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Writing on Wood in Hittite Anatolia

Abstract: This chapter deals with the role of wood as a writing support in Hittite Anatolia. It takes a holistic approach, involving an integrated study of textual, iconographic and archaeological sources, as well as a consideration of the material and social contexts, detailed philological analysis of relevant passages and comparative evidence. Key issues discussed in the study are the complex relationship between scripts and script carriers, and the difficult interpretation of the Sumerogram GIŠ.ḪUR and related terms. These are shown to refer unambiguously to wooden writing boards in the Hittite sources, with a newly reconstructed process of semantic adaptation of the Mesopotamian usage. The appearance and technology of the wooden writing boards are also discussed, and the question of whether boards inscribed with ink may have existed alongside the wax boards. The final section examines the various and multifaceted contexts in which the writing boards were used. Overall, the results of the study suggest that wood was a widely used material as a writing support in Hittite Anatolia, with important implications for the reconstruction of many aspects of administration, economy and cult practices.

1 Words of clay, metal, stone, ink and wax: The Hittite written legacy

1.1 Clay ~ Cuneiform

The principal source of information on the Hittite kingdom, which flourished in Anatolia between the seventeenth and thirteenth century BCE, are the riches of its tablet collections.¹ These amount to c. thirty thousand clay tablets (and frag-

¹ This chapter expands on research that was carried out within the projects ‘Critical edition, digital publication, and systematic analysis of the Hittite cult-inventories’ (German Research Foundation project no. 298302760) and ‘WoW! Writing On Wax’ (Universitätsbund Würzburg, AZ 18-33; see <<https://osf.io/urpuf/wiki/>>, accessed on 4 January 2023), and is deeply intertwined with my previous work on the subject: I beg the reader’s pardon for the horrendous number of self-citations contained in the following pages. Abbreviations follow the *Reallexikon der Assyriologie und Vorderasiatischen Archäologie* (<<https://rla.badw.de/reallexikon/abkuerzungslisten.html>>, accessed on 4 January 2023). All dates are BCE. The customary subdivision

ments) inscribed in cuneiform script and in several languages (Hittite, Luwian, Palaic, Hattian, Hurrian, Akkadian and Sumerian). Most have been recovered at the site of the capital city Hattuša (modern Boğazköy, today Boğazkale in the district of Çorum), with smaller collections and scattered fragments coming from several other sites (Fig. 1).² Importantly, virtually all of them originate from the royal bureaucracy, with only a very few examples of private records. This means that the texts available reflect, either directly or mediately, the interests and outlook of the central administration, a fact which makes it very difficult to grasp the views of other sectors of the society. Some cuneiform tablets of special importance, for example, in the case of a state treaty, were made of metal, but only a single example, the so-called Bronze Tablet containing the treaty between Tudhaliya IV and Kuruntiya (Bo 86/99),³ has been recovered so far. Of course, the wedges could not be impressed on metal tablets but were, instead, incised.

The extant texts are customarily subdivided into modern categories, or ‘genres’, according to their content. The following breakdown derives basically from the *Catalogue des Textes Hittites (CTH)* initiated by Emmanuel Laroche and includes festival instructions (6735 = 28.6%), ritual instructions (3972 = 16.9%), texts in the Hattian, Luwian, Palaic and Hurrian languages (1770 = 7.5%), man-tic texts (1587 = 6.7%), historical texts (1572 = 6.7%), administrative texts (697 = 3.0%), cult inventories (638 = 2.7%), myths (522 = 2.2%), Sumerian and Akkadian literature (326 = 1.4%), hymns and prayers (233 = 1.0%), scholarly texts (161 = 0.7%), juridical texts (135 = 0.6%), and, finally, a consistent number of texts of indeterminate and miscellaneous character (5211 = 22.1%), for a total of 23,559 fragments.⁴

into Old Kingdom (seventeenth–sixteenth century), early New Kingdom (fifteenth century) and Empire period (fourteenth–thirteenth century) is used when referring to Hittite historical phases (for a complete chart of the Hittite kings and synchronisms with Egypt and Assyria, see ‘The Hittite Royal House’ at <<https://osf.io/j7b3x>>, accessed on 4 January 2023). As is customary in Hittitological literature, Sumerograms in Hittite contexts are transcribed in capital letters.

² For an overview and previous literature, see Klinger 2022a; an interactive map by Dario Fossati is available at <<http://www.hittiteepigraphs.com>> (accessed on 4 January 2023).

³ See Otten 1988.

⁴ According to Miller 2017, 69, drawing on data from Silvin Košak’s *Konkordanz der hethitischen Keilschrifttafeln* (www.hethport.uni-wuerzburg.de/hetkonk/, accessed on 12 October 2023); the texts may be grouped differently, depending on the modern categories chosen for creating the breakdown.



Fig. 1: Map of the sites mentioned in the article. Modern names are in cursive.

The Hittite royal administration elaborated its own principles concerning the production and management of written records. The Hittite tablet collections seem to have been informed by pragmatic principles, which have been intensely investigated by Theo van den Hout in recent years:

The roots of Hittite scholarship and probably most of the actual process of knowledge collecting were practical in nature. Just as the Hittite state maintained a well-trained army for its military needs, a priesthood for its religious functions, or a kitchen staff for the daily sustenance of its ruling class and retainers, just so it maintained a relatively small research department staffed by what we would call learned men who were charged with gathering and maintaining information that might be of use to solve problems that were difficult to address by any other means or where such means had not worked.⁵

Thus, the criterion for the selective reception of foreign compositions, such as ritual and medical texts, seems to have been their potential applicability (e.g. in the case of the king's illness), while the bulk of the extant tablets, consisting of

⁵ Van den Hout 2015, 222–223.

incantation rituals, festival instructions and mantic texts, served primarily the fulfilment of cult regulations, first and foremost, the appropriate celebration of both regular and ad hoc religious rites as well as the correct decipherment of the gods' will.⁶ A practical function can also be recognised in the other attested genres, particularly administrative (including letters and palace inventories), juridical and even historical texts.⁷ Thus, according to Theo van den Hout, the Hittite written legacy may best be characterised as an 'archival library' (German *Dienstbibliothek*), i.e. a collection of documents 'assembled to better perform the task of the administration', thus, to better serve the state and its ruling class.⁸ Such a collection presented elements of both an archive and a library, insofar as it included tablets which were automatically kept and stored after being produced (which is a defining feature of archives) as well as tablets that were actively selected by the personnel (which is a defining feature of libraries).⁹ The collections, distributed across multiple locations in the Hittite capital, included both longer-term and ephemeral records, the former category usually consisting of texts which had been recopied over time and often had a complex tradition.¹⁰ A basic distinction can be advocated among the personnel that produced the Hittite tablet collections: that between scribal craftsmen and scholar-scribes.¹¹ The latter class was constituted by elite scribes, supervising the work of the scribal craftsmen and being devoted to scholarly activity besides the production of tablets.¹²

1.2 Metal, stone and ink ~ Hieroglyphs

Despite their pre-eminence in the extant record, however, clay tablets were not the only type of inscribed artefacts or cuneiform the only script in use in Hittite Anatolia. One relevant class of inscribed artefacts in addition to clay tablets is represented by seals and sealings. Seals made of metal or stone and in different shapes represented the prime strategy for securing and authenticating, and were, therefore, at the core of legal and administrative processes.

⁶ Schwemer 2013, 164; van den Hout 2015, 223.

⁷ Van den Hout 2011, 77–78.

⁸ Van den Hout 2015, 224.

⁹ Van den Hout 2011, 77.

¹⁰ Van den Hout 2002; van den Hout 2015, 205.

¹¹ Van den Hout 2015.

¹² Gordin 2015 presents a thorough study of two of these scribal circles.

