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Maksim Kudrinski and Ilya Yakubovich

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Abstract: The goal of this paper is to compare various designations that have been offered for the Sumerian and Akkadian elements that occur in Hittite written texts but were presumably absent from the spoken Hittite language. We suggest that the most appropriate cover term in this case is heterogram, which represents the established designation for Aramaeograms in Middle Iranian texts, whereas the other terms offered thus far are either descriptively inadequate or evoke false associations. With regard to the function of heterograms in Hittite texts, it is concluded that they were not systematically used as markers of the elevated style but sometimes could serve for the expression of semantic distinctions that had no counterpart in colloquial Hittite.

Keywords: Hittite, Sumerogram, Akkadogram, ideogram, logogram, heterogram, alloglottography

1 Definition of Heterogram

It is a well-known fact that Hittite cuneiform orthography represents an adaptation of Mesopotamian cuneiform. All known Hittite texts are written in a kind of cuneiform script that features both phonetic spellings of Hittite syllables and graphic renderings of forms belonging to Sumerian and Akkadian, the literary languages of Mesopotamia. In many instances scribes had a choice between rendering the sound form of a Hittite lexeme with a string of syllabograms or employing in writing a Sumerian or Akkadian lexeme with the same meaning. Thus, the Hittite noun *iš-ḫa-aš* 'master' could be written as either EN or *BE-LU*, where the capitals and italic capitals respectively mark the Sumerographic and Akkadographic spellings of the word for 'master', in accordance with Hittitological conventions. In order to specify the inflectional form of a lexeme, Sumerographic spellings could be complemented with Akkadographic or Hittite endings (or both), while a combination of Sumerographic plural markers and Hittite endings was occasionally appended to Akkadographic stems. Such a practice gave rise to mixed spellings, e.g. EN-*aš* 'master.NOM.SG' or *BE-LU*.ḪI.A-*uš* 'master.ACC.PL'. Sometimes the practice of phonetic complementation extended to derivational suffixes, e.g. LUGAL-*u-e-ez-na-aš* 'of kingship', LUGAL-*u-e-et* 'he became king' vs. LUGAL-*uš* 'king' (Friedrich et al. 1975–, III: 439–455, Kloekhorst 2008: 327–328).

In much of early Hittitological literature, including the first report on the freshly deciphered Hittite language by Hrozný (1917) and the influential *Hethitisches Elementarbuch* by Friedrich (1940), Sumerian and Akkadian elements came to be referred to as ideograms (German *Ideogramme*), literally "concept-writing". Such use of the term was based on the observation that Sumerian cuneiform signs normally preserve their semantic values while being used in texts in different languages. Thus, e.g., the Sumerian sign LUGAL was deployed for 'king' in Sumerian, Akkadian and Hittite texts, all these writings being connected to one specific notion, rather than a particular lexeme. Furthermore, some Sumerian signs could denote different words in

Maksim Kudrinski, Department of Language, Institute for Oriental Studies, Russian Academy of Sciences, Rozhdestvenka d. 12, 107031 Moscow, Russia, E-Mail: kudrinski@gmail.com
Ilya Yakubovich, Institute for Oriental and Classical Studies, Russian State University for the Humanities, Miusskaya pl., 6, korp. 1, 125993 Moscow, Russia, E-Mail: sogdiana783@gmail.com

different contexts. Nevertheless, Gelb (1963: 35) heavily criticized the use of the term "ideogram" in cuneiform studies maintaining that it was to be reserved for primitive writing systems. He argued that the alleged "ideographic" writings normally denote specific words rather than notions and, furthermore, cuneiform "ideograms" sometimes can be used with no regard to their original semantics, e.g. to denote words similar in sound but different in meaning (Gelb 1963: 106). As a result, the term *ideograms* with reference to Sumerographic and Akkadographic spellings gradually came to be abandoned in favor of their new designation as *logograms*, which is now ubiquitous in contemporary Hittitological literature.

Nevertheless, the problem remains unsolved at the level of definition. Laroche (1978: 742) noted that the use of Sumerographic writings in Hittite texts cannot be fully covered by either of the two terms. He argued that they can function both as "word-signs" and "concept-signs" in different contexts; the latter is true, e.g., for determinatives, which do not stand for any particular word but merely denote the semantic class of the following (or preceding) lexeme. Laroche spoke in favor of the term "Sumerogram" (*sumérogramme*) as the most suitable one for Hittite Sumerographic writings.

Mark Weeden's influential monograph devoted to Sumerographic and Akkadographic writings in Hittite texts defines the *logogram*, literally "word-writing", as 'a single sign or word that is written to express a (different) word' (Weeden 2011: 3), as opposed to ideograms and pictograms, which denote certain concepts or objects. If one accepts this interpretation, the spelling of LUGAL-*u-e-ez-na-aš* 'kingship.GEN' does not seem to contain any logograms, since the Sumerographic element of this graphic representation stands for the root of the noun under discussion, and not for the whole lexeme or word-form. In addition, the term *logogram* appears to be ill-suited for the syllabically spelled Akkadograms in Hittite texts, e.g. *AD-DIN* 'I gave', since one would have to assume in such a case that one logogram consists of several syllabograms. This raises the question about what could be the acceptable designation for all the Sumerographic and Akkadographic elements occurring in the Anatolian cuneiform.

The solution offered here is *heterogram*, literally "writing in another (language)", the term that is extensively used in Iranological tradition for Aramaeograms occurring in Middle Iranian texts, effectively replacing the traditional term *ideogram* in this function (Skjærvø 1995: 287).[1] Their origin is essentially the same as that of Sumerograms and Akkadograms occurring in Hittite texts. The official Aramaic language (formerly known as "Imperial Aramaic") was arguably the main chancery language of the Achaemenid Empire but gradually came out of use in the Hellenistic period. It is fair to say that it was no longer transmitted in the first millennium AD, even though the closely related Aramaic languages continued to flourish in Syria and Mesopotamia. Several Middle Iranian scripts, such as the Pahlavi script used for writing Middle Persian, or the so-called "National Script" of the Sogdians emerged through a gradual adaptation of the Official Aramaic consonantal alphabet to the local vernaculars. A number of stems in these scripts failed to undergo translation from Official Aramaic in writing, although sometimes they occur with Iranian phonetic complements. Quite in tune with the traditions of Cuneiform Studies, the capital letters also mark Aramaeograms in Middle Iranian texts, e.g. Middle Persian GBR'*n* = /mardān/ 'man.PL', Sogdian ZK*n* = /əwen/ 'that.GEN.SG.M'.

