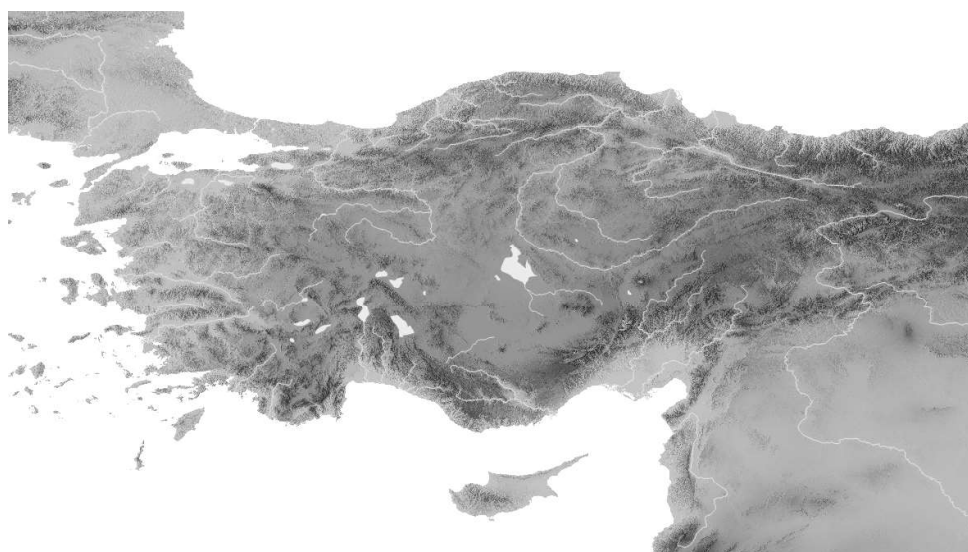


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Greek Loanwords in some Aramaic and Armenian transcriptions: graphematic considerations on the ‘spiritus asper’

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ABSTRACT

After introducing the problem of the phonological status and graphic notation of the spiritus asper within the Greek tradition, this paper aims at dealing with the east- and southward spread of the spiritus asper through different graphic traditions of adaptation of Greek loanwords in Aramaic and Syriac on the one hand, and in Armenian on the other. The materials here discussed are based on Wasserstein (1993), who studied some examples of Aramaic transcriptions of Greek loanwords, and Butts (2016b, 2016a), who studied the phonological integration of such loans in Syriac, where the Greek spiritus asper is mostly written as an /h/, e.g., ἡνιόχος (heniokhos) = hnywk’ ‘charioteer’. Furthermore, Harviainen (1976) offered a systematic study on the reflexes of Greek /h/ in several foreign languages, including the seven Armenian loans in which /h/ is preserved and represented with /h/, (e.g. ՝ղղ = hiut).

1. THE SPIRITUS ASPER

With the term *spiritus asper* I refer to a specific graphic notation of a phoneme which occurred in Ancient Greek dialects but partially disappeared in its phonological history first in some regions and finally everywhere. The discussion behind the symbolic label of *spiritus asper* concerns the problematic relationship between graphematic representation and phonological status on the one side and, on the other, their history within the Greek tradition and in connection with the spread of the Greek alphabet and the cultural relations between Greeks and their neighbors.

1.1. The aspiration in the Ancient Greek phonetics¹

Greek introduced the aspiration at the beginning of a word because of the phonetic substitution of some Indo-European phonemes.

Indo-European *yV- and *sV- were replaced by /h/, while clusters such as *sw- and *sy- did the same probably already in Proto-Greek (in some dialects the result of such substitution is /ø/). The case of Mycenaean is impossible to assess, because the writing system could not signal any aspiration.²

The two possible outcomes, /h/ or /ø/, constitute one of the main phonological isoglosses for the Ancient Greek dialectology: the distinction between psilotic (as sign of absence of aspiration, smoothing, smoot breathing), and non-psilotic (as sign of the conservation of aspiration) dialects, as illustrated in **Fig. 1**.

1.2. The Ancient Greek script tradition and the phonological status of aspiration

Aspiration (rough breathing), the traditional name given to what was probably a voiceless

¹ This issue is partially tackled in COTTICELLI KURRAS - COTUGNO (forth.), especially from the perspective of the diffusion of the notation of the aspiration in Western Europe through the Latin alphabet.

² According to LAMBERTERIE (2012, with further bibliography), also in the Greek of the 2nd millennium BC, in Mycenaean Greek, and even in the Homeric poems, there are traces of a /h/ presenting the behavior of a classic consonant (the evidence is signaled by the lack of shortening or contraction of contiguous vowels).

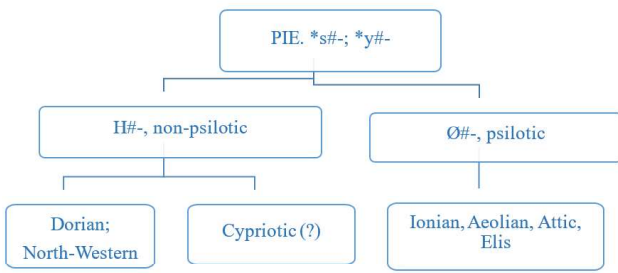


Fig. 1. Distribution of the aspiration in the Greek dialects of the I millennium BC.

glottal stop, could be written differently in the different varieties of the Greek writing system.³ The Semitic letter used to render a glottal (or similar) sound, <H>, had also the value of a consonant in most Greek traditions.

The following picture, taken from Jeffery (1990²: 28), shows its different shapes, from the original Phoenician to the Greek ones (**Fig. 2**).

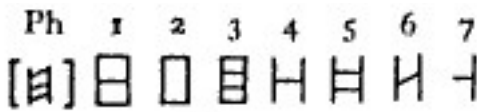


FIG. 8

Fig. 2. The different signs for aspiration used in the Greek dialects, from JEFFERY 1990²: 28.