The most widespread type of seal in Anatolia was the stamp seal, a circumstance that is nicely reflected in the Hittite word for ‘seal’, *šiyatar*, literally ‘pressing’.¹³ Two types of sealing are of special relevance for the analysis of the Hittite material (Fig. 2). The first type is conical *cretulae* formed around the knot of a cord. Examination of original tablets shows that sealings of this kind were suspended from official documents, such as contracts or royal grants, having been sealed by the contracting parties or the witnesses. Other applications are possible, including using them for sealing doors and gates. The second type of sealing attested in the Hittite material is clay lumps which were applied directly to the objects to be sealed, for example, chests, boxes and door bolts, in order to authenticate their content and guarantee their integrity and privacy.¹⁴ An appropriate label for this type of sealings is ‘clay stoppers’.¹⁵ Importantly, sealings were sometimes combined with written documents: the discussion in Section 2 will provide several examples of this practice. Mark Weeden counts more than seven thousand extant Hittite seals and sealings.¹⁶

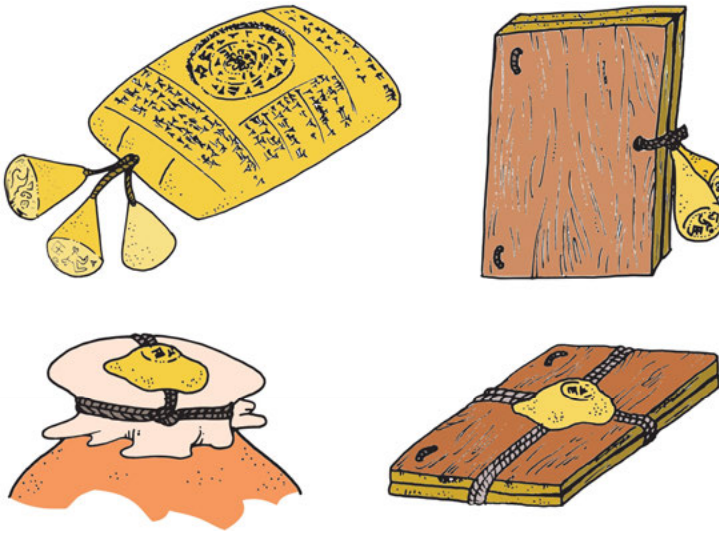


Fig. 2: Reconstructed sealing contexts, involving conical *cretulae* and clay stoppers. For the tentative reconstruction of sealing practices involving clay tablets and wooden boards, see §2.10.

¹³ Güterbock 1980.

¹⁴ Otto 2011.

¹⁵ German *Tonverschlüsse*; the term ‘clay stopper’ follows Weeden 2018.

¹⁶ Weeden 2018, 51, 66.

Only cuneiform script and isolated symbols with auspicious meaning were employed on seals in the period up to Arnuwanda I (fifteenth century), however, starting with Tudhaliya I, a second script begins to appear on seals, also subsequently in inscriptions on stone: the so-called Anatolian hieroglyphs, a linear script which was invented in Anatolia, probably in the context of the mixed Hittite-Luwian royal chancery, and is characterised by highly iconic signs, employed in a logosyllabic writing system.¹⁷ All hieroglyphic inscriptions that can be attributed with certainty to a specific language are written in Luwian and date from the thirteenth century onwards (note that short inscriptions, notably on seals, mostly consisting of names and logographically written titles, lack any evidence for the language of reading).¹⁸ The bulk of the extant Bronze Age hieroglyphic inscriptions comes from seal impressions.¹⁹ Royal seals of the Empire period have digraphic, cuneiform and hieroglyphic legends, and non-royal seals have only hieroglyphic legends. In addition to these, hieroglyphic inscriptions are attested on stone (notably on rock reliefs, from Muwattalli II onwards) and metal vessels and tools (of which only a few survive). Another technique attested for writing hieroglyphs is painting with a brush. This technique is attested in short inscriptions painted in a reddish colour on the inner walls of Building A at Kayalıpınar (of ephemeral character, predating the fourteenth century) and in the Yerkapı tunnel at Boğazköy, and may have been used on clay and possibly wooden boards as well (see below, Section 2.11). It is currently assumed that the stage of development of the system up to the late Empire period (thirteenth century) did not allow writing texts with a complex syntax and was, therefore, only suitable for syntactically non-demanding texts, such as names, titles, short dedicatory inscriptions and simple lists.²⁰

17 For an overview and previous literature, see van den Hout 2020, 120–134.

18 Hawkins 2003, 140–141.

19 Hawkins 2003, 138–146.

20 Yakubovich 2008; lastly Melchert 2020b, 240–241 with literature. Waal 2012; Waal 2022, 134, 142, argues differently for the existence of a hieroglyphic writing system capable of expressing complex texts in the Old Hittite period at the latest, and possibly even already in the Old Assyrian period (twentieth to eighteenth century). However, Waal (2022, 134) concedes that there are no hieroglyphic texts that can be read phonetically and are convincingly dated to the Old Hittite period. The theory, then, relies on a single scribble on an Old Assyrian vase, which allegedly conveys a personal name by means of logosyllabic signs (Poetto 2019), but there is strong disagreement on whether those marks can be interpreted as ‘writing’ at all (see Simon 2020, 50–51 and Hawkins forthcoming, who also stresses how a note published under his name in Kulakoğlu and Kangal 2010, 96, was neither intended or submitted for publication nor reflects his view on them). Therefore, to argue that a proper hieroglyphic writing system was already in use in that period is very conjectural, to say the least.

1.3 On writing and a ‘wooden guest’

The duality represented by the two scripts in use in Hittite Anatolia, with the inherently different writing techniques associated with them, is mirrored in two of the attested verbs for ‘writing’, GUL-š- (/kwans-/) and *ḫazziye/a-*. As has already been argued by Massimiliano Marazzi,²¹ their use correlates primarily with the different biomechanical acts of ‘drawing furrows’ (GUL-š-) and ‘piercing, striking’ (*ḫazziye/a-*). Thus, *ḫazziye/a-* is associated primarily with the idea of writing in cuneiform, since wedges are produced by repeatedly impressing a squared tip in a malleable material, whereas GUL-š- is associated principally with linear scripts, where the signs are produced by ‘drawing’ with a pointed tip (or a brush) on the writing surface. However, both verbs can also be used in a non-specific way, i.e. with no necessary implications regarding the use of a particular kind of script. To conclude that *all* attestations of GUL-š- always refer to hieroglyphic script while those with *ḫazziye/a-* always refer to cuneiform is, therefore, unwarranted.²²

²¹ Marazzi 1994.

²² Cammarosano et al. 2019, 144. Waal 2022, 144, maintains differently that the distribution of the occurrences of the verb GUL-š-, and particularly the fact that it is never attested in relation to *tuppi*, DUB and *TUPPUM* ‘tablet’, should be taken as a strong argument for concluding that GUL-š- refers invariably to hieroglyphic writing. However, while it is true that the occurrences of *tuppi*, DUB and *TUPPUM* are numerous, the related verbs are, in all but two cases, ‘neutral’ verbs such as *iya-* ‘to make, to write’, not *ḫazziye/a-* (see Waal 2011, 24). Therefore, the fact that no occurrence of GUL-š- is related explicitly to *tuppi*, DUB or *TUPPUM* (against two occurrences of *ḫazziye/a-* with *tuppi*) hardly has a statistical relevance when assessing the semantics of the verb. Additionally and most importantly, not only the type of script (hieroglyphic vs cuneiform) but also the materiality of the script carrier (clay vs wood/wax) can be a factor impacting on the semantics and usage of this verb, and this is precisely what the evidence suggests happened. In the scenario I proposed in 2019, the verb GUL-š-, which is etymologically related to the act of ‘drawing’ lines, would have been originally associated with wooden boards since this was the medium used for ‘drawing’ (marks, and, from some point on, hieroglyphic writing proper), while clay tablets were only used for cuneiform. If this is a plausible scenario, then it is perfectly natural to assume that GUL-š- happened to be primarily associated with wooden boards independently of the script employed on them in specific instances; thus, it may well have been used in relation to wax boards written in cuneiform as well (cf. e.g. the word ‘pen’, which betrays its early connection to feathers while being used today to refer to implements for which no bird has to be plucked ...). This general and abstract conclusion, i.e. that GUL-š- does not always necessarily refer to hieroglyphic writing, must be kept in mind when we encounter references to manuscripts that, based on independent (particularly linguistic and palaeographic) arguments, were most likely written in cuneiform not hieroglyphic script. This is the case, for example, of the *ambašši* offering ritual, which, on a tablet dating to the early New Kingdom, is said to be ‘inscribed’ on a wax board (*IŠTU* ^{GIS}*LE-E-EḪ* GUL-š*an*, KUB 15.34+ iv 56–57, dis-

The overview presented so far does not exhaust the arsenal of writing technologies used by the Hittites. Indeed, a veritable ‘wooden guest’ is missing from the catalogue, namely, wooden writing boards, of which not a single example has been recovered so far. This paper is devoted to them. The evidence about Hittite wooden writing boards is particularly intricate, but precisely this makes the analysis so relevant and rewarding. As will be shown in the following sections, Hittite wooden writing boards involved both cuneiform and hieroglyphic script and were deeply intertwined with clay tablets and other media. Most importantly, however, they interacted in complex and sometimes unexpected ways with the surrounding ‘material world’: precisely this interaction, which has far-reaching implications for our understanding of fundamental aspects of Hittite literacy, scribal culture and administration, will be at the core of the investigation.