The Russian equivalent of the same term, *geterogramma*, was extended to the cuneiform languages in the works of Igor Diakonoff (see e.g. Diakonoff (1967: 89) for Sumerograms in Elamite).[2] The definition of the term under discussion that is included in the standard reference work on Russian linguistic terms may be translated as "a sign or combination of signs that reproduce a word of A but meant to be read in B as a part of the text composed in B, where A and B are two different languages" (Diakonoff, in: Jarceva 1990: 103). One must admit that it is not particularly different from Weeden's definition of *logogram*. Nevertheless, the

1 We did not attempt to trace systematically the origin of the term *heterogram* in Middle Iranian Studies, but it is clear that it had been at home there since at least the mid-twentieth century, as it is found, for example, in Bailey 1943.

2 Note that the term *heterogram* has already been extended without much ado to Akkadograms in Hittite texts in Testen (2012) (accessed 22.03.2016). Unfortunately, Testen's definition of heterogram is in need of revision. The claim that it represents "a graph borrowed from another language (in which it may have been either ideographic or phonetic)" implies, strictly speaking, that virtually all the syllabograms of the Anatolian cuneiform represent heterograms, merely on the grounds that they were borrowed from the Mesopotamian cuneiform, where they served for the expression of Sumerian and Akkadian forms.

etymology of the term *heterogram* does not impose a reference to the way one reads specific texts, while one may argue that this represents an altogether separate question, since the texts can be read and dictated not only in natural languages, but also in scribal jargons.[3] For the purposes of the present discussion, which focuses on the society where one cannot *a priori* determine the language of oral scribal performance, we suggest a reformulated definition. The term *heterogram* stands for *a sign or combination of signs that reproduce in writing a segment of A as a part of a text composed in B where A and B are two distinct languages and one can reasonably assume that the segment in question did not exist in the spoken language B*.

The empirical advantages of the revised definition are twofold. On the one hand, it accommodates the instances where Sumerographic or Akkadographic elements in Hittite texts correspond to morphemes rather than lexemes in their respective source languages. This allows one, for example, to refer to the Sumerographic plural marker ḪI.A as a heterogram on its own right, merely on the ground that its source could function in Sumerian as a distributive plural marker (e.g. udu-ḫi-a 'sheep (of various kinds)'). *A fortiori*, this definition clearly fits for the cases where a sign for a lexeme in a source language is deployed for marking a morpheme in the target language, e.g. LUGAL-*u-e-ez-na-aš* 'kingship.GEN', where the Sumerogram LUGAL marks the root of a morphologically complex form, even though the same sign can be used on its own as a logogram for the noun 'king', in Sumerian as well as Hittite. Thus *heterogram* emerges as a suitable cover term for the logograms and "morphograms" in Hittite texts. Furthermore, it can accommodate those instances where the opposition between "morphograms" does not directly map on the opposition between morphemes in the paradigm of the spoken language (cf. Section 4) or even such cases where the boundary between logograms and "morphograms" appears to be blurred (e.g. LUGAL-*an-ni* = LUGAL-*ez-na-an-ni* 'kingship.DAT').

On the other hand, since the revised definition of heterogram is devoid of the teleological component, it also accommodates those Hittite graphemes and their combinations that represent foreign segments with no counterpart in the spoken language. These are the so-called determinatives or classifiers, usually redundant elements of semantic annotation that are conventionally written as superscripts in cuneiform transliteration, e.g. $^{\text{LÚ}}$ALAM.ZU$_9$ 'clown', *ḫal-ki*$^{\text{ḪI.A}}$*-uš* 'crops'. In the traditional Hittitological parlance logograms proper are distinguished from determinatives, but then the term *logogram* can also be used as a hyperonym for both classes (Hoffner / Melchert 2008: 10, n. 8). Such a terminology is not only confusing but also formally inaccurate as long as one defines logograms as "signs or combinations of signs that denote particular words in the target language" (Hoffner / Melchert 2008: 10). The last definition can, however, be retained if one introduces the term *heterogram* as a hyperonym for logograms proper, "morphograms", intermediate cases, and determinatives within the context of Anatolian cuneiform. Looking from a different perspective, the internal structure of the word "heterogram" automatically renders it a suitable hyperonym for Sumerograms and Akkadograms.

2 Heterograms and Alloglottography

At this point one must acknowledge that the definition of heterogram offered in Section 1 represents not the only way how this term has been defined with reference to cuneiform. A substantially different treatment is found in Weeden (2011), arguably the most detailed and thorough piece of research on Sumero- and Akkadograms in Hittite texts to date. Weeden's approach differs from ours on two separate levels, but the logic of our argument prompts us to begin with a subsidiary issue and relegate the rest of the discussion to the next section. Weeden (2011: 10) suggests that the term allogram can be used as a synonym of heterogram. This suggestion is presumably based on the semantic affinity between Greek ἄλλος 'other' and ἕτερος 'other

3 For a well-understood instance of a scribal jargon see Rubio (2007: 42) on the *ondoku* style of reading classical Sino-Japanese texts. This is only a partial parallel, because here we are probably dealing with an instance of true alloglottography rather that the use of heterographic spellings (cf. the following section). Less known but arguably more relevant is the phonetic reading of Aramaic heterograms in the liturgical declamation of Middle Persian texts by the Indian Zoroastrians (Yakubovich 2008b: 206). For the likely existence of a scribal jargon in Hattusa, see Kudrinski (forthcoming).

(out of two)', the respective etyma for the first components of the two compounds. Nevertheless, their interchanging use does not appear to represent the best practice given that it echoes a clear case of terminological confusion. The heterographic spellings are sometimes erroneously considered together with a substantially different practice, known as *alloglottography*. In what follows we shall attempt to address the genesis of this last term and define the empirical phenomenon for which it can properly stand.