However, to date, today scholars have offered different graphematic hypotheses to interpret the intriguing epigraphic data according to the phonological outcomes of the Greek dialects attested in the 1st millennium (**Fig. 3**).⁴

A detailed discussion of this aspect, however, is not particularly relevant for the language contact relationships that we want to examine in

3 See the recent discussion in COTTICELLI KURRAS - COTUGNO (forth.).

4 A more recent paper by JATTEAU (2016) and her (unpublished) PhD thesis give an overview of the different positions in the scholarship. To my knowledge, the last position is that of PROBERT (2015) who interprets the sign of *spiritus asper* as a super-segmental one, and is not included in Jatteau's overview.

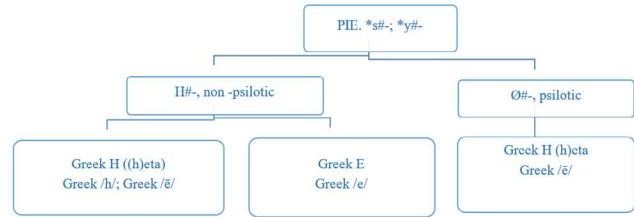


Fig. 3. Distribution of the sign for aspiration or for vowel /e/ and /ē/ in the Greek dialects.

this paper.⁵ The issue about the development of the phonological status of the aspiration in Greek would, of course, be the definition of moment and place in which the corresponding phoneme went lost, since traces remain and different were given.

It is however worth mentioning that, after the loss of aspiration, which seems to have begun in specific (Eastern) dialects,⁶ in order to unify the different traditions, a tendency emerged towards using the sign H only to write the vowel /ē/.⁷ As a consequence, aspiration had to be represented by the other signs, such as ^L or ^F, or again [└], which were graphic reductions of the original shape of H.⁸ The following Figure 4 describes the distribution of all the signs used for aspiration (**Fig. 4**).

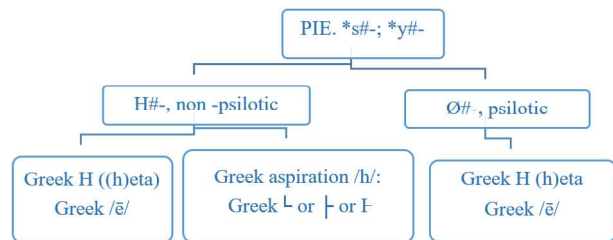


Fig. 4. Distribution of all the signs for aspiration among the Ancient Greek dialects.

5 For completeness I refer, among others, to SCHWYZER (1939: 150ff.), SCHMITT (1952), JATTEAU (2016), COTTICELLI KURRAS - COTUGNO (in press). Moreover, the schematized distribution with the sign collection is provided by JEFFERY (1990²).

6 See JEFFERY (1990²), and JATTEAU (2016: 261ff.).

1.3. Chronology of the loss of spiritus asper in Greek

It was the Alexandrian grammarians (3rd cent. BC, especially Aristophanes of Byzantium, according to the tradition), who introduced the marks employed for the *spiritus asper* and the word accent. The shape on the *papyri* was based on the \perp variant already mentioned above.

The goal of the diacritical signs of the Alexandrian grammarians was to disambiguate homophonous words, so it necessarily had a functional, distinctive character, (e.g. ὄρος vs. ὄροϛ; τί vs. τι) but it was not used in a systematic fashion until the Byzantine age. During 1st-2nd centuries AD a list of words that were expected to contain a *spiritus* was developed for school teaching. Other signs, however, were developed in relationship with the glossing of unusual words (i. e. Homer, Aeolian lyrics). These practices indicate a strong linguistic and metalinguistic awareness, which included a clear recognition of the weakening or, possibly, even the disappearance of the aspiration.⁹ Though *spiritus asper* has become a historical relic in the writing notation, the question on its phonetic value remains.¹⁰

Scholars have proposed different dates for the disappearance of the aspirated pronunciation, ranging from the Hellenistic Greek to the 2nd

century AD, or even later as the reminiscence of “a scholastic tradition” and well into the 4th - 5th century, but in this case only in the learned language of conversation among scholars. Some even proposed that it survived until the beginning of the Middle Ages.

Such a discussion attests to the current disagreement concerning the date of the loss of the aspiration and its concrete phonetic value in later Greek.

2. THE SPREAD OF *SPIRITUS ASPER* AND THE ROLE OF LOANWORDS IN RELATION TO THE *ASPIRATION*

For all of the aforementioned reasons, the study of Greek loanwords in the neighboring languages can help to establish the time of adoption – if the texts are dated – and to infer the existence of aspiration in that period of the history of the Greek language. The graphic notation regards not only proper aspiration (rough breathing; /h/ phoneme) but also the rendering of the word-initial /rho/ (*spiritus asper* above the sign for /r/) and some other consonantal groups containing an aspiration (/th/, /ph/ /kh/ and so on).¹¹

In this paper, I focus on the loanwords derived from Greek words with the *spiritus asper* in Syriac, Aramaic, and Armenian.

2.1 Methodology and state of the art

I will begin with some methodological considerations regarding the analysis to be

¹¹ A similar phenomenon took place also in Western parts of Europe, since the most writing systems originated from the Latin alphabet, which derived from the Greek one directly or via Etruscans. The graphic representation of such a phoneme happened through the spread of /h/ in the northwestern European cultures. Greek /h/ as aspiration sign was written using the Latin letter /h/ in the loanwords both in the initial and the medial position, and the Greek aspirated consonants were also written with /h/: /ch/, /ph/, /rh/. For a detailed discussion of the Latin and Italic evidence I refer to COTTICELLI KURRAS – COTUGNO (forth.).