2 Wax boards

2.1 Prologue: Wax boards in Mesopotamia

It is conducive to start our journey by briefly recapitulating the earliest history of a particular kind of wooden writing board, namely, wax boards.²³ The writing technology that is conventionally labelled here as ‘wax board’ was invented in the cuneiform scribal tradition of the Ur III state at the end of the third millennium, and spread increasingly across all cuneiform cultures. Wax boards consisted either of a single leaf or of multi-leaf board books (including ‘concertinas’), generally made of wood or ivory, where each leaf was provided with a recessed frame accommodating a beeswax-based layer to be inscribed either in cuneiform with a squared-tip stylus or in a linear script (e.g. Aramaic) with a pointed-tip stylus. Since the signs are produced by impression or incision, re-

cussed in Cammarosano et al. 2019, 138, with n. 169). That GUL-š- is explicitly connected with wooden boards in this and similar occurrences seems to be no chance, and fits well with the scenario sketched above on independent grounds (see Cammarosano et al. 2019, 138–139, 143–144). On the contrary, those who stick to the unnecessary assumption that GUL-š- always refers to hieroglyphic writing must posit the existence of a developed hieroglyphic writing system already in the pre-Imperial period, which is most unlikely at the current state of our knowledge (see above, n. 20). For the reading of GUL-š- as /kwans-/, see below, Section 2.6, n. 69.

²³ For the use and writing technology of wax boards in Mesopotamia, see Cammarosano et al. 2019 with further literature; now also Michałowski 2021, 77–82 (general overview); Zimmermann 2022 (use of wax boards in relation to Middle Babylonian *kudurru* stones).

spectively, they could be easily erased and rewritten *ad libitum* simply by flattening the surface and reinscribing it anew, a feature that made them especially appreciated for writing accounts that needed to be periodically updated and texts that had to be transported over long distances. Similar to later periods, however, wax boards were also used for long-lived texts, including literary, scholarly and legal texts. The standard terms for a wax board in Mesopotamia are Akkadian *lē'um* and Sumerian *gis'da*.

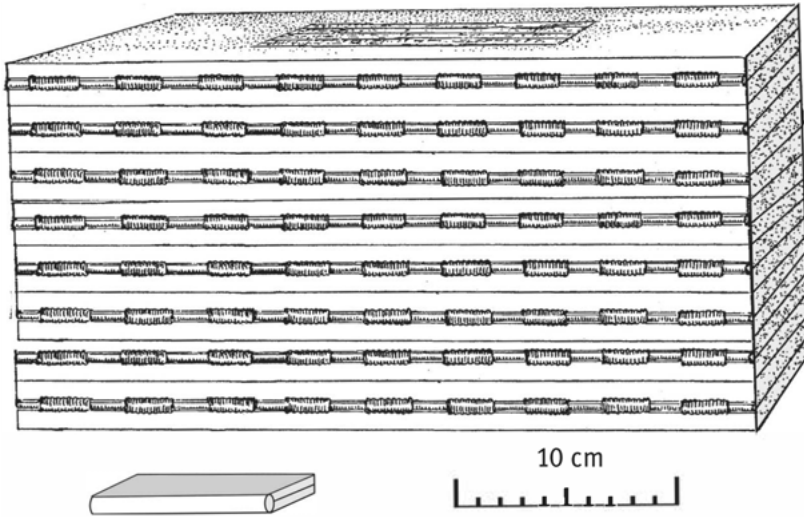


Fig. 3: Reconstruction of the set resulting from the wax polyptych from Nimrud (assuming that it was constituted by sixteen leaves, drawing by Howard 1955), compared to the smaller ivory diptych from Aššur, reconstructed based on the ivory leaf VA Ass 3541 of the Vorderasiatisches Museum, Berlin. For more details, see Cammarosano et al. 2019.

A high degree of variability and a trial-and-error approach have to be assumed for the ‘technology of wax paste’ in ancient West Asia, similar to what is observed for later periods. The wax paste was plausibly composed of beeswax and ochre in many if not most contexts, with orpiment (arsenic sulphide, imitating gold) reserved for luxury boards. Oil and other substances may have occasionally been used as well. Since any squared edge is suitable for impressing wedges, styli which were used for writing cuneiform on clay could also be used to write on wax boards. However, under certain conditions of temperature and composition of the wax paste, the use of an oil-based release agent is necessary in order

to prevent the stylus from sticking to the wax surface and, thus, disrupting the contours of the wedges (Fig. 4).²⁴



Fig. 4: Top left: reconstruction of a Neo-Assyrian diptych (reconstruction of leaves and hinge: Gert Jendritzki; wax layer: Michele Cammarosano and Katja Weirauch) based on the ivory leaf VA Ass 3541 (Vorderasiatisches Museum, Berlin); top right: detail of a Neo-Assyrian scribe holding a wax diptych and a ‘grooved stylus’ from a wall panel from Nineveh (BM 124956, © The Trustees of the British Museum). Bottom: close-ups of experimental wax boards containing beeswax and yellow ochre (first and third snapshot: 7% yellow ochre; second and fourth snapshot: 50% yellow ochre) and inscribed with styli of reed, wood, bone and brass, showing the difference in the appearance of the wedges depending on whether a release agent made of date syrup, ghee and sesame oil is used (first and second snapshots) or not (third and fourth snapshots, arrows mark imperfections). For more details, see Cammarosano et al. 2019.

2.2 The *lē’u*-boards

Since wax boards were present in the Old Assyrian scribal tradition, it stands to reason that knowledge of this medium already existed in Anatolia in that period

²⁴ Cammarosano et al. 2019, 153–168.

(twentieth to eighteenth century), but it is currently impossible to state with certainty whether and to which extent they may have been used by Anatolians at that time.²⁵ But, at the latest, when King Hattušili I passed the Taurus with his army and reached the cities of Syria and Mesopotamia in the seventeenth century, the Hittites must have encountered wax boards.²⁶ Their knowledge, if not actual tables, was then imported into Anatolia together with the art of cuneiform writing and related Mesopotamian cultural products, to be advantageously adapted and employed in the newly founded chancery at Hattuša.

Although no archaeological example has been recovered so far, the assumption that wax boards were used in Hittite Anatolia is undisputed. Straightforward evidence for this is the use of the Akkadian term *lē'u* in Hittite texts (in the Akkadographic spellings ^{GIS}LE-E-EḪ and ^{GIS}LE-EḪ-E, from the early New Kingdom, as well as in the pseudo-Sumerographic spelling ^{GIS}LE.U₅ in the late Empire).²⁷ The contexts are cult protocols and rituals being written on, or copied from, a *LĒ'U* board, of *LĒ'U* boards used as inventories of goods, of a diplomatic agreement written on a *LĒ'U* board,²⁸ and of *LĒ'U* boards which officials traveling on state business used for validating operations of the withdrawal of state commodities.²⁹ The record of depositions given in the court case promoted by Queen Puduḫepa against the officer Ura-Tarḫunta and his father Ukkura (*CTH* 293)

25 For the still unclear question related to the Old Assyrian *išurtum* documents, see Veenhof 1995; Waal 2012; Cammarosano et al. 2019, 134–136; Veenhof 2020, 141–143; and Michel 2022, 85–87. Waal (2022, 142) recalls that cuneiform wax boards are referred to as ‘tablets of wax’ (*tuppu ša iškurim*) in the Old Assyrian sources, so, the use of *išurtum* in addition to *tuppu ša iškurim* must imply a difference between the two types of documents. However, apart from the consideration that only two instances of *tuppu ša iškurim* are known and none of them co-occurs with *išurtum* (therefore, at least in principle, they might be synonyms), nothing forces us to assume that the difference must pertain to the writing system used on them. Instead, it may pertain, for example, to a different format, aspect or other property of the ‘hardware’ (see the tentative scenario proposed in Cammarosano et al. 2019, 135–136, which also takes into account that the *išurtum* documents occur in contexts involving Anatolians).