The neologism alloglottography was introduced in Gershevitch (1979) for the use of Elamite in Achaemenid chanceries. Gershevitch justly pointed out that a number of features of Achaemenid Elamite reflect its structural interference with Old Persian. He was also aware of the fact that Achaemenid Elamite was liberally deployed for the composition of administrative texts in the Achaemenid capital Persepolis, while the use of Old Persian was virtually limited to monumental inscriptions serving the purpose of royal propaganda.[4] Given the independent evidence that the Old Persian version of the Bisitun inscription of Darius I postdates its Elamite version, he concluded that it does not represent a backward translation from Elamite, but rather reflects a shift from "alloglottographic" Old Persian, which was recorded *per speculum et in aenigmate* with the help of Elamite forms, to the phonetic rendering of the Old Persian text.

Regrettably, Gershevitch (1979) is written in a highly poetic style and does not contain a formal definition of alloglottography. Nevertheless, one can state that it appears to stress the adoption of a particular language, not merely a writing system (p. 154), but asserts that the alloglottographic Elamite is not "genuine" (p. 126) although its scribes were Elamite native speakers, while the Persians were illiterate (p. 119). It is also implied that the scribes were expected to read the alloglottographic messages in Old Persian, although the transition here would not be as straightforward as in the instance of what Gershevitch calls "ideographic" writing and what most other Iranologists would now call heterographic spellings (cf. pp. 136, 138). Using part of this information as a starting point, Langslow (2002: 44–45) formally defined alloglottography as "the use of one language (L1) to represent an utterance in another language (L2) [...] in such a way that the original utterance in L2 can be accurately and unambiguously recovered from the document in L1". Note that a light modification of Langslow's definition, perhaps replacing "utterance" with "form or utterance", would also be capable of accommodating heterograms in Hittite texts. The view of heterographic spellings as a sort of alloglottography has indeed prevailed in a number of later works on the typology of writing systems.[5]

Nevertheless, Gershevitch's ideas of alloglottography found little following among the scholars of Achaemenid Iran, not only because of the idiosyncratic style of his presentation, but also due to the fact that the specialists in Achaemenid Elamite unanimously continued to regard it as a linguistic system, as opposed to a mere rebus writing.[6] The most thorough criticism of Gershevitch's views known to us is contained in Henkelman (2011). Drawing upon his first-hand knowledge of administrative documents from Persepolis,

4 A recent exception to this generalization, of which Gershevitch could not be aware, is the fragmentary cuneiform tablet in Old Persian discovered in the storage rooms of the Oriental Institute, Chicago (Stolper / Tavernier 2007). Yet, given that the item in question belongs to the same collection of Persepolis fortification tablets as thousands of tablets inscribed in Elamite, this discovery can be fairly described as revealing an exception that confirms the rule. Perhaps a scribe experimented with inscribing "monumental" Old Persian characters on clay.

5 Rubio (2007) seems to have been the first paper to explicitly classify the Sumerian heterographic spellings in Akkadian as instances of the same contact phenomenon as alloglottography in Achaemenid Iran. In Johanson (2013), they are both booked as examples of *written language intertwining of type E*, which is defined as the situation when "[e]lements of a higher-ranking code are used in texts to represent a lower-ranking code". As argued below, such a definition appears to be descriptively inadequate for the case of Achaemenid Elamite, which is normally cited as the paradigm instance of alloglottography. Nevertheless, the confusion between alloglottography and the use of heterograms has already acquired further following (e.g. Crisostomo 2015: 160).

6 For the reception of Gershevitch's views compare the following most telling quote: "much of it was meant not only as an amusement in its oral form, but actually as a parody of Iranian philology and epigraphy, to which some erudite notes and bitter criticisms were attached" (Stolper / Tavernier 2007: 9, n. 3). No less instructive is the following observation: "Gershevitch's wry fantasy of Elamite scribes serving as tape recorders or tape-robots ... was actually inspired by 'A man with a tape recorder up his nose', the ninth episode of the first series of 'Monty Python's Flying Circus'" (Henkelman 2011: 616, n. 110). The evaluations of this kind were naturally unlikely to be printed before Ilya Gershevitch passed away and some appropriate time elapsed after his death. Hence the genuine surprise of Rubio (2007: 67): "It is somewhat puzzling that, despite Gershevitch's scholarly stature, this theory of his has been almost completely ignored by Achaemenid scholars and, for the most part, has received neither explicit criticisms nor endorsements of any kind".

Henkelman stresses the manifold variations in the structure of Achaemenid Elamite, which show that it did not represent an artificial code but rather reflected a continuum of contact-driven restructuring (p. 593). It is known that intensive restructuring of language A under the influence of language B cross-linguistically correlates with the imperfect acquisition of A by the speakers of B (Thomason 2001: 75–76). Therefore the most natural hypothesis is the Iranian ethnicity of the bulk of the scribes who were responsible for writing Elamite in the Achaemenid capital. This is independently confirmed through prosopographic evidence: the scribes mentioned in the Elamite documents from Persepolis have, by a clear margin, Iranian names (Henkelman 2011: 614 with ref.). No empirical evidence had ever been adduced for the dominant Elamite ethnicity of Achaemenid Elamite scribes, but Gershevitch rather took for granted the opinion of some mid-twentieth-century scholars who could not conceive why the Indo-European invaders would care to learn the language and writing of the lowly Elamites (Henkelman 2011: 614, 621–622).

This re-evaluation is conducive to offering a partial parallel to Achaemenid alloglottography from the field of Anatolian studies, which consists not in the preservation of heterograms in Hittite but rather in the use of the Hittite language in the Empire of Hattusa on the eve of its collapse. There are sufficient reasons to believe that the main spoken language in Hattusa in the 13th century BC was Luwian and not Hittite (Yakubovich 2010). In a similar fashion, there is a consensus that the main spoken language in Persepolis at the time of Darius I and Xerxes I was Old Persian, and perhaps other Iranian dialects, but not Elamite. Nevertheless, both Hittite in Hattusa and Elamite in Persepolis represented languages of tradition hallowed by time. Their use in chanceries harked back to the days when Hittite was the main spoken language in Hattusa while Elamite was a spoken language in the kingdom of Anshan which included the area of Persepolis (cf. Henkelman 2011: 596–614). The language shifts from Hittite to Luwian and from Elamite to Persian both manifested themselves in the emergence of the new vernaculars on monumental inscriptions. This innovation was accomplished with the help of indigenous writing systems, respectively the Anatolian hieroglyphs and Old Persian cuneiform.[7]

