩ was used to represent at least two phonemes, e.g. a glottalized /p'/ and a plain or aspirated labial stop /p^(h)/. I assume that it is this contrast that gave rise to Arm. *pełem* and *p^cox*, respectively. With these examples in mind, we can also deduce that Armenian-Hurro-Urartian contact took place *after* the lenition of initial *p^h- (< PIE *p-) > h-, and the emergence of a new phoneme p^c from the inherited sequences *pH-, *sp- (?) etc.

I conclude that the sound shift had been completed before the onset of Armenian contact with Hurro-Urartian.

2.4.2 Semantics

A semantic analysis of the loanwords found to be probable (cf. § 2.1.1) or uncertain/conjectural (cf. § 2.1.2) supports a hypothesis of a brief and superficial contact situation. With the exception of *p^cox* 'exchange', these lexemes can be categorized in the broader category of "culture words", with a more detailed classification as follows (the most probable cases are boldface).

- Technical terms (4–7): **ałiws 'brick'**, **pełem 'dig, *canal'** (architectural); **darbin 'smith'**, *anag* 'tin' (metallurgical), **san 'kettle'**, *don* 'bread' (cooking); *towp^c* 'box'.
- Flora (2–7): **xałoł 'grape'**, **xnjor 'apple'**, *ananowx* 'mint', *maxr* 'pine', *nowṙn* 'pomegranate', *salor* 'plum'.
- Verbs (2): **xarxarem 'destroy'**, *p^cox(-)* 'exchange'.
- The body and the natural world? (0–3): *babay* 'hill', *caṙ* 'tree', *cic* 'breast'.
- Social stratification? (0–2): *ałaxin* 'maidservant', *caṙay* 'slave'.
- Fauna? (0–1): *owłt* 'camel'.

This indicates a contact situation in which Urartian constituted a relatively weak superstratum in relation to Armenian. It introduced words denoting novel concepts, but did not deeply influence the basic Armenian lexicon. If that were true, we would expect to

find words belonging to the basic vocabulary, as well as more adjectives, verbs, and function words, as in the case of the later Iranian superstratum. These observations harmonize with the prevailing view (e.g. Zimansky 2001) that the Urartian government was a short-lived administration imposed upon a multilingual and multicultural population. Finally, this is supported by the fact that we find only very few, if any, Armenian loanwords in Urartian.

2.4.3 Context

We can mostly speculate regarding the duration and exact nature of this contact. A key question in this regard is whether Armenian ever had any direct contact with Hurrian, or whether Armenian words with matches only in Hurrian (in particular *aṱiws*, II 1; *darbin*, II 2; and *xnjor*, II 5) were in fact mediated through Urartian. In the case of *darbin*, it is clear that Urartian must have been the source language, as shown by the voicing of the initial consonant, but in the other two cases, the Hurrian and Urartian forms would most likely have been identical. Although it is an *argumentum ex silentio*, the fact that no historic evidence supports the presence of Armenian speakers close to Hurrian speakers suggests that also these words are loans from Urartian (cf. Greppin 1991). Indeed, we find no linguistic evidence for a dialectal or chronological stratification of the Hurro-Urartian loans. By all accounts, the duration of contact may thus have been relatively brief.