26 Importantly, the use of wax boards is attested at Alalakh VII, see ATaB 43.12 (=ATT 82/9) obv. 4: Dietrich and Loretz 2006, 121. Lauinger 2015, 44, observes that ‘This evidence for the use of wooden writing boards at Old Babylonian Alalakh raises important questions as to the scope of the administrative material that is preserved on clay’. Interestingly, the interplay between wax board and clay tablet is here similar to that attested in IBoT 1.31, on which see below, Section 2.4.

27 For the use of AḪ for Akkadian ‘a, ‘e, ‘i, ‘u, see HZL no. 332, with literature.

28 KBo 4.14 i 25 (a late Empire treaty or diplomatic agreement with an unknown partner), referring to a previous text, presumably a forerunner of the agreement itself, which was written (GUL-š-) on a ^{GIS}LE.U₅.

29 Cammarosano et al. 2019, 138–139; van den Hout 2020, 207–209.

are especially remarkable. Ura-Tarḫunta is charged with the failure to keep a proper documentation of his activities while receiving and distributing commodities entrusted to him by the crown. The declarations made by Ukkura imply that the standards of good practice expected from state officials involved the use of sealed written documents, namely, receipts and wooden writing boards, and that accounting procedures consisted of a combined usage of sealing practices and boards:

For the horses and mules in my custody I had *LĒ'U* boards and a receipt, sealed. They sent me to Babylonia. [...] When they sent me to Babylonia, I sealed the *LĒ'U* boards that I had concerning the horses and mules. But while I was going to Babylonia and back, I did not seal them any further. The receipt, too, was not sealed. For that very reason I did not pay close attention. As soon as the horses and mules arrive, I will seal them in the same way. It was presumptuous of me, but it was not a deliberate offence.³⁰

The combination of writing boards and sealing is a very important aspect. It shows that writing boards, once sealed, were considered to be 'secured' and safe from manipulation, thus, perfectly suitable to be used for confidential content and as legally binding, authoritative documents.³¹

2.3 Hieroglyphic styli

Both cuneiform and hieroglyphic script were in use in Anatolia, thus, an interesting question is whether both of them were used on wax boards. The answer must be in the affirmative. The use of cuneiform is virtually assured from the fact that many passages referring to wax boards pertain to texts of higher syntactic complexity, which, according to the present model of the development of Anatolian hieroglyphic writing, could hardly have been expressed other than in cuneiform at that time.³²

30 KUB 13.35+ i 15–17 (§2) and iv 35–44 (§28), Werner 1967, 4–5, 14–15; translation after Hoffner 2003, 57, 60, with modifications.

31 For tentative reconstructions of these sealing practices, see Fig. 2 above. This aspect, which can be also observed in later civilisations using wax boards (e.g. Greece and Rome), is often imperfectly recognised in literature, with the option of erasing and rewriting signs on the wax layer taken as an element that makes wax boards inherently 'insecure'.

32 As has been seen in §1.2, we observe a development from the use of isolated signs as auspicious marks (from the Old Hittite period) to simple text strings for names and lists (from the early New Kingdom) and, finally, syntactically complex inscriptions in the Empire period.



Fig. 5: Left: detail from the stela of Tarḫuپیya, Maraş, eighth century (Louvre AO 19222, CHLI MARAŞ 9); right: bronze stylus from the Upper Town of Boğazköy, Empire period, length 16.45 cm (Bo 84/531).³³

But hieroglyphs were also used on wax boards. Indeed, a piece of immediate evidence for the use of this medium are several bronze implements recovered at multiple Hittite sites (Boğazköy, Alaca Höyük, Kuşaklı and Ortaköy), typically in contexts where cuneiform tablets have also been found. These implements have a pointed tip and a spatula-like flattened end at the back, are between 8.5 and 23.6 cm long, and often decorated at the juncture of shaft and spatula. In my opinion, the only plausible interpretation is that they are styli used for writing Anatolian hieroglyphs (because of the pointed tip, which is not suitable for impressing wedges) on wax boards (because of the back-end spatula, arguably

³³ Herboldt and von Wickede 2021, pl. 78.5.

used for erasing signs in case a correction was needed). This interpretation is corroborated by iconographic evidence from the Neo-Hittite kingdom of Gurgum (modern Maraş), showing scribes holding wax boards and styluses that are identical to the tools under discussion (Fig. 5), and has relevant implications for the appraisal of the diffusion of the hieroglyphic script as well as for the study of administrative procedures.³⁴

2.4 Conflicting views on the Sumerogram GIŠ.ḪUR

Having established that wax boards were present and that they were used for writing in both cuneiform and hieroglyphic script, we can move on to examine a much discussed term that bears a great relevance for the analysis of writing practices in Hittite Anatolia, i.e. the Sumerogram GIŠ.ḪUR (Sumerian *ĝeš-ḫur*). Similar to *LĒ'U*, this term is attested from the early New Kingdom, with the majority of occurrences found in late Empire texts. Like most other logograms used by Hittite scribes, GIŠ.ḪUR was also imported from the Mesopotamian cuneiform tradition. Its Anatolian semantics, however, do not entirely correspond to the Mesopotamian usage. While GIŠ.ḪUR and the corresponding Akkadian noun *uṣurtum* had the meaning 'drawing, design, plan, regulations ordinance' in Mesopotamia,³⁵ the contexts in which GIŠ.ḪUR is used in Hittite texts show that it denoted a particular kind of written document. Two hypotheses exist in the current debate: one, championed by Theo van den Hout, considers that GIŠ.ḪUR in Hittite texts denotes an 'authoritative' document in diplomatic terms (i.e. from the perspective of diplomatics),

an official, state-issued, and legally authentic document that could have different formats and functions depending on the situation. It could be a list, an order, legal evidence – sometimes sealed but not always – but the bottom-line was its authoritative status.³⁶

34 Cammarosano et al. 2019, 133–134, 141–142; for a detailed study, see Cammarosano forthcoming. New examples from the Upper City of Hattuša have been published in Herbordt and von Wickede 2021, 223–224. Van den Hout 2020, 211, suggests that they may be surgical instruments instead, but their number and contexts of recovery speak against this interpretation. Note that a stylus identical to these is also found on the stone panel from the 'Ana Island IM 132177, dating to the reign of Ninurta-kudurri-uṣur (eighth century) or possibly his father Šamaš-rēša-uṣur, which depicts a scribe who is writing in Aramaic on a wax board in the context of a battle scene, see Cammarosano et al. 2019, 134–135.

35 For the important question of the semantics of Sumerian *ĝeš-ḫur*, see below, Section 2.6.

36 Van den Hout 2020, 189 with literature.

The second one, to which the present author adheres, views GIŠ.ḪUR as a term denoting wooden – and arguably waxed – writing boards.³⁷

It is interesting to note how reluctant scholars are to decide between the two interpretations. Clelia Mora and Jörg Klinger, in their contributions on ‘Anatolian Hieroglyphic Documentation’ and ‘The Hittite Writing Traditions of Cuneiform Documents’, respectively, within the newly published *Handbook Hittite Empire*, devote very few words to the issue of wooden writing boards.³⁸ Mora, in particular, has shifted from an endorsement of Marazzi’s thesis (viewing GIŠ.ḪUR as a term denoting both a draft or programme and a wooden writing board)³⁹ to an endorsement of the thesis of van den Hout,⁴⁰ ultimately resulting in an agnostic stance about the materiality of the objects on which the documents referred to in the relevant passages were written.⁴¹ In the most recent treatment of this issue, James Burgin explicitly refrains from adjudicating between the two interpretations.⁴²

Settling the interpretation of GIŠ.ḪUR is very important for assessing the diffusion of wooden writing boards within Hittite literacy and administration, not only because of the number of occurrences involved (much more than for *LĒ’U*), but also because it bears upon the interpretation of several words for which GIŠ.ḪUR functions as a determinative (see below, Section 2.7). It seems

37 Cammarosano et al. 2019, 136–138 with literature.

38 Mora 2022, 62 with n. 49–50; Klinger 2022a, 120 (‘Unsurprisingly, no material proof of such wooden tablets has been discovered so far, so that their existence, their possible form, or the function of these ‘wooden tablet scribes’ are all controversially discussed’), with reference to studies by van den Hout and Waal in n. 100.