⁷ The intended sign is the following: \perp . Moreover, RODNEY AST (2017) proposes also a chronological distribution of the three different forms of *Spiritus asper* as parts of H: \perp > \perp or > \perp . Moreover, the Ionians re-used <H> to represent the long open /ē:/ [ɛ:].

⁸ The Latin alphabet also retained the use of <H> as a symbol for /h/, as a historical and etymological writing use, or as a sign for foreign (mostly Greek) loans, as well the subsequent writing systems derived from the Latin one.

⁹ The sign of aspiration, with its phonetic value, also occurred in sign combinations, as is the case for the different strategies used to write /ph/ and /kh/ (omission of aspiration in Crete, where <Π>, <K>, <Q> were used instead of Φ, X, or development of pairs such as <ΠH>, <KH>, <QH> in other islands).

¹⁰ For a detailed discussion of the chronology proposed by the scholarship, see COTTICELLI KURRAS – COTUGNO (forth.).

presented. As stated above, Greek loanwords in other languages are analyzed for the purpose of dating more exactly the development of aspiration in the very Greek language. The borrowing languages have been treated first by Schwyzer (1939: 150-165) in the interesting chapter *Die Nebenüberlieferung des Griechischen*.

Among the various languages listed by Schwyzer (1939: 150) for their relationships with Greek starting from the Hellenistic time, there are Semitic, Iranian, Egyptian, Oscan, Latin, Gallian, and, as a result of the spread of Christianity, Syriac, Coptic, Ethiopian, Gothic, Armenian and Old Church Slavonic. In this paper, only Aramaic, Syriac and Armenian will be discussed.¹²

From a methodological angle, it is clear that some key points are decisive and must be taken into consideration: the number of loanwords at our disposal, the channels of their penetration in the target languages (direct or indirect, oral or written), the possibility to date the texts, the philological tradition, the stability in the orthographic uses. The history of the traditions shows us that these conditions are not always available and that we have to deal with complex and multilayered literary traditions, with lexica that collect material from various sources and testify to the existence of alternating writing and notations.

3. CASE STUDIES

In recent time, many general articles in the *Encyclopedia of Ancient Greek Language and Linguistics* (2013-2014) dealt with the relations between Greek and other languages. Armenian, Greek and Aramaic, and Syriac.

On the cultural relationships between the Aramaic and the Greek worlds, Bubenik offers a comprehensive panoramic (1989) and (2014: 34-37).

¹² HARVIAINEN (1976: 18ff.), later BUTTS (2016b) also tackled Palmyrene Aramaic. Here I cannot go into detail and deal with other languages, too.

Bubenik highlighted that Biblical Aramaic in the Pre-Hellenistic time shows few loanwords from Greek while later, in the Hellenistic and Roman period, socio-cultural changes took place, carrying to a situation of bi- and trilingualism, and to an increasing transmission of loanwords.

Beside his monography (Butts 2016b), Butts also dedicated a short article specifically to the Greek loanwords in Syriac (2016b: 124-125), noting that there were two channels of transmission into the target language, namely the written and the oral one. The loanwords in both Semitic traditions include personal names and terms belonging to the administrative, juridical and military semantic field.¹³

For Armenian, the classical comprehensive work on historical relationships between Greek and Armenian, with special attention paid to loanwords, is that by Thumb (1900), followed by Clackson (1994) more in general for the relations between Armenian and Greek. Harviainen (1976) concentrated on the problem of the rendering of /rho/ in Armenian, also with respect to the significance of loanwords in attesting the existence of aspiration.

The following map can be useful to localize the different areas mentioned in the following paragraphs (**Fig. 5**).¹⁴

The selected materials presented in the following paragraphs account for Greek words beginning with aspiration + vowel,¹⁵ but occasionally also with *rho*, and the corresponding loans in the target languages.

¹³ See also BROCK 2004.

¹⁴ The map is taken from <https://gedsh.bethmardutho.org/Maps>. The Map has been published as *Map I. Syriac Christianity in the Roman and Sasanian periods*, in BROCK – BUTTS – KIRAZ – VAN ROMPAY (eds) 2011. *Gorgias Encyclopedic Dictionary of the Syriac Heritage* (GEDSH). Piscataway NJ: Gorgias Press. See also FARINA 2020.

¹⁵ It is also worth noting the article by Alonso Déniz. ‘Aspiration’, 2013, last view May 23, 2023. doi: http://dx.doi.org/10.1163/2214-448X_eagll_SIM_00000419.