Yet another argument for the parallelism of language shifts in Bronze Age Anatolia and Achaemenid Iran is the similarity of partial restructuring undergone by Achaemenid Elamite and New Hittite. The contact-induced character of Achaemenid Elamite, which prompted Gershevitch to interpret this dialect as a sort of rebus writing, finds a counterpart in the structural innovations in New Hittite, as described, for example, in Rieken (2006). It is to be noted, however, that the partially restructured vernaculars did not represent ultimate targets of the language shift in the respective epigraphic communities in either of the two cases. Quite to the contrary, as the latest varieties of Hittite and Elamite attested in writing, they reflected the written languages on their way to extinction. But if we did not have this historical evidence, it would be tempting to conclude that the language shift went into the opposite direction: from Iranian to the imperfectly learned Elamite and from Luwian to the imperfectly learned Hittite. Now we understand that the imperfect acquisition of both Elamite and Hittite was a real phenomenon, but both were learned by aspiring scribes as written acrolects, and this development ran contrary to the basic direction of the language shift.[8]

7 There are no complete bilingual texts emanating from Hattusa that could provide direct parallels to the Bisitun inscription and other specimens of the Achaemenid multilingual epigraphy, but one analogy is highly suggestive. The titles of Suppiluliyama II, the last known king of Hattusa, occurring in the Hittite text KBo 12.38 ii 22–23, show "a deliberate phrasing of the text according to typical Hieroglyphic Luwian stylistic patterns by a court scribe intimately familiar with Luwian" (van den Hout 2007: 238). In fact, this sequence of titles on a clay tablet finds a perfect parallel in the Luwian NIŞANTAŞ inscription belonging to the same king Suppiluliyama II, and Hawkins (1995: 59) even calls KBo 12.38 the draft for the Luwian hieroglyphic inscriptions. At this point one can remember that the text of the Bisitun inscription was also recorded on flexible materials in the Aramaic language (a fragmentary papyrus was found in Elephantine, Egypt) and also on clay tablets in the Akkadian language (a fragment found at Babylon).

8 It is worth observing in passing that the heterograms in Akkadian, Hittite and Middle Iranian also arise in a way that is markedly different from the prototypical origin of loanwords in spoken languages. It has been argued that, other things being equal, the presence of numerous borrowings in the absence of structural interference correlates with the situation of language maintenance, and the exceptions to this generalization, although observed, are relatively rare (cf. Guy 1990; Ross 1991). By contrast, the emergence of heterograms normally represents a by-product of language shift in epigraphic communities. The difference between the sociolinguistic correlates of historical changes in speech vs. writing certainly deserves a separate study.

Thus the phenomenon labeled as alloglottography does refer to a non-trivial sociolinguistic scenario. If one strives toward the correct interpretation of the sociolinguistic situation for the description of which it has first been introduced, then it can be defined as *the mismatch between the shift from language A to language B in oral communication and the preservation of A in writing in the same community, which is accompanied by the imperfect learning of the written variety of A by the speakers of B*. From the sociolinguistic viewpoint, it is akin to the notion of diglossia in modern language communities.[9] But an important empirical difference is how the acrolect (the most prestigious variety) is perceived in either of the two cases. In the instance of diglossia this is the normative language: Modern Standard Arabic, for example, is defined by its synchronic rules and not by how it deviates from the language of the Quran, and many Arabs believe, as a matter of fact, that this is the same language as that of the Quran. By contrast, in the instance of alloglottography, the written acrolect is primarily defined by its deviation from the earlier norm caused by interference with the vernacular. To some extent, this is the perspective of a modern observer, but it also reflects an objective difference in the degree of linguistic normalization. The rationale for such a discrepancy between ancient alloglottography and modern diglossia is the development of linguistic theory, beginning with Panini's India and the Hellenistic world, which yielded additional tools for maintaining the norm in non-natively transmitted languages.

It follows that the notion of alloglottography can be maintained with reference to language contact in ancient societies, albeit in a rather different sense than the one originally intended by its creator. The crucial difference in the sociolinguistic interpretation of alloglottography and heterographic spellings is that although both imply the ongoing or completed native language shift in a particular epigraphic community, the former predates the language shift in writing, whereas the second must follow it. At the risk of seeming tedious, one must repeat that Achaemenid Elamite and New Hittite represent the terminal varieties of written Elamite and written Hittite, while the Akkadograms in Hittite compositions or Arameograms in Middle Iranian compositions do not prompt the attribution of the respective texts to Akkadian or Aramaic. This militates against the use of the terms *allogram* and *heterogram* interchangeably for the same phenomenon. Whether or not one may wish to retain the former term for segments of alloglottographic systems, there is every reason to keep it apart from heterographic spellings.[10]

3 Heterograms and Style

Now one can proceed to the main difference between the proposed definition of heterogram and its counterpart offered by Weeden (2011). According to the latter source, truly heterographic writings differ from the logographic ones in that they would add "the further level of meaning, the selection of which would have indicate an intention on the part of the writer, perhaps to signal a particular stylistic register" (Weeden 2011: 5). Later on, Weeden specifically defines heterograms with reference to the sociolinguistic situation in Hattusa as "specifically and consciously Sumerian and Akkadian writings in the Hittite text" (ibid. 10). This definition, however, happens not to be operational in the majority of cases, as Weeden acknowledges with reference to the situation in Mesopotamia. He states that "[t]he tension between a logographic interpretation of the Sumerian sign, meaning that it is solely representing the Akkadian word, and the heterographic or Sumerographic interpretation, meaning that the Sumerian value is indicating meaning in some way, is to be evaluated on a case by case basis. It is rare, however, that evidence exists which helps us to decide on any

9 We operate here with the broad definition of diglossia that does not imply close genetic relationship between the two varieties of language used in the same community (e.g. Fishman 1967). It differs from the original definition of this sociolinguistic phenomenon, found in Ferguson (1959), which is restricted to those cases when the vernacular (basilect) represents an evolved variety of the most prestigious dialect used in writing (acrolect).