39 Marazzi 1994.

40 Van den Hout 2020.

41 See Mora 2007, 538–539, with n. 10 (with GIŠ.ḪUR left untranslated in the discussed passages); Mora 2022, 62, states that ‘The possibility that Anatolian hieroglyphic writing was also used on (waxed) wooden tablets has long been debated. [...] I personally do not believe that there is currently sufficient data to support such a hypothesis, but a discussion here would be difficult (it would even take up too many pages). I therefore limit myself to referring to the recent book by van den Hout (2020), Ch. 10 (pp. 184–217), where the long discussion on “The Wooden Writing Boards” (with reference to the AH writing) ends with the following words: “All three materials” (i.e. clay tablets, wooden writing boards, metal tablets, mentioned just before) “were inscribed with cuneiform script although the occasional use of hieroglyphs on wood can be neither excluded nor proven”. This opinion, which is very well argued by the author in his discussion, seems to be fully acceptable’. This implies, importantly, that Clelia Mora implicitly considers that the bronze implements discussed above are not writing styli (otherwise, at least the ‘occasional’ use of hieroglyphs on wood should have been regarded as proven).

42 Burgin 2022a, 388–392.

appropriate, therefore, to examine the issue anew and address the objections that have been raised in detail.

A first observation is that the hypothesis according to which GIŠ.ḪUR denotes an ‘authoritative document’, irrespective of its materiality, can hardly be disproved. Since virtually all Hittite tablets emanate from the royal administration, they configure, per definition, ‘official, state-issued, and legally authentic document(s)’. Thus, there will always be a particular perspective from which a tablet can be considered ‘authoritative’ in diplomatic terms.⁴³ A telling example is found in the ritual KUB 17.18 iii 14–18 // KUB 60.161 ii 36–40 (CTH 448), where the ‘portion’ of cult offerings of the ritual patron is noted on two GIŠ.ḪUR-documents, which are subsequently hung on a sheep and a billy goat to be buried in a pit.⁴⁴ The fact that wooden tags arguably fit the context here better than clay tablets bears little significance upon the issue of the authoritativeness of the documents, since they have an authoritative nature in the logic of the ritual procedure, and authoritativeness is not necessarily dependent on the material. The two arguments, therefore, pertain to different levels, and neither can prove or disprove the other.

At this juncture it has to be stressed that, on the one hand, all passages involving GIŠ.ḪUR documents refer to situations which have historically been typical contexts for wax boards, but, on the other hand, these GIŠ.ḪUR documents do not seem to have a particularly ‘authoritative’ status compared to those denoted with the term *tuppi*, i.e. the loanword from Sumerian *dub* and Akkadian *tuppum* meaning, by default, ‘clay tablet’. A particularly telling example is found in the palace inventory IBoT 1.31. The text refers to two chests with luxury items. Each one has been inventoried on a GIŠ.ḪUR and, upon arri-

⁴³ Burgin 2022a, 388–389, warns that ‘one must be very clear about what is understood by “authoritative” in a diplomatic context. An incautious reading could confuse the term with “official”. [...] Only sealed tablets such as the land-grants, the Bronze Tablet, and other tablets preserving evidence of once having sealed bullae attached can confidently be placed into the “authoritative” category’. On p. 391, however, he considers the *GUL-zattar* documents cited in KUB 42.100+ in the context of an archival crosscheck to be authoritative documents, although nothing hints at the presence of sealings, and observes that the *gurta* documents from the reign of Muwattalli II cited in the same passage, being earlier records, ‘had presumably the greater authority due to their antiquity’. The problem is that it is impossible to clearly discriminate between authoritative and non-authoritative documents in a strictly diplomatic sense, simply because we are not aware of the criteria by which the Hittites did so (assuming they ever did).

⁴⁴ Van den Hout 2020, 193, with literature (but see Melchert forthcoming, cited in Cammarosano et al. 2019, 137, n. 154, for the interpretation of *latti-* as ‘portion’ instead of ‘tribe’).

val into the royal storehouse, their contents (or, at the very least, their arrival) are to be registered on a *tuppi*:⁴⁵

One large red (reed) container (on) lion feet, tribute; in (it) are linen textiles from the land of Amurru; inscribed (*gulaššan*) on a GIŠ.ḪUR. [...] One large red (reed) container (on) lion feet, tax from the town of Ankuwa; a number of textile(s), inscribed on a GIŠ.ḪUR. Thus (orders) the queen: ‘When I will put it in the storehouse, they will record it on a (clay) tablet (*tuppiaz anianzi*)’.⁴⁶

Here, once again, it is only natural to interpret the use of GIŠ.ḪUR vs *tuppi* in the light of a duality of wooden boards (used for the provisional inventories travelling together with the chests) vis-à-vis clay tablets (used for the final record made upon arrival). Not quite so, in my opinion, if we try to connect the choice of GIŠ.ḪUR vs *tuppi* with an alleged perception of different levels of authoritativeness. In this scenario, why should the provisional inventories have had a more authoritative status than the final record? One would rather expect the opposite.⁴⁷ Van den Hout tentatively explains it with the notion that *tuppi* is a more general term than GIŠ.ḪUR, so that ‘every GIŠ.ḪUR is a *tuppi* but not every *tuppi* a GIŠ.ḪUR’, thus, resulting in the already noted impossibility of identifying any apparent ratio for the use of these terms in the passages at stake.⁴⁸

45 Van den Hout 2020, 182, 192; lastly, Burgin 2022b, 37–47.

46 IBoT 1.31 obv. 2–3, 12–15, palace inventory, translation by van den Hout 2020, 192, with modifications. The context suggests that *tuppi* refers here to a clay tablet, although the term can, in principle, refer to tablets of other materials as well (see the discussion below).

47 An interesting case among many possible parallels is that of the shorthand notes used in the process of recording the sessions of German parliaments in the nineteenth and twentieth century, currently being investigated in the research project ‘Parliamentary Shorthand Writing as Material and Political Practice’ led by Markus Friedrich at the CSMC in Hamburg. The project presentation notes that ‘this study of shorthand writing tackles the competition between immediate shorthand records and longhand versions for the status of the original. While the material object that resulted from shorthand protocolling – a shorthand manuscript – was undoubtedly the most direct (and, one might think, most “original”) material trace of the oral debate, officials did not consider it the original. *What came to be known as “original” protocols of Parliamentary debates were the longhand versions based on shorthand records revised, compiled, and altered into an authoritative record*’ (emphasis mine; <<https://www.csmc.uni-hamburg.de/written-artefacts/research-fields/field-c/rfc05.html>> [accessed on 24 September 2022]).

48 Van den Hout 2020, 192, discussing the use of the two terms in KUB 21.38 (see below), a case to which IBoT 1.31 ‘may be similar’. That the content of the *tuppi* drafted when the chests arrive cannot be precisely reconstructed, is irrelevant to our question. Admittedly, the fact that *tuppi* can occasionally be used to refer to tablets made of materials other than clay (see pres-

The correct observation that *tuppi* is a more general term than GIŠ.ĤUR implies that, while in most cases it doubtless referred to clay tablets, it could also be used as a loose reference to other kinds of written documents (such as in Mesopotamia: CAD 𐎶 147–148). This circumstance should prevent us from considering the fact that GIŠ.ĤUR documents are later recalled as *tuppi* in a letter by Queen Puduḫepa to Ramses II as evidence against the hypothesis according to which the former were wooden boards.⁴⁹ It is hardly necessary to recall the role of Sumerian *dub* ‘(clay) tablet’ (and of the correspondent loanwords) as the word for ‘written document’ *par excellence* in the cuneiform world. Precisely the broader semantics of *tuppi* make it absolutely plausible that it was used in a number of instances to refer to documents made of materials other than clay.⁵⁰

2.5 The formula ‘aligned with the GIŠ.ĤUR’

Among the contexts in which GIŠ.ĤUR is attested is an archival remark found in the colophons of a group of Empire period tablets containing so-called festival texts.⁵¹ Indeed, most attestations of the term come from this formula. It reads ANA GIŠ.ĤUR=kan *ḫandan* ‘aligned with the GIŠ.ĤUR’, see, for example, KUB 2.6 vi 1–4 (festival for the sun goddess of Arinna, CTH 598): ‘Tablet 6, of the Sun deity of the Winter. Not complete. Aligned with the GIŠ.ĤUR’.