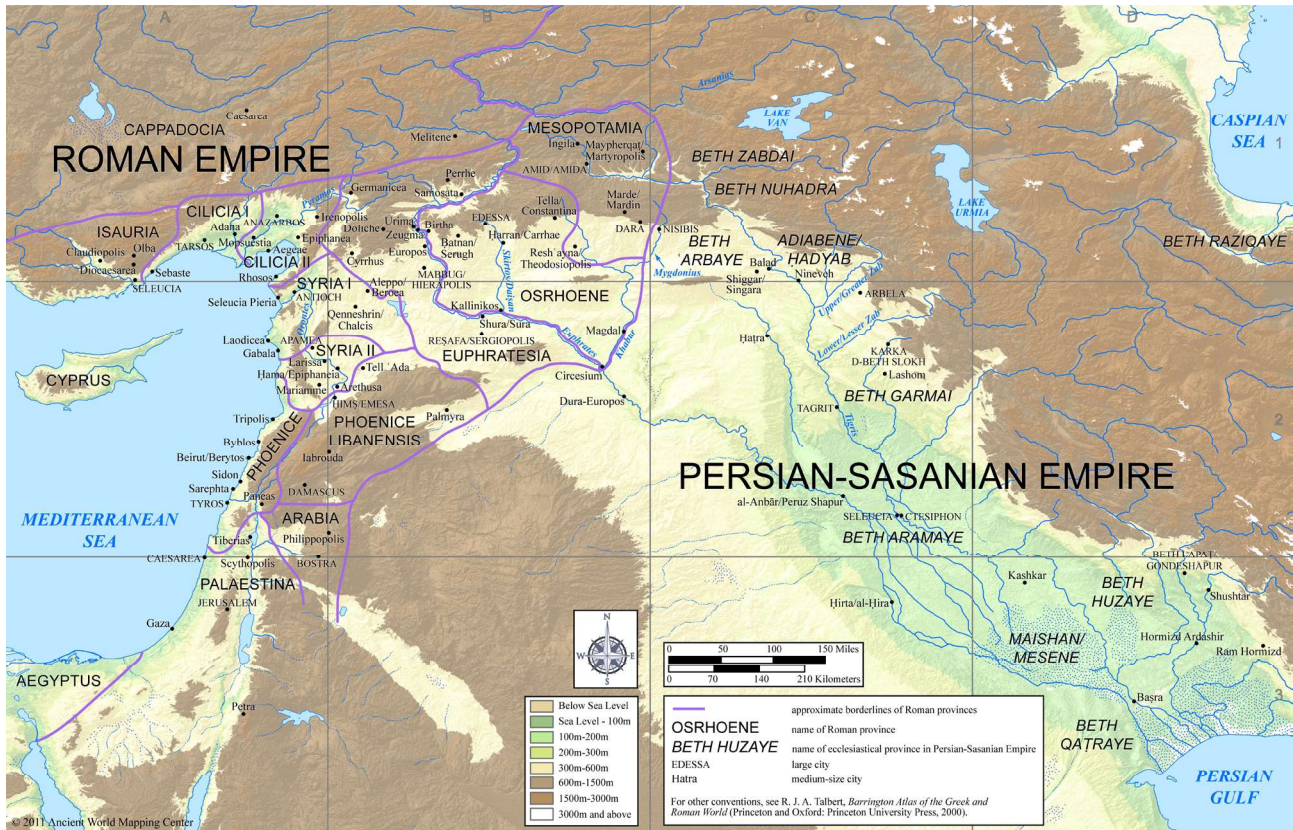


Fig. 5. Syriac Christianity in the Roman and Sasanian periods. Source: <https://gedsh.bethmardutho.org>

3.1 Aramaic

Wasserstein (1993) re-examined some examples of Aramaic transcriptions of Greek loanwords, which had already been analyzed in much earlier works by Kraus (1898-1899) and Payne Smith (1879-1897).¹⁶ Aramaic is a Northwest Semitic language with a very long written tradition since the 11th century BC.¹⁷ After having been lingua franca in the 7th and 6th centuries BCE, it became the official language of the Persian Empire (559–330 BC), where it has been eventually replaced by Greek. The cultural contacts with Greeks increased between late Hellenistic period and the first centuries of the Christian era, as Aramaic was spoken in various local dialects also as a diastatically lower language

variant.¹⁸ Greek loanwords belong to different times, most having entered Aramaic between the 1st century BC and the 1st century AD. The alternation in the orthographic uses in the Aramaic tradition also applies to the different writings of the same Greek phoneme(s). The rendering of the *spiritus asper* makes no exception.¹⁹ Wasserstein (1993: 203f.) claims that in most cases the notation of aspiration is a ‘learned reminiscence’, as in the case of the name Πόμη. Overall, Kraus (1898), Dalman (1905/1960) and Sokolov (1990) list 3000 terms borrowed from Greek during the Hellenistic and Byzantine period.²⁰

18 BUBENIK - VANDERKAM (2001: 178) posit a strong multilingualism and the presence of many bilingual inscriptions in the Hellenistic period as Hellenistic *koiné*, Aramaic and Hebrew have been spoken in all social classes. This situation would have favored the integration of many Greek loans into Aramaic.

19 For a more recent description of the cultural and linguistic situation especially in Judaea, see BUTH-NOTLEY (eds, 2014).

20 These loans occur in Palestinian Talmud, Midrashim and Targumim, written in Hebrew and Aramaic.

16 I would like to thank Margherita Farina for the discussion and advice she gave me regarding paragraphs 3.1-3.2.

17 See WENINGER *et al.* 2011 for a detailed description.

The Greek initial *spiritus asper* corresponded to a voiceless glottal fricative /h/ in Attic Greek, and it is mostly, but not always, represented with /h/ in Aramaic words.²¹ The orthographic situation in the Aramaic tradition is in fact more complicated also because of the lack of proper signs for vowels. For this reason, /h/ also served as a *mater lectionis* for vowels, with a certain degree of instability.

The following material describes, firstly, cases in which the Greek /h/ is rendered correspondently with /h/ in the beginning of the borrowed word; secondly, cases in which there is no /h/ in the same position (zero realization); thirdly, the occurrences of Aramaic /h/ corresponding to Greek *spiritus lenis*; and finally, similar correspondences for medial Greek /h/.

Greek / ^s /	Aramaic initial /h/	Date and sources	Translation
Ἀδριανός	<i>hdryn(ws)</i>	from 130/131	Hadrianos
Ἑλένη			Mother of Monobazos
ἡγεμών /hēgemōn/	<i>hgmwn</i> ¹	Uncertain, Rosenthal (1939)	prefect
Ἡλιόδωρος	<i>hlydrws</i>	192-213	Heliodoros
Ἡρακλῆς	<i>hrql</i>	Uncertain	Herakles
Ἡρμῆς	<i>hrms</i>	160-248	Hermes
ἵππικός	<i>hpk</i> ¹ / <i>hpkws</i>	Rosenthal (1939)	horse
ὑπατικός	<i>hptyq</i> ¹	Rosenthal (1939)	guardian (?)