10 An additional problem of the term allogram is its use in a different meaning outside the domain of language contact. The philologists dealing with written languages frequently deploy it a way that is parallel to allomorph or allophone, i.e. with reference to the conditional variants of the same grapheme. For example, one can say that σ and ς represent allograms of the same Greek grapheme <Σ>. For the explication of such a use see e.g. Emiliano (2011: 158). While the term allograph is arguably more appropriate for this function, a simple google scholar search indicates that the most frequent use of the term allogram in philology is the one described in the present footnote.

individual attestation whether an extra level of reference is relevant for interpretation" (ibid. 7). The same conclusion can be safely extended to the situation in Hattusa, and this is why Weeden does not discuss in the majority of cases whether individual Sumerograms or Akkadograms qualify as heterograms.

To put things slightly differently, Weeden's definition of heterographic spelling implies that a subsystem of signs must not merely display structural features pointing to their association with another language, but the scribes must have been able to manipulate individual elements of this subsystem in order to achieve their specific goals. One can argue, for example, that the English spelling *i.e.*, which represents the abbreviation of Latin *id est* 'that is', qualifies as a heterogram under such a definition, because its use, as opposed to *that is*, betrays a formal or academic register of an English written text. On the other hand the use of the *kanji* logograms of Chinese origin in modern Japanese orthography probably does not qualify as a heterographic practice under the same definition. The *kanji* signs are conventionalized in written Japanese and their use does not convey an additional level of meaning or specific connotations. By contrast, our definition of heterogram advocated in Section 1 of our paper accommodates both the rare Latin abbreviations in modern formal English and the *kanji* signs in modern Japanese.

As mentioned above, the non-operational character of Weeden's definition was obvious even to its author. It is impossible to establish on the case-to-case basis whether the Hittite scribes had ulterior thoughts when they used Sumero- or Akkadograms. What is perhaps more important, it does not seem that Weeden's definition follows in any way from the use of the term *heterogram* in the preceding philological tradition. Although Diakonoff's definition of heterogram cited in Section 1 is likewise explicitly teleological, it makes a reference to how the heterograms were to be read, and not to their semantic connotations. The same is true even of the tradition that does not make a distinction between heterographic spellings and alloglottography. The paper where the two notions were arguably conflated for the first time, defines alloglottography as "writing a text in a language different from the language in which it is intended to be read" (Rubio 2007: 33). To be sure, determining the language of scribal oral performance is a challenging task in itself, yet it is far less daunting than trying to guess what the scribe did or did not think every time he had to resort to a heterographic expression. Given the complexity of this problem, one may legitimately wonder whether a special new term for what is called "heterogram" in Weeden (2011) serves any useful purpose at all.

Nevertheless, the distinction between what is defined as *logogram* and *heterogram* in Weeden (2011) raises an interesting question at the conceptual level. What was the social factor that contributed to the retention of Sumero- and Akkadograms in Hittite texts, despite the sufficiency of the syllabic cuneiform inventory for rendering their intended messages? Was it the lingering prestige of Mesopotamian high culture, which would be consistent with the hypothesis of "stylistic connotations"? Or was it the acknowledgement that the heterograms could be deployed for rendering certain fine semantic distinctions, which brings us back to "the additional level of meaning"? Although these two options are treated as different facets of the same phenomenon in Weeden (2011), they are, in fact, substantially different.

The rest of this section will be devoted evaluating the former hypothesis. The assumption that the Sumero- and Akkadograms could intentionally be manipulated for elevating the style of the written Hittite text presumably explains why Weeden reserves the term *heterogram* for the marked use of logograms. *Heterographic orthography* can then be described as the *intentional use of written signs for foreign lexemes* in order to affect the style of the matrix language. Unfortunately, empirical evidence does not appear to yield substantial support to such a scenario.

One prediction that correlates with the stylistic valuation of heterograms would be their higher concentration in those texts that can be regarded as more formal than others. Now van den Hout has shown that the texts emanating from the chancery of Hattusa neatly fall into two groups depending on their genres: those that were frequently copied and those that always exist in a single copy (see e.g. van den Hout 2007: 232). Texts such as royal annals, scripts of religious festivals and state treaties squarely belong to the first group, while letters, inventories, and oracle reports are typical representatives of the second one. If one makes a plausible assumption that regular copying tends to be the destiny of more carefully edited texts, then the Hittite corpus provides us with a mechanical way of discriminating between styles.

The correlation between the two groups and the use of Sumero- and Akkadograms is less straightforward, but nevertheless quite telling. The texts with a moderate number of heterograms occur in both categories, but

those displaying the unusually high proportion of Sumerograms clearly cluster in the second group (the Akkadograms do not appear to be sensitive to style or genre distinctions). The epistolary genre, for example, does not show any predilection for heterographic spellings, but oracle reports and inventory texts certainly do. Thus the abundance of Sumerographic spellings in Hittite appears to correlate not with the acrolect but rather with unembellished technical writing. This speaks against the hypothesis that they were deliberately manipulated in order to affect the stylistic features of Hittite texts.[11]

A different kind of argument for the use of heterograms in Hittite texts as markers of elevated style could have been derived from the absence of Sumero- and Akkadograms in certain genres of Hittite compositions. As a potential parallel one can side the concurrent use of Hittite and Luwian in the kingdom of Hattusa on the eve of its demise. It is fairly likely that the scribes in 13th-century Anatolia had an option of recording a message either in alloglottographic Hittite in the cuneiform on a clay tablet or in native Luwian in the hieroglyphics on a wooden tablet, where the first option marked the more official character of the communication (cf. Waal 2011: 25–28). Furthermore, it is certain that the seals of the Hattusa kings of the same period contained both cuneiform and hieroglyphic legends, whereas the other officials had to content themselves with hieroglyphic legends alone. The lingering presence of the international cuneiform script on royal seals correlated with their importance in diplomatic correspondence. Taken together, these facts plead for the sociolinguistic valuation of the choice of the script in Hattusa, whether or not one wishes to define it in stylistic terms.[12]

Unfortunately, the practice of writing Hittite without resorting to Sumero- and Akkadograms appears to be non-existent. The cuneiform tablets from Hattusa display rather the concurrent use of Akkadian and Hittite as the matrix languages, particularly so in the Old Kingdom period. This practice manifests itself, for instance, through a number of bilingual political texts, such as the Annals of Hattusili I (CTH 4), the Testament of Hattusili I (CTH 6), and the Proclamation of Telipinu II (CTH 19). It has been argued that the most important political documents of the Old Kingdom of Hattusa required the second version in Akkadian as the language of "high culture" (Archi 2010: 42), while the competing theory regards the Akkadian versions of these texts as original and assumes that they were translated into Hittite at a later point as a part of the general shift to vernacular literacy (Popko 2007; van den Hout 2009). But whichever interpretation one chooses, it is clear that the choice between Hittite and Akkadian sometimes represented a matter of tension for the Hattusa scribes. By contrast, once the choice in favor of Hittite had been made, the question whether to stop using heterograms in any stylistic register did not impose itself.