While dozens of such state-sponsored festivals are known, Jürgen Lorenz argued that the colophons containing the formula all pertain to festivals of the

ently) makes it impossible to establish with absolute certainty the materiality of any *tuppi* referred to in a text. However, in my opinion, the context of this particular passage clearly indicates a deliberate distinction between the documents referred to as GIŠ.HUR and *tuppi*, with the latter term used in its default meaning of ‘clay tablet’.

⁴⁹ Contra van den Hout 2020, 192; see Cammarosano et al. 2019, 137.

⁵⁰ It is unclear to me why the absence of attestations of an hypothetical phrase **ṬUPPU DUḪ.LĀL* in Hittite texts should represent a reason for skepticism towards the assumption that *tuppi* could be occasionally used for a wooden board, as advocated in Burgin 2022a, 389. It is true that there are attestations of *ṬUPPU ZABAR/KÜ.SI₂₂/KÜ.BABBAR* but not of **ṬUPPU DUḪ.LĀL*, but the latter are not expected precisely because there were dedicated terms for that (GIŠ.LE.U₅/GIŠ.LE’U, and arguably more). Note that the few instances of *tuppu ša DUḪ.LĀL/iškūrim* ‘tablet of wax’ (Cammarosano et al. 2019, 131; Burgin 2022a, 389) come from a letter recovered in Ugarit and from Old Assyrian tablets, i.e. precisely a corpus in which the term *lē’u* does not seem to be attested at all.

⁵¹ Festival texts (German *Festrituale*) are protocols detailing the schedule and offerings of cultic festivals in which the king took part, see Schwemer 2016; Rieken and Schwemer 2022. The formula is found in tablets catalogued in CTH 592, 595, 612, 615, 626, 627, 631, 634, 670, and 682, see Lorenz 2014, 479–480.

living cult practice, i.e. festivals that were actually celebrated at the time (as opposed to festivals that were copied but no longer actively performed).⁵² Within the entire corpus of the festival texts, the term GIŠ.ḪUR appears only in this formula and in one passage from the enthronement festival *CTH* 659 which will be discussed below.

The semantics of the verb *ḫandāe-* has been recently investigated by H. Craig Melchert,⁵³ who demonstrated that its basic meaning is ‘to align’, arguably originating from Proto-Indo-European weaving terminology. Importantly, there is no inherent hierarchy in the ‘aligned’ elements: the sense is to put two (or more) objects on a line, just like planets or, indeed, warp threads. All other meanings of *ḫandāe-*, namely, ‘to equate/compare with’, ‘to match up’ and, finally, with moral connotation, ‘to be just, righteous’, can be derived from the fundamental sense of ‘aligning’. As for the use of the participle in the archival remark *ANA GIŠ.ḪUR=kan ḫandan*, Melchert translates the formula ‘true to/corresponding with an archetype’.⁵⁴ However, nothing requires or even hints at the GIŠ.ḪUR, with which the tablet is ‘aligned’, to represent a model or archetype of the composition (although this is, of course, entirely possible in principle). Precisely because the meaning of GIŠ.ḪUR is debated, it is safe to first take *ḫandan* not in the ‘morally’ loaded sense of ‘true to/collated against’ but rather in its neutral sense of ‘aligned with’, regardless of whether the alignment is with a ‘plan/schedule’,⁵⁵ an ‘original’⁵⁶ or a wooden writing board,⁵⁷ all of which are plausible meanings in this context.

While the question of the nature of GIŠ.ḪUR cannot be settled by examining this formula, it is worth adding some observations apropos the last of the possible options just listed. As is well known, written documents were also used, at least to some extent, during the celebrations to support the management and supervision of the rites. This is evident in a passage from a tablet detailing day 29 of the AN.DAḪ.ŠUM spring festival: ‘He brings offerings to all the gods, one after another while a scribe reads out from a *tuppi* (i.e. by default, a clay tablet) to which deities the sheep are to be offered’.⁵⁸ This passage can be compared to an analogous one from an outline tablet with prescriptions concerning the daily

⁵² Lorenz 2014.

⁵³ Melchert 2020a.

⁵⁴ Melchert 2020a, 170.

⁵⁵ Marazzi 1994, 146–147.

⁵⁶ Van den Hout 2020, 195.

⁵⁷ Singer 1983, 42; Waal 2011, 26; Cammarosano et al. 2019, 138.

⁵⁸ *nu* DINGIR^{MES} *ḫūmanti[š] kalutitti ḫalz[išš]ai=ma=aš=kan* ^{L0}DUB.SAR *tuppi[az]* UDU^{HI.A}=*kan kue[d]aš* ANA DINGIR^{MES} *šipanz[aka]nta*: KUB 20.59 rev. v 2–6 (*CTH* 616), after Schwemer 2016, 20.

offerings to be made within the ritual for the king's enthronement, although here the text does not necessarily imply that the GIŠ.ĪUR which is referred to as being available at the scribes' office was also held by one of them during the rite: 'But the wood-scribes have a GIŠ.ĪUR (detailing) how the king brings offerings on each day'.⁵⁹

Now, the more difficult information is to memorise, the more welcome the support of a written memo: and, indeed, both passages refer specifically to lists of offerings, arguably the least memorisable component of festival protocols. Thus, it is entirely plausible to assume that the archival remark 'aligned with the GIŠ.ĪUR' refers to such kind of memos. The existence of several parallel versions of a festival was normal in the Empire period: because of both the process of scribal tradition, with festival protocols being copied and recopied over decades or even centuries, and slight changes, for example, in the quantity of offerings, arising over time. The remark in the colophon would then emphasise how that particular tablet was 'aligned' with the memos – arguably drafted on wooden boards – which were currently in use for assistance in the performance of the festival.

That wax boards have distinct advantages over clay tablets in such a context, namely, transportability, light weight, possibility of binding together several leaves, and ease of making corrections or changes over time, including when working in the open air, hardly needs to be stressed.⁶⁰ The argument can even be taken one step further. Assuming that such memos would have contained no more than lists of offerings, the possibility arises that they may have been written in hieroglyphic script, thus, offering one of the plausible application scenarios for the bronze styli discussed above.

2.6 A shift in semantics, and its good reasons

An objection which is sometimes made to the interpretation of GIŠ.ĪUR as a wooden board is the alleged implausibility or idiosyncrasy of the process of semantic shift that is to be assumed for the Sumerogram on its way from Mesopotamia to Anatolia.⁶¹ In my opinion, this objection is unfounded.

⁵⁹ LUGAL-uš-ma=kan mahhan UD-tili šipanzakezzi nu GIŠ.ĪUR LÚ.MEŠ DUB.SAR.GIŠ ḫarkanzi: KUB 10.45 rev. iii 12'–14' (CTH 659), after Schwemer 2016, 20.

⁶⁰ See e.g. Büll 1977, 785–894; for ancient West Asia, see Cammarosano et al. 2019. For the 'wood-scribe' (LÚ DUB.SAR.GIŠ), see Cammarosano et al. 2019, 145, and van den Hout 2020, 294–296, with literature.

⁶¹ Van den Hout 2020, 188–189; Burgin 2022a: 390.

Theo van den Hout⁶² follows Gertrud Farber-Flügge⁶³ in assuming that ‘from a Sumerian point of view the elements GIŠ and 𒄩UR did not have their own semantic values, “wood” and “to carve, draw” respectively, but had to be understood as phonetic only’, and Yoram Cohen in the view that ‘GIŠ.𒄩UR never really was a living Sumerian combination but rather functioned as a pseudo-Sumerogram’, in which ‘both signs have their common Akkadian sign values *iš* and *ur*, standing for an abbreviated Akkadian *išur(tu)*’.⁶⁴ Neither claim, however, seems convincing to me. Indeed, the term *ḡeš-ḫur* is well attested in Sumerian tablets with the meaning ‘rule, ordinance, plan, model, sketch’, including in phonetic spelling.⁶⁵ The sense of ‘rule, ordinance’ is clearly derived from the basic meaning of the Sumerian verb *ḫur*, namely, ‘to scratch, to draw’.⁶⁶ The underlying semantic process is ‘drawing’ > ‘plan’ > ‘model’ > ‘rule’, given that ground plans (produced by drawing on a surface)⁶⁷ typically serve as (normative) models for the construction of buildings. In second millennium Mesopotamia, *ḡeš-ḫur* and the corresponding Akkadian noun *uṣurtum* (< *eṣērum* ‘to draw’) retained the basic sense of ‘drawing, plan’ besides the derived one of ‘regulation, ordinance’ (CAD U 290–293). That the Hittite scribes were aware of the correspondence GIŠ.𒄩UR: *uṣurtum* is confirmed by the spelling GIŠ.𒄩UR-TE in IBoT 2.1 vi 13’–14’. They obviously knew of the Mesopotamian semantics of GIŠ.𒄩UR.⁶⁸ Why, then, was a deviating sense chosen for the usage of the Sumerogram in Hittite texts? The answer is very simple.