Tab. 1. Aramaic realization of the combination *spiritus asper* and vowel.

Greek / ^s /	Aramaic voiceless glottal stop /ʔ/	Date	Translation
Lat. <i>Hadrianus</i> (<Ἀδριανός)	<i>ʔdrynws</i> ²²	235/236 (Palmyrene Aramaic)	Hadrian
ὁμολογία	<i>ʔmlyʔ</i>	Uncertain	confession of faith

Tab. 2. Aramaic realization with voiceless glottal of the combination *spiritus asper* and vowel.

Greek / ^s / lenis	Aramaic /h/	Date	Translation
ὀπίτιον	<i>hptyn</i>	Uncertain	centurion's aide

Tab. 3. Aramaic realization of the combination *spiritus lenis* and vowel.

Greek VhV	Aramaic /h/	Date	Translation
πρό(η)εδρος	<i>plhdrwt</i> ¹	Uncertain	presidency

Tab. 4. Aramaic realization of *spiritus asper* within the word.

21 On the graphic rendering of such phonemes in Greek see also KREBERNIK (2007: 126ff.).

22 This particular notation reveals the Latin origin or source of the loan, which shows an etymological historical writing and the consequent phonological weakening of /h/. There are also some cases of hypercorrection, the personal name *hgrps* = *Agrippa*, and the noun *hptyn* = *optio*, which, together with alternating writing could be a trace of persistence of the original Greek phonetic aspiration, the evidence we are looking for in this analysis.

3.2 Greek loanwords in Syriac

Syriac (with a written documentation from 3rd century A.D.) is also a northwestern Semitic language, an Eastern Aramaic variety used in Christian communities, belonging to the so-called late eastern branch of Aramaic, which also included Mandaic, Jewish-Babylonian Aramaic and Manichaean Aramaic.

The present study considers some cases of integration of Greek loanwords in Syriac, which testify to a long-lasting cultural relationship with Greek.²³ The scholarship accounts for more than eight hundred Greek loanwords in Syriac texts, some of which introduced through the spoken language, others through the written tradition in different times, so that they show a significant stratification and different orthographic adaptation (see Butts in the introductory parts of his book 2016b).

The main texts quoted as sources for the given material are the *Demonstrations* of Aphrahat, John of Ephesus, some medical books, and some parts of the New Testament / Pešitta, among others. There are studies published from the beginning of the XX century onwards, which already collected the Greek loanwords in a rather complete way.²⁴

As already mentioned, among the most recent works we refer to Butts, 2016a, and 2016b, who analyzed contact-induced changes in Syriac due to Greek, noting that the scholarship paid less attention to their phonological integration. The date of the first attestation of such loanwords is very important and plays a great role in Butts' research.

In the following, I will give some examples of loanwords with their correspondences in Syriac. In general, it can be stated that the Greek *spiritus asper* is usually represented with /h/ in Syriac, while the [he] sign represents the ε of the Greek words,²⁵ though

23 For this topic I refer to BUTTS 2016b, especially pp. 75-82, and pp. 199-211 for cultural and linguistic contacts.

24 I refer to NÖLDEKE (1904), especially §4b, 25, 39, 40h, 46, 51; BROCKELMANN, (1912); SCHALL (1960) pp. 37, 42-44, 50-51, 61-62, 80, 93, 99, 104, 107, 108, 109, 110, 111, 120, 121, 135-136, 148-150, 174, 217, 220, 232, 245; BROCK, (1996: 254-257); VOIGT (1998) pp. 527-537, and the useful bibliography in VOIGT (1999-2000: 555-570); and finally MURAOKA (2nd ed., 2005) and BUTTS (2016b), see footnote 23.

25 Due to a less standardized orthography, in Syriac and Jewish Aramaic transcriptions it is possible to find both unrepresented and fully vocalized transcriptions of the same Greek words containing vowels or diphthongs.

Greek *spiritus asper* tends to be less and less represented in Syriac loanwords²⁶ in the different attestations of the same Greek word overtime. Since Semitic alphabets normally use only consonantal signs, the vowels of the words in the source language are rendered less precisely. For this (and other) reasons, ancient transcriptions of Greek (and other foreign) names and loanwords into Semitic alphabets show alternating writings and even mistakes. In some cases, the use of /h/ in Syriac words can also correspond to the Greek *spiritus lenis*, maybe due to a hypercorrection in the (original?) pronunciation.²⁷

Harviainen (1976: 59ff.) gives an account for 29 Greek loanwords and their root-derivatives which preserved in the Syriac transliteration the aspiration in initial word position, as well as for 42 words and their derivatives, in which *spiritus asper* is rendered with /ʔ/, regardless of the following vowel, be that /ε/ or /ι/ or /α/. Moreover, there are 18 words with *spiritus lenis* in Greek, which is rendered by /h/. In mid-word position or within a prepositional phrase, 5 cases maintained the original Greek aspiration; 16 cases in which *spiritus lenis* is rendered by /ʔ/, regardless of the following vowel, be that /ε/ or /ι/.²⁸

26 Also in Hebrew / Aramaic transcriptions, the aspiration is lacking in many cases, such as for ἥλιος, ἡμέρα, ἦτα, ἔπτα, ἱκανός, ἰππόδρομος, ὁμολογία, ὁμόνοια, ὑποθήκη, ὑπατικός, ὑπόμνημα, ὑποπόδιον.

27 Because of the alternating orthography, the sign /he/ has been used to render both not aspirated Greek /ε/ as well as the diphthong /α/, and sometimes as correspondence of 'intrusive aspiration' as hypercorrection. This fact caused some misunderstandings. See also WASSERSTEIN (1993: 204-205).