A final test that is conducive to evaluating the problem under discussion is the way overt stylistic marking was used in the Anatolian cuneiform. It is a well-known fact that the Hattusa scribes deployed a special sign 𒌑 (variant 𒌒), known as the Glossenkeil or gloss-wedge, which was frequently although not universally placed next to Luwian words in Hittite texts. According to the hypothesis of Yakubovich (2010: 370), the foreign insertions "received a gloss mark if the scribes considered the embedded language to be less formal than the matrix language. The following hierarchy of formality was commonly accepted: Sumerian/Akkadian > Hittite > Luvian". The main argument for the presence of a level of formality higher than Hittite is the use of the Glossenkeil next to Hittite and Luwian forms in the Akkadian medical text KUB 37.1 (Yakubovich 2010: 371). In this instance, however, there is no doubt that the matrix language is Akkadian rather than Hittite.[13]

11 For the representative selections of oracle reports and inventory texts see e.g. Košak (1982) and van den Hout (1998). The question whether Hittite technical writing represents a style of its own verges on sophism, but if forced to answer it, we would say that it is rather a set of genres defined through their content. Consequently, the frequent use of heterograms in the respective texts does not represent a stylistic marker.

12 It is, unfortunately, impossible to prove by linguistic means in the majority of cases that the hieroglyphic legends on seals are in Luwian, while the cuneiform ones are in Hittite. This is due to the formulaic nature of the legends, which largely consist of personal names and titles, the latter being expressed by hieroglyphic ideograms and cuneiform heterograms. Nevertheless, it seems reasonable to assume that the default association between Luwian and the hieroglyphic script was firmly in place in Hattusa in the 13th century BC (Yakubovich 2008a: 13–14, 31–32). If the choice between the cuneiform and hieroglyphic scripts implied the choice between languages, one cannot define it in stylistic terms. It is, however, possible that at some earlier period the concurrent use of the cuneiform and hieroglyphic legends on seals had purely stylistic rather than linguistic implications.

13 For the edition of KUB 37.1, cf. now Giusfredi (2012). It is appropriate to mention for fairness' sake that a radically different view on the function of the Glossenkeil is found in Zorman (2010). The gloss wedges in Hittite texts are interpreted in this publication as

The appearance of the Glossenkeil in contexts that have a potential relevance to the stylistic valuation of Sumerograms is thus far limited to a single instance. The phonetically spelled form *ša-a-ku-wa* 'eye.ACC.COLL' (KUB 8.81 ii 10) may have been marked in the Hittite version of the Sunassura-treaty (CTH 41) because the idiom *=šan … šakuwa ḫark-* 'to keep an eye (on someone)' is normally spelled with a Sumerogram *=šan …* IGI.ḪI.A-*wa ḫark-* (Yakubovich 2010: 375). But such an exception is precisely of the kind that confirms the rule: the list in van den Hout (2007: 239–247) contains almost four hundred Luwian forms accompanied by gloss wedges. Even if a couple of more marked Hittite forms will be accounted for in the future as unusual syllabic spellings, this will not affect the overall statistics. It seems clear that stylistic judgments pertaining to the appropriateness of heterograms were not on the agenda of the Hattusa chancery and can at best be taken as whims of individual scribes.

Thus the combination of several factors militates against the systematic intentional use of heterograms in Hittite texts for marking the acrolect. It remains to be seen whether they served other meaningful purposes.

4 Heterograms and Semantics

Below we would like to pursue a hypothesis, according to which the Akkadian value of written units can sometimes point to the specific meanings of spoken units, the contrast between which was not phonetically expressed. This function represents, of course, a particular instance of a more general phenomenon, namely the use of non-phonetic spellings for the semantic or pragmatic annotation of texts, which could facilitate their perception. In essence, the extended set of emoticons available nowadays in social network correspondence fulfills a similar purpose. The contrastive function of heterograms may, however, be of particular interest, because it would imply a structural mismatch between the spoken and written varieties of Hittite.

In some cases, the phenomenon in question involves the determinatives. It is, for example, possible to show through syntactic analysis that the noun ^{É}*arzana-* 'inn, brothel' represents a result of hypostasis corresponding to the etymological phrase *arzanas pēr* 'house of porridge' (Yakubovich 2006: 44–45). Presumably, the determinative is used here for discriminating between the meanings 'house' and 'porridge'. Following the same logic, one can hypothesize that KUB 6.41 iii 44 *kūš* $^{LÚ.MEŠ}$*kuirwanaš* 'these vassals' alternating with *kūš* ^{LÚ}*kuirwanaš* in the duplicate KBo 3.4 ii 19 both feature free-standing genitives, the counterpart of which is found with the head-noun e.g. in KUB 24.4 i 16 *kuriwanaš* KUR.KUR-*TIM* 'vassal lands' (Yakubovich 2010: 351). A slightly more baroque case is KBo 10.45 iv 16 $^{LÚ.GUNNI.MEŠ}$*uški*[*ška*]*dalliuš* 'guardians of the hearth', which features a graphic semantic extension of the more usual $^{LÚ.MEŠ}$*uškiškatalluš* 'watchmen' (Yakubovich 2010: 336). The list of heterograms deployed in the formation of contrastive lexical pairs can be easily extended. In what follows, however, we intend to show how the same device could also create grammatical distinctions that did not exist in the spoken language.