As is well-known, the Hittite texts witness the use of a particular kind of written document which was called *kwanzattar* (spelled GUL-*zattar*; neuter gender).⁶⁹ The word GUL-*zattar* means ‘drawing’ (Hittite /*kwans-*/, spelled GUL-š-,

⁶² Van den Hout 2020, 188–189.

⁶³ Farber-Flügge 1973, 182–183.

⁶⁴ *Apud* van den Hout 2020, 188.

⁶⁵ Attinger 2021, 494.

⁶⁶ Attinger 2021, 539, note, importantly, the occurrences of *ḡeš-ḫur ḫur* ‘to mark, to draw a model’.

⁶⁷ Bagg 2011.

⁶⁸ See the bilingual tablet KBo 12.128, containing Akkadian proverbs and the corresponding Hittite translation, with an occurrence of GIŠ.𒄩UR with the meaning ‘ordinance’ (line 14’, see Cohen 2013, 202).

⁶⁹ Previously, the accepted spelling was *gulzattar*. The reading depends on whether one interprets the sign GUL as a logogram (thus, GUL-*zattar*, corresponding to /*kwanzattar*/, with Waal 2014; Waal 2019) or not. The issue is not yet conclusively proven, however, the current consensus tends towards the logographic interpretation, which is, therefore, adopted here (see Bauer, Payne and Sasseville 2022, with literature). Note that the spelling of this term and the

Luwian *kwanza(i)-*, PIE *k^uels- ‘to draw, to trace a furrow’),⁷⁰ thus, corresponding exactly to Akkadian *uṣurtum*. It is, therefore, only natural for a Hittite speaker looking for an appropriate logographic spelling of *GUL-zattar* to adopt the Sumerogram that corresponds to *uṣurtum*, namely GIŠ.ḪUR.⁷¹ And indeed, the long held view that GIŠ.ḪUR represents the logographic spelling of *GUL-zattar* is now fully confirmed by James Burgin’s new interpretation of the only passage in which GIŠ.ḪUR seemed to conceal a common gender noun. By showing that GIŠ.ḪUR in IBoT 2.131 obv. 21’ is to be taken as determinative of *šiyanteš* ‘the sealed ones’ instead of an independent noun, he disposes of the only argument against the assumption of a 1:1 equivalence between GIŠ.ḪUR and *GUL-zattar* (all other gendered attestations showing neuter agreement).⁷² The process of adoption and semantic adaptation is, thus, perfectly plausible, and the deviation in respect of the Mesopotamian usage fully unproblematic, insofar as both Akkadian *uṣurtum* (together with Sumerian *ḡeš-ḫur*) and Hittite *GUL-zattar* retain their basic sense of ‘drawing’ besides the derivatives ‘plan, ordinance’ (for Akkadian *uṣurtum*) and ‘*GUL-zattar*-document’ (for Hittite *GUL-zattar*), respectively.⁷³

What kind of document a *GUL-zattar* is, of course, raises another question: but let it be stressed here that assuming it denotes a particular kind of wooden writing board, the deviation from the Mesopotamian usage is in no way more troubling than from ‘plan, ordinance’ to ‘original’,⁷⁴ and that the availability of *LĒ’U* ‘wax board’ cannot constitute a counterargument (it suffices to assume that different kinds of wooden boards existed, for example, hypothetically, single leaves vs board books, or waxed vs inked; cf. also the existence of multiple terms denoting specific kinds of documents discussed below).⁷⁵

materiality of the corresponding kind of document (see below, Section 2.7) are, in principle, irrelevant to the issue discussed here.

70 See Bauer, Payne and Sasseville 2022.

71 This argument (see Cammarosano et al. 2019, 136) is not taken into consideration in the critical discussion of Burgin 2022a, 389–390. It is also independent of possible developments in the pre-Hittite period (cf. Burgin 2022a, 390).

72 Burgin 2022a, 390, correcting an erroneous assumption by Cammarosano et al. 2019, 140; van den Hout 2020, 198; and others.

73 The question of which kind of documents the Old Assyrian *iṣurtum* are (see above, Section 2.2, n. 25) does not impact the interpretation advocated presently. What is at stake here is the question of whether the hypothesis that GIŠ.ḪUR and *GUL-zattar* denote a specific kind of written document in the Hittite sources is problematic or not on linguistic and semantic grounds.

74 Contra Burgin 2022a, 392.

75 Pace Burgin 2022a, 389. Multiple writings and words denoting wooden boards also existed in Mesopotamia, and were, at least in some scribal traditions, coherently used for specific

Finally, neither the ‘creative’ handling of Mesopotamian logograms nor the use of GIŠ.ḪUR as a determinative (unparalleled in Mesopotamia) are in any way problematic. On the contrary: compare, for example, the ‘invention’ of the pseudo-Sumerogram ^{NA}ZI.KIN ‘cult stela’ (which, like GIŠ.ḪUR, is first attested in the early Empire period),⁷⁶ the use of SI ‘horn’ and ḪUR.SAG ‘mountain’ as determinatives, which constitutes an innovation regarding the Mesopotamian usage,⁷⁷ and the attribution of new meanings to Mesopotamian logograms in the process of adoption, as in the case of ^{UZU}NIĞ.GIG for ‘liver’.⁷⁸

2.7 GIŠ.ḪUR as determinative: The related words

Up to this point, the objections against the interpretation of GIŠ.ḪUR as a wooden writing board have been addressed, and still no conclusive evidence either in favour of this hypothesis or disproving the interpretation as ‘plan’ or ‘original’ has been found. A look at the usage of GIŠ.ḪUR as determinative provides strong arguments against the latter analysis, while, at the same time, hinting to the former as the most likely one.

The terms for which GIŠ.ḪUR is attested as a determinative are *GUL-zattar* (lit. ‘drawing’), *ḫatiwi* ‘inventory’, *kaštarḫaida* (a Luwian term for a specific kind of document), *parzaki* ‘packing list’, *kurta* (a specific kind of document, etymologically a ‘cut off (piece of wood)’) and *šiyant-* ‘sealed (object)’.⁷⁹ As noted by

kinds of such media (Cammarosano et al. 2019, 130, with n. 84–86 and literature). It is also plausible in a multicultural environment that the exact same object may be referred to by different words, including indigenous terms and loanwords.

76 Cammarosano 2019a, 308, with literature.

77 Burgin 2022a, 392; cf. also e.g. the consistent use of a determinative, either LÚ or MUNUS, with SANGA ‘priest’, differently from the Mesopotamian usage (kindly pointed out by Detlev Groddek; for a rare exception in an Old Script tablet, see Hoffner 2010, 138).