28 Margherita Farina points out to me that in the 7th century there was an attempt at spelling reform by James of Edessa (dead 708) who had some intolerance for the spelling of Greek loanwords with 'h'. In fact, James stigmatizes *rhwm'* for Rome, for example, and goes to extremes such as the prohibition on making the name Judah *yhw'd'* even though it is not a Greek loan. In this regard, see FARINA (2018: 171-172). Such reform may also have had an impact on the manuscript tradition. Unfortunately, there are no quantitative studies on the phenomenon.

Greek / ^s /	Syriac Initial h	Source	Translation
ἀπλῶς	<i>hplws</i>	Syrisch-Römisches Rechtsbuch; 5 th cent.	simply
ἔταιρία	<i>htrwt'</i>	NT/ Pš; 5 th cent.	sedition
ἡνιόχος	<i>hnywk'</i>	lsj 775, ls2 179; sl 348	charioteer
ἵππεύς	<i>hpws</i>	Dura, 243	horse-rider
ὄμηρος	<i>hmyr'</i>	ls2 178; sl 345, lsj 1221	hostage, pledge
ὕλη	<i>hwl', hywl'</i>	4 th cent.; OT, ES, LS 173	matter, wood
ὠρεῖον	<i>hwrywn</i>	6 th cent., LS 183	storehouse

Tab. 5. Syriac realization of the combination *spiritus asper* and vowel.

Greek / ^s /	Syriac Initial voiceless glottal stop / ^ʔ /	Source	Translation
ἄλς	<i>'ls</i>	LS 22, 7 th cent.	salt
ἀπλῶς	<i>'plws</i>	Syrisch-Römisches Rechtsbuch; 5 th cent.	simply
ἕνωσις	<i>'nwsys</i>	John of Ephesus, 6 th cent.	union
ἱερά	<i>'yr'</i>	<i>The Book of Medicine</i> , 227-230, 9 th cent.	pharmaca
ὀλκή	<i>'lq'</i>	<i>Epiphanius de mensuris ac ponderibus liber</i> , 7 th -10 th cent.	a type of engraving
ὑπηρέτης	<i>'pryt'</i>	John of Ephesus, 6 th cent.	prefect
ὠρεῖον	<i>'wrywn</i>	?, LS 49	storehouse
ὄρος	<i>'rws</i>	CAL	mountain

Tab. 6. Syriac realization with voiceless glottal of the combination *spiritus asper* and vowel.

Greek / ^s /	Syriac Initial h	Source	Translation
αἰθήρ	<i>htyr</i>	10 th cent., BB ²⁹	aether
ἀρώματα	<i>hrwm'</i>	4 th cent.	fragrant herbs
ἔθος	<i>htws</i>	6 th cent.	custom
ἰδιώτης	<i>hdywt'</i>	4 th cent.	unskilled, simple,
οἰκονόμος	<i>hwqwnm'</i>	5 th cent.	steward
ὀποβάλαμον	<i>hwprwblsymwn</i>	7 th cent.	hostage, pledge

Tab. 7. Syriac realization of the combination *spiritus lenis* and vowel.

In the following tables, I give one example for each combination of *spiritus* and vowel.³⁰

In addition, finally, we highlight some cases of loanwords attested in Syriac with alternating

orthography, one with initial /h/ and another with initial /^ʔ/, sometimes occurring in different periods (see also ἀπλῶς above) (Tab. 8).³¹

29 See footnotes 25 and 27 above. The quoted lexicon Bal Bahlul collected material from various sources.

30 The abbreviations used for the sources are LS (see BROCKELMANN 1928); SL (BAUMSTARK 1922); LSJ; NT/ Pš New Testament, Pešitta; OT = Old Testament; Dura = The Syriac Deed of Sal-e from Dura-Europos, from the year 243, BB = Lexicon of Bar Bahlul.

31 Margherita Farina suggests me the relevance of the dates of the manuscripts for Syriac. Given that because of an internal tradition the data are derived from ancient copies, we know that for Bardesan we have no contemporary manuscripts. Farina supposes that comparison with other types of attestations may provide support. For my purpose, I will merely comment that they certainly testify to the graphic oscillation at some point in the history of Syriac.

Greek	Syriac 1 Initial /h/	Syriac 2 voiceless glottal stop /ʔ/	Translation
αἵρεσις (<i>pgl</i> 51; <i>LSJ</i> 41)	<i>hrsys</i>	<i>ʔrsys</i>	difference, opinion, heresies
source	Pre-4 th cent. <i>Book of the Laws of the Countries</i> , 28.14; 36.17, 36.20; <i>ls2</i> 90, 184; <i>sl</i> 180, 355	6 th cent. <i>Life of John bar Aphthonia</i> , 23.1; <i>ls2</i> 51; <i>sl</i> 103	
ὑπηρέτης (<i>LSJ</i> 1872)	<i>hwprytʔ</i>	<i>wprytʔ</i>	slave, servant
source	6 th cent. Yuḥanon of Ephesus, <i>Ecclesiastical History</i> , Part 3, 64.2; <i>ls2</i> 182; <i>sl</i> 338	6 th cent. Yuḥanon of Ephesus, <i>Ecclesiastical History</i> , Part 3, 61.23; 64.20; <i>ls2</i> 43; <i>sl</i> 89.	
ἡγεμών ³²	<i>hgmwnʔ</i>	<i>ygmwnʔ</i>	prefect
Source	4 th cent. Aphrahaṭ, <i>Demonstrations</i> , 1.973.6	<i>lsj</i> 763	
	<i>Book of Steps</i> , 645.20; 648.3; <i>ls2</i> 171; <i>sl</i> 340)	4 th cent. <i>Book of Steps</i> , 648.15; <i>ls2</i> 4; <i>sl</i> 31	

Tab. 8. Alternating realizations of *spiritus asper* in Syriac.