As is well known, the cuneiform scribes made a broad use of Akkadian forms for conveying the semantics of Hittite morphological cases in combinations with Sumerographic and Akkadographic nouns, including the pseudo-Akkadographic spellings of proper nouns.[14] Thus, e.g., the Akkadian element *ša*, etymologically a relative particle, found its innovative use as an equivalent of the Hittite genitive, as in (1). In the standard

markers of those lexemes that have been tabooed for semantic reasons. The common association of the Glossenkeil with Luwian foreign words does not receive a direct explanation under this approach. Without further going into the substance of Zorman (2010), it is enough to observe here that accepting the basic claim of this paper would render the evidence of the Glossenkeil fully irrelevant for the issues discussed in the present article.

14 We assume that pseudo-Akkadograms represent vestiges from the period when Akkadian was the main written language in Hattusa and Anatolian proper nouns were embedded in Akkadian texts as stem-forms. This, for example, was the common practice in Akkadian land grants issued in Hattusa in the Old Kingdom period, which are now published in Rüstel / Wilhelm (2012). For the practice of using capital italics for transliterating the stem forms of Anatolian proper nouns see Miller (2013). Note, however, that in this monograph the signs of such stem-forms are separated by dots, whereas the signs of the true Akkadograms are separated by hyphens in the narrow transliteration. On the other hand, the practice of transliterating the stem forms of proper nouns precisely as Akkadograms is implemented in Starke (1985). Compare further a completely different interpretation of the forms under discussion in Patri (2007: 81–95) and its critique in Yakubovich (2012: 391–392).

Hittite transliteration, this Akkadogram is marked as a "morphogram", not determinative, on the assumption that it corresponds to the Hittite genitive ending *-aš*.

(1) *nu* *tuel* *ŠA* ^{m}*MA*[*DDUWA*]*TTA*
and 2SG.GEN GEN Madduwatta
[*idal*]*u* *ḫinkan* *šanḫiškit*
evil.ACC.SG.N death.ACC.SG seek.PST.3SG
'And he continued to seek an [evil] death for you, Madduwatta (lit. 'your [evil] death of Madduwatta')' (KUB 14.1 obv. 2 [MH], Goetze 1928: 2).

Our argument concerns the use of two other Akkadian forms, namely the prepositions *ana* and *ina*, which are both retained in the Hittite cuneiform as the Akkadograms *ANA* and *INA*. In Akkadian, they are both attached to genitive case noun phrases, the former being used in order to express goal and dative argument and the latter in order to express location (see von Soden 1995 § 114). In Old Hittite, by contrast, the locative merged with the dative already in prehistoric times, both in the singular, yielding the ending *-i*, and in the plural, yielding *-aš* (Hoffner / Melchert 2008: 74). On the other hand, Starke (1977) has shown that the distinct allative case existed in Old Hittite for the expression of the goal of movement, being marked there by the ending *-a*. For example, the Old Hittite allative form of the word for 'house' was *parna* and contrasted with the dative/locative form *parni*.

If one proceeds from Weeden's definition of logograms as discussed in Section 1, one would expect that the distribution of the prepositions *ANA* and *INA* in written records corresponds to that of the case endings in spoken Hittite, on the assumption that a logogram is supposed to relate to a certain element of the spoken language rather than to denote a particular meaning. Nevertheless, the attestations of *ANA* and *INA* in early texts show a contrast between dative and locative noun phrases, which had no correspondence in spoken Hittite. Thus, in Old Hittite *ANA* marked dative arguments (1) as opposed to *INA*, which marked locative ones (2), in agreement with the semantics that these prepositions had in Akkadian (Starke 1977: 109–120). In accordance with its inherited function, *ANA* also expressed the Hittite allative case (3). Thus if one maps the data of the spoken and written languages upon each other, one obtains the opposition between the allative (*ANA* ~ *-a*), dative (*ANA* ~ *-i*), and locative (*INA* ~ *-i*) cases in Old Hittite.

(2) *nu=za* DUMU.MUNUS.MEŠ-*ŠA* *ANA* DUMU.NITA.MEŠ-*ŠA* *paiš*
and=PTC daughters-POSS. 3SG.F DAT sons-POSS. 3SG.F give.PST.3SG
'She gave her daughters to her sons' (KBo 22.2 obv. 17 [OS], Holland / Zorman 2007: 31)

(3) *INA* *QATI* DINGIR-*LIM* *ākkiš*
LOC hand god die.PST.3SG
'It died in the hand of a god' (KBo 6.2 iv 3 [OH], Hoffner 1997: 81)

(4) MUNUS.LUGAL-*aš* *ANA* É ^{d}IŠKUR *paizzi*
queen.NOM.SG ALL house Storm-god go.PRS. 3SG
'The queen goes to the house of the Storm-god' (KUB 43.28 ii 6 [OS], Neu 1980: 154)

In New Hittite, the allative case merged with the dative/locative. But the distribution between the prepositions *ANA* and *INA* still did not become random, nor did one of these prepositions take over function of the other one. Our analysis of the Annals of Mursili (CTH 61) and the Apology of Hattusili (CTH 81) suggests that if the noun following the preposition is a pseudo-Akkadographic toponym, then the variant *INA* is used there regardless of whether its implied meaning is the locative, as in (5), or the allative, as in (6). By contrast, the use of *ANA* is normally generalized in these texts before heterographic common nouns. In such a position, *ANA* can likewise convey both the allative function, as in (7), and the locative function, as in (8).[15]

15 Cf. the observation of Weeden (2011: 249) that *INA* never occurs in front of personal names in Hittite texts.

(5) *nu=za* BÀD.KARAŠ *INA* $^{\text{ID}}$*AŠTARPA* *waḫnunun*
and=PTC camp LOC Astarpa river turn.PST.1SG
'I pitched camp at the Astarpa river' (KBo 3.4 ii 47–48 (NH), Goetze 1933: 60).

(6) *kuiēš=ma* NAM.RA.ḪI.A *parā* *INA* $^{\text{URU}}$*PŪRANDA*
which.N.PL=PTC people forth ALL town of Puranda
pāir
go.PST.3PL
'Some people went to the town of Puranda' (KBo 3.4 ii 34–35 [NH], Goetze 1933: 52).

(7) *na=ašta* *kēdaš* *ANA* KUR.KUR.MEŠ *ammuk* *anda*
and=PTC DAT/LOC.PL ALL lands 1SG.ACC into
dāliyat
let.PST.3SG
'[He] sent me into these lands' (KUB 1.1 ii 55 [NH], Otten 1981: 14).