3.3. ARMENIAN

The attested historical relations between Armenians and Greeks began with the Armenian translations of the Bible in the 5th century, i.e. with the beginning of the Armenian written tradition.³³ The Hellenistic and Roman periods were also important for the cultural contacts between Armenian and Greek, this due to the influence of the Greek culture on the Armenian one. The Christianization played an important role for the cultural contacts, though it has been promoted probably by Syrian or Iranian people, and not directly by “Greek-speaking missionaries” (see Clackson 2014: 38). For this reason, some words

belonging to the Christian Greek vocabulary derive from Iranian or Syriac words. Armenian historiographers (Faustus of Byzantium and Moses of Chorene), however, record the relations with the Romanized Greek world. Nevertheless, we cannot speak of a Greek-Armenian bilingual society in this period, as only a few Greek loanwords are attested in Armenian for the 5th century. These have been first analyzed by Hübschmann (1897: 323-324),³⁴ who collected no more than 20 words belonging to the semantic fields of culture, technology, or social structure (Clackson 2014: 38). However, Thumb (1900) proposed a first thorough investigation of the Greek loanwords in Armenian, dealing also with the rendering of *spiritus asper*. He concluded that /h/ was preserved in the Greek of the 5th century, if at all, only “in the speech of learned people”. More recently, basing on Thumb, Harviainen (1976) dedicated a special study to the orthographic rendering of Greek *spiritus asper* also in Armenian loanwords, noting that such loans increased starting for the 5th century onwards.

32 The alternation in the spelling for the word ἡγεμών = *ygmwnʔ* ‘prefect’, i.e. the presence of the glottal stop and a variant with /h/ according to the earlier spelling is due to the date of the manuscript of the *Book of Steps* (ca. 12th century), while the original composition dates to ca. 400 AD. Such texts testify to the layering of different traditions, different notations and variants in the same text (648.3; see also 645.20).

33 On the contacts among Armenian and other Indo-European languages based on the attestations of those languages (Xenophon, e.g.), such as the Iranian languages, Phrygian and Greek, see CLACKSON (1994).

34 “Armenische Etymologie. Abt. 2. Die syrischen und griechischen Lehnwörter im altarmenischen und die echtarmenischen Wörter, Teil 1”.

The chronological frame for our study, however, overlaps partially with such testimonies for Armenian loanwords.

Also in the case of Armenian, the analysis of the material involves first those cases, where /h/ at the beginning of the borrowed word corresponds to the Greek /h/, secondly the absence of /h/ in the same position in the loanword, thirdly occurrences of /h/ in loanwords with no corresponding Greek aspiration sign, finally, lexemes with or without aspiration in the mid of the word. Armenian /h/ corresponds to Greek /h/ in seven Greek loanwords dating to the 5th century, with only one exception. In four of these six words the stress falls on the initial syllable in Greek. We

observe also the zero realization of Greek /h/ in twelve words: eight of these are from the 5th century, while the dates of *alkion*, and *anil ermos* are uncertain. The /h/ in Armenian loanwords corresponds to Greek *spiritus lenis* in four words, all from the 5th century as well. The stress falls on the initial syllable in three of them. Finally, the medial Greek /h/ is written with /h/ in Armenian in two words, both of them from the 5th century.

Some Armenian examples are quoted below, deriving first of all from the works by Harviainen (1976: 77ff.) and Hübschmann (1987). Here I also add some proper names. The examples are chosen to illustrate the rendering of each constellation of *spiritus asper* + vowel.

Greek /h/ <i>asper</i>	Armenian/h/	Date	Translation
Ἄγαρ	<i>Hagar</i>	5 th century	Hagar, mother of Ishmael
Ἥλιος	<i>Helios</i>		Helios
Ἡράκλειτος	<i>Heraklitos</i>		Heraklitos
Ἑρμῆς	<i>Hermēs</i>		Hermes
Ἡρόδοτος	<i>Herodotos</i>		Herodotos
Ἡρόστρατος	<i>Herostrat</i>		Herostrat
Ἥφαιστος	<i>Hep'estos</i>		Hephestos
ῥήτωρ	<i>hṙetor</i>		Rhetor
ῥήψιμος	<i>Hṙip'sime (female)</i>		Rhapsime
Ῥώμη	<i>Hṙovm</i>		Rome
αἰρεσιώτης	<i>heresiōtai-</i>	Euseb, 5 th	heretic
αἰρετικός	<i>heretikos</i>	Cyrril 5 th	heretic
Ἑλλήν	<i>hellēn</i>	MX 5 th	Hellen
Ἥρωσ	<i>Heros / hṙmu</i>		Heros
ὄρμος	<i>hormay</i>	Pseud. 5 th	necklace
ῥλη	<i>hiliul</i>	Basil 5 th	matter
ῥλλος	<i>hiulos</i>	Georgios Pisides	ichneumon
ῥπατος	<i>hiwpatos</i>	Euseb. 5 th	consul
ῥπηρέτης	<i>hiuperet</i>	MX 5 th	servant

Tab. 9. Armenian realizations with /h/ of *spiritus asper* and vowel.

Greek/h/	Armenian /ø /	Date	Translation
ἀλκυών	<i>alkion</i>	Basil 5 th	swallow
αἱματίτης	<i>ematitēs</i>	Pseud 5 th	hematite
Ἑλλάς	<i>Ellas</i>	Philo 5 th	Hellas
ὀρμίσκος	<i>ormisk</i>	Cyrril of Alex.	necklace
ὕακιντος	<i>yakint</i>	OT 5 th	hyacinth

Tab. 10. Armenian realizations without /h/ of *spiritus asper* and vowel.

Greek <i>spiritus lenis</i>	Armenian /h/	Date	Translation
ἄγαρ	<i>Hagar</i>		Agar
ἄλοη	<i>haluē</i>		aloe
ἔθνος	<i>het‘anos</i> ³⁵		population

Tab. 11. Armenian realizations with /h/ of *spiritus lenis* and vowel.

Greek V/h/V	Armenian V/h/V	Date	Translation
σύνοδος (< sun + hodos)	<i>siunhodos</i>	FB 5 th	synod

Tab. 12. Armenian realizations with /h/ of *spiritus asper* within the word.

Greek V/h/V	Armenian VøV	Date	Translation
ὀκτάεδρον (oktahedron)	<i>oktaēdr̄on</i>	Grig. Nius 8 th	octahedron

Tab. 13. Armenian realizations without /h/ of *spiritus asper* within the word.

4. CONCLUSIONS

This work stems from an ongoing study relating to the notation and diffusion of aspiration within the Greek tradition itself. To clarify the chronology of the historical development of the phoneme in question, some scholars have proposed observing the phonological integration of Greek loanwords in languages spoken in neighboring areas to reconstruct and illustrate the development of the written tradition of aspiration. Here we have taken into consideration the realizations of some Greek loanwords in traditions from the Eastern areas, in particular Aramaic, Syriac and Armenian.

These languages and the peoples that spoke them had more or less long periods of cultural and contact with Greek, which in some cases was direct. Particularly strong were the contacts

with Aramaic and Syriac, with periods of true bilingualism that accompanied the indirect contact by means of the written medium. The hypotheses that have been made about the period of disappearance of the aspiration in Greek are many and different. In order to examine the problem more carefully, we have therefore tried to highlight a tendency for its survival on the basis of the correspondences found in the loanwords.

In the three literary traditions under discussion, we first presented the cases in which the Greek /h/ was rendered with /h/ at the beginning of the borrowed word, interpreting this as a realization of what was known of the Greek phonology. Secondly, we considered the lack of /h/ in the same position in the corresponding loans, thirdly the occurrences of /h/ that do not correspond to an original Greek aspiration, but to vowels with *spiritus lenis*. Finally, we observed cases in which the aspiration was in the middle of the word, with or without realization of the aspiration in the target language.

If we consider the material analyzed, both from the Semitic languages and from Armenian, the evidence suggests that Greek initial /h/ may have lost its phonemic status around the 5th century, while some other scholars proposed to date its

³⁵ Corresponding to Ancient Greek ἔθνος, the initial *h-* is problematic. See also footnote 27 above. AČAREAN (1977), quoting DE LAGARDE (1877), explains it by Classical Syriac mediation. *hetanos* = ἔθνος also occurs with an initial /h/ in Coptic. BEEKES (s.v., 377f.) mentions the Armenian, Coptic and Gothic correspondences with initial *h-*, which is a surprising coincidence, suggesting a derivation from a spoken form ἔθνος (héthnos), though he quotes twice ἔθνος.

disappearance around the middle or second half of the 4th century.³⁶ Syriac evidence indicates that after the 5th century the spiritus asper has been represented in the texts with and without /h/, implying that it acted as a free variant, which in turn suggest a strong weakening in Greek, at least until the 5th century.

In my opinion, an absolute answer cannot be given. Indeed, the channels that led to the codification of the notation of the *spiritus asper* were different, both because the corresponding loanwords in the Semitic traditions were stratified and because they came from texts whose origin was much earlier. Furthermore, they could go back to direct oral contact (but here the data for a quantitative analysis and also a verification of the sources is impossible to retrieve), and, finally, they relate to the alternating uses of the orthographies that are typical of the Semitic tradition.

Nonetheless, when comparing the three traditions under consideration, some regularities and coincidences can be observed, suggesting the preservation of the aspiration in the corresponding loans of those Greek words in which the accent fell on the first syllable. How long /h/ maintained this form is not clear from the material we have. I hence reiterate that it is impossible to establish a more precise date than that at which the weakening of aspiration was seemingly ongoing. The loss may have occurred during the 4th century for aspiration in the middle of the word, and during the 5th century for initial syllables under stress.

Also in Armenian the presence or absence of /h/ correlates to the position of the accent: /h/ is preserved in words with stress on the first syllable, while in other cases /h/ is usually missing.³⁷ The cases of Armenian *het'anos* from

Greek ἔθνος, and Syriac *htws* from Greek ἔθος, would point to non-etymological /h/ in words with initial accent, but there are many counterexamples, so that this argument is not very strong.

From a sociolinguistic point of view, it seems possible to conclude that the use of /h/ in Greek loanwords in foreign languages reflects a historical pronunciation of /h/ in the Greek spoken by the authors (mostly in bilingual or multilingual contexts) at least until the 5th century. However, this conclusion appears to be valid only for data examined here and concerning the eastern Mediterranean. At a general level, it is important to consider further data from loans and graphic uses linked to the notation of /h/ also in the Western literatures. All the results regarding all the traditions will need to be compared.

Secondly, we must ask ourselves whether the authors from whose works the loans were taken spoke and wrote a higher diaphasic variety or a more learned version of Greek than that used by the rest of the population, as the spread of linguistic changes often arises from the language spoken every day, and spreads to the written language only after a certain period of time.

To conclude, the data and the chronological frameset I presented suggest that the /h/ was pronounced by the Greek speakers living in the eastern Mediterranean, and that this phoneme, probably through a gradual weakening, remained as a free variant. Then, the aspiration gradually disappeared starting from the middle of the 4th century, first in the middle position of the word, and lasted a few more decades in the initial syllable under stress.

36 According to HARVIAINEN (1976: 50), the loans in the Sahidic New Testament attested that /h/ in the mid of the word was still pronounced in Greek at the beginning of the 300 AD.

37 According to HARVIAINEN (1976, passim) Bohairic Coptic (which I have not considered) and Syriac vocabularies reveal the same development of the notation of /h/ in initial position.

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