(8) [(*na=an=kan* *ANA*)] $^{\text{GIŠ}}$GIGIR *uaggariyanun*
and=3SG.ACC=PTC LOC chariot rise.against.PST.1SG
našma=an=kan ŠÀ É-*TI* [(*uaqqa*)]*riyanun*
or=3SG.ACC=PTC middle house rise.against.PST.1SG
'Did I ambush[?] him on a chariot, or did I ambush[?] him inside the house?' (KUB 1.4 iii 34–35 [NH], dupl. KUB 1.6 iii 13–14 [NH], Otten 1981: 22)

Particularly ostensive is the following example where *INA* and *ANA* occur side by side next to two coordinated nouns corresponding to the same referent. The only difference between them is that the first one is a pseudo-Akkadographic toponym while the second one is a Sumerographic appellative.

(9) *nu* *INA* $^{\text{URU}}$*APĀŠA* *ANA* URU-*LIM* *ŠA* $^{\text{m}}$*Ūḫḫa*-LÚ
and LOC city of Apasa ALL city GEN Uhha-ziti
andan *pāun*
into go.PST.1SG
'I entered Apasa, city of Uhha-ziti' (KBo 3.4 ii 29–30 [NH], Goetze 1933: 50)

At the same time, certain functions of *INA* and *ANA* originally transferred from the Akkadian texts into the Hittite scribal tradition evaded the redistribution along the lines stated above. Thus the combination *INA* ŠÀ, which corresponds to the Akkadian complex preposition *ina libbi* 'inside' and Hittite *anda*, retains its locative meaning even in New Hittite. In addition, *INA* is normally retained for the expression of time, as in (10), even though it is usually accompanied by Sumerographic appellatives in this function. On the other hand, *ANA* is normally retained for dative arguments, as in (11), regardless of whether or not they precede a proper noun.

(10) *nu* *kī* *INA* MU.1.KAM *iyanun*
and DEM.N.ACC LOC 1 year do.PST.1SG
'I accomplished this in one year' (KBo 3.4 ii 49 [NH], Goetze 1933: 61)

(11) *nu=wa=šmaš* *ANA* $^{\text{m}}$*Ūḫḫa*-LÚ ARAD-*anni* *paiš*[*ta*]
and=QUOT=2PL.ACC DAT Uhha-ziti slave.DAT give.PST.3SG
'And he gave you in service to Uhha-ziti' (KUB 14.16 iii 27 [NH], Goetze 1933: 58)

To be sure, more work is required in order to trace the functional evolution of *ANA* and *INA* through the development of Hittite cuneiform. One thing, however, seems to be clear: the complete identification of these two Akkadograms with specific morphemes in the Hittite language has never taken place. Thus it would not be fair to describe them as "morphograms". The apparent intention of the scribes of all periods was to use these heterograms in order to express functional distinction that were familiar to them from Akkadian texts but lacked formal expression in spoken Hittite. While historically this may merely have been an instance of contact-driven structural imposition, synchronically it can be taken as an element of metalinguistic annota-

tion. The spoken Hittite lost a separate dative case, but it was restored in the written variety of the language.[16]

The considerations made above provide a partial answer to the question why the heterograms were retained throughout the history of the Hittite cuneiform. Far from being mere equivalents of phonetic spellings, they could be deployed in order to convey additional levels of meaning in the written register. The extent of this practice deserves a separate empirical study, but is more important for our present purposes that the impact of such spellings pertained to the level of semantics, not style. If a positive value judgement was indeed attached to the use of heterograms, it was not on account of their foreign origin, but rather because of their potential to improve written communication. In a similar fashion French orthography maintains the distinction between *aimé* (m.) and *aimée* (f.) 'loved' despite the merger between the two participial forms in spoken French. This happens not only because this contrast is archaic, although it surely is, but also because it contributes to the consistency of gender agreement, a redundancy device that helps the readers to process a French text more smoothly.

The observations of this section are not meant to create the impression that the use of Sumero- and Akkadograms in Hittite texts was a matter of enforced language policy. The pressure of conservative scribal tradition was no doubt a more important factor in the retention of heterographic spellings than any attempts to rationalize it. Furthermore, it is likely that some of the heterograms did not correspond directly to any Hittite segments, because occasional Sumero-Akkadian fragments happened also to be preserved in the scribal jargon.[17] Finally, there are instances where the use heterograms demonstrably obfuscates rather than clarifies the understandings of particular segments. For example, the same combination of signs can be read as AN-*ši* = *nepiši* 'in the sky' and DINGIR-*LIM* = *šiuniš* 'god' in New Hittite orthography. This was obviously not an intended result of scribal planning. But if one is forced to choose between semantic and stylistic factors as subsidiary obstacles to the full phonetization of the Hittite script, then it is considerably easier to accommodate the former alternative.

Thus the intentional use of foreign elements specifically because of their foreign character apparently played little if any role in Hittite literacy. Reserving the term heterogram for such elements not only yields a non-operational definition but possibly invokes a phantom, which explains why the definition of heterogram that is tentatively proposed at the beginning of Weeden (2011) is not used in the rest of this monograph. There are, therefore, no obstacles to maintaining *heterogram* as a general cover term for Sumero- and Akkadograms in Hittite texts.

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16 Other examples involving the meanings of Akkadograms that cannot be directly mapped upon the semantic structure of Hittite are discussed in Weeden (2011: 356). These are forms of *ŠAPĀRU* 'to write / to send' and *BANŪ* 'to build / to make'.

17 The question whether all the Hittite cuneiform texts could be read fully in Hittite is discussed in Kudrinski (forthcoming). It is argued there that certain combinations of heterographic noun phrases and Wackernagel clitics resist transposition into well-formed Hittite constructions according to plausible interpretation rules. For example, KBo 28.88+ rev. 17 features the phrase ANŠU.KUR.RA=*wa* ŠA ^{LÚ}UŠ.BAR 'horse of the weaver', where the clitic is attached to the Sumerographic head noun. If this construction were pronounced in Hittite, the Wackernagel clitic =*wa* would be irregularly attached to the second fully stressed word of the clause, since the genuine Hittite word order mandates the placement of the dependent noun 'weaver' in front of its syntactic head 'horse'. It stands to reason that the noun phrase in question was dictated in Sumerian or using the Sumerian word order.

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