78 Kindly pointed out by Detlev Groddek; see Weeden 2011, 312–314.

79 For the participle *šiyant-*, see the passage of IBoT 2.131 discussed above, Section 2.6. In the case of *kurta-*, this hinges on the passage IBoT 2.102+ iv 5’ (Cammarosano et al. 2019, 140, with n. 195). According to van den Hout 2020, 205, with n. 94 (reversing his earlier view, cf. van den Hout 2016, 434, n. 34), GIŠ.ḪUR is not to be taken as a determinative here. There is indeed a minimal spacing between GIŠ.ḪUR and the following signs, but this is perfectly in line with the quite incoherent spacing usage on this tablet (cf. e.g. ^{DUG}*ḫaršiyalli* in KUB 38.19+ obv. 17’, ^{LÚ.MES}ZABAR.DAB ibid. 22’, with spacing, against e.g. ZAG-aš GÜB-la-aš, ibid. 24’, without spacing between words). Also note that otherwise this would be the only attestation of *kurta-* without a determinative, and that the context of the passage also favours the analysis as determinative. Conversely, I prefer not to follow van den Hout 2020, 206–207, in taking GIŠ.ḪUR as a determinative of *tuppi* in KUB 13.2 iii 21–22 (see van den Hout 2020, 206–207, n. 101 for previous

Theo van den Hout,⁸⁰ all of them except *kurta* are of Luwian origin; the terms *GUL-zattar*, *gaštarḫaida* and *parzaki* are attested both with and without gloss wedge(s).⁸¹ The noun *ḫatiwi* ‘inventory’ is attested five times without any determinative and twice in a fragmentary context determined by *GIŠ.ḪUR*; the participle *ḫatiwitant-* is once preceded by *GIŠ*, the determinative for wooden objects. The noun *parzaki*, probably ‘packing list’, is attested twice in two parallel passages of a palace inventory, in one instance determined by *GIŠ.ḪUR*. The other nouns listed above are all attested in analogous contexts, namely, the process of checking documents (sometimes said to be ‘old’) in the frame of inventorying, crosschecking and managing cult practices and provisions. Two examples will suffice to exemplify:

The staff of the Palace of Hattuša regularly supply (them, i.e. the offerings listed before). [They] are copied (*arḫa* *GUL-š-*) from an old *GIŠ.ḪUR* *GUL-zattar*.⁸²

literature and interpretations). In that passage, *GIŠ.ḪUR tuppiaz* ‘on a *GIŠ.ḪUR* (or) a tablet’ can be easily taken as an asyndetic expression, but admittedly the absence of any case marker on *GIŠ.ḪUR* and the absence of a clear clue from spacing make it difficult to reach a conclusive interpretation (for *GIŠ.ḪUR tuppi* as a possible endyadys for ‘written documents’, see KUB 58.7 obv. ii 23’ and below, Section 2.9). For *GIŠ.ḪUR.ḪI.A* as a determinative of *GUL-zattar* in the prayer of Muwattalli II, KBo 11.1 obv. 21–22 (with van den Hout 2020, 200, with n. 62, and others), see Cammarosano et al. 2019, 139, n. 178 (cf. Burgin 2022a, 391–392), where the following reconstruction is proposed: *n=a[t pu-nu-uš-mi GIŠ.ḪU]R.ḪI.A: GUL-zattanazz[i-y]a kwit dUTU-ŠI kinu[n] wemiškemi n-at eššahḫi* ‘(The people who are still there and who were there with my father and [my grandfather, I will ask (them) what] does not fulfil the requirements of the gods). And I, My Majesty, will carry out whatever I will discover now in the *GUL-zattar*-boards’. The minimal spacing between *ḪI.A* and the gloss wedge does not prevent the interpretation as determinative, cf. e.g. the analogous spacing between the determinative and noun a few lines later in obv. 28. Also note that *GIŠ.ḪUR* is undoubtedly determinative of *GUL-zattar* later on (obv. 41). In the alternative reconstruction proposed by Burgin: *GUL-zattanazz[i-y]a* could be taken as a gloss to the preceding [... *nu IŠTU(?) GIŠ.ḪU]R.ḪI.A*: thus, this passage does not constitute evidence that *GIŠ.ḪUR* and *GUL-zattar* could refer to different objects.

80 Van den Hout 2020, 211.

81 An up-to-date, detailed discussion of the relevant occurrences is presented in Cammarosano et al. 2019, 139–141, and van den Hout 2020, 195–206.

82 KUB 42.103 obv. iii² 13’–15’ (CTH 698): *LÚ^{MES} É.GAL URUḪATTI peškanzi annalaza-at=kan*¹⁴*GIŠ.ḪUR* *GUL-za-da-na-za* ‘*ar¹-ḫa gul-ša-an-[za]*, differently van den Hout 2016, 434 (*arḫa* *GUL-šan[?]* ‘they are(?) copied’); van den Hout 2020, 199, with n. 58 (*arḫa gulšan[zi]* ‘th[ey will] copy’). I prefer to read *GUL-šan[za]* and take it as a Luwian neuter singular participle, fully parallel to the passage in KUB 38.19 + IBoT 2.102 discussed presently (n. 83); similarly Starke 1990, 458, (*ar-ḫa gul-ša-an-[da]* ‘(*sind*) *sie* [...] *ausgewiesen*’). The occurrence of a Luwian participle neuter in a Hittite sentence has parallels in other cult inventories, particularly in the form

They (i.e. the offerings listed before) are copied (*arḫa* GUL-š-) from an old ^{GIŠ.HUR}*kurta*.⁸³

The relevant passages and their contexts make it clear that these terms refer to written documents. Again, the attested contexts fit the hypothesis that they refer to wooden writing boards well, especially when usage on travel and in the open air far from *scriptoria* are involved; on the other hand, again, this judgement is subject to some degree of arbitrariness, and, in any case, does not disprove the hypothesis that GIŠ.HUR denotes ‘originals/authoritative documents’, irrespective of materiality issues in the actual cases. A crucial circumstance, however, is that GUL-*zattar*, *kaštarḫaida* and *kurta* are attested not only with GIŠ.HUR as determinative, but also with GIŠ alone, the determinative for wooden objects (the phenomenon also applies to *ḫatiwi/ḫatiwitant-* if we group noun and participle together).⁸⁴ The evidence is especially striking in the case of GUL-*zattar*, the most widely attested of these terms. Van den Hout cites two attestations determined with simple GIŠ from DAAM 1.36,⁸⁵ but, meanwhile, six are known, from five different tablets (against eight tablets attesting the word determined by GIŠ.HUR).⁸⁶ The contexts of attestation of ^{GIŠ}GUL-*zattar* are en-

ḫupida(wa)nza ‘veiled’ referred to the antecedent ALAM (Hittite *ešri* ‘cult image’), see KBo 26.147 2; KUB 38.1 i 11, 16. 20, iv 2, 9; KUB 38.2 iii 13; KUB 38.3 iii 13; KUB 38.26 obv. 31; KUB 38.36 4’ (with van den Hout 1984, 66–67, against Cammarosano 2018, 46–47; Cammarosano 2021, 29–30 with tab. 2.6; kindly pointed out by H. Craig Melchert).

83 KUB 38.19 rev. iv 1’–2’ + IBoT 2.102 4’–5’ (CTH 527): [k|a-ru-’i’-i]-’i’-ia-za-at-kán ^{GIŠ.HUR}gur-’da’-[-za] ^{2/5}ar-ḫa GUL-aš-ša-an-za [(vacat)^{sic}], CTH 527.56, see https://www.hethport.uni-wuerzburg.de/txhet_kultinv/intro.php?xst=CTH%20527.56&lg=%20%E2%96%A0%20&ed=M.%20Cammarosano, accessed on 10 November 2023). For the interpretation of GIŠ.HUR as a determinative, see above, n. 79. Cf. Starke 1990, 458 (who emends into *gul-aš-ša-an-⟨za⟩-t[e-eš]*); van den Hout 2016, 434, with n. 34; van den Hout 2020, 205, with n. 94 (*arḫa* GUL-aššanza x[?]). Van den Hout rightly observes that ‘whether the traces in the handcopy of an alleged -t[e- are really there remains doubtful in my opinion when looking at the photos’ (van den Hout 2020, 205, n. 94). I would go one step further: the photo shows that there is no sign at all at the end of the line after GUL-šanza, against the copy. The emendation proposed by Frank Starke is, therefore, unnecessary. The passage is entirely parallel to the previously discussed one from KUB 42.103 (q.v.).

84 Note that while the occasional omission of (simple or composite) determinatives is indeed attested for certain terms in Hittite texts, the omission of a single component of a composite determinative is not. Thus, it is very problematic to interpret the alternance between GIŠ and GIŠ.HUR by viewing the former as an abbreviated writing of the latter: instead, Hittite orthographic habits suggest that GIŠ has to be taken at face value in these instances as well, i.e. as determinative of wooden objects.

85 Van den Hout 2020, 197–198.

86 DAAM 1.36 i 25, i 33; DAAM 1.39 i 41; DAAM 1.41 i 15, see Cammarosano 2019b, furthermore KBo 55.181 6’, quoted below (Section 2.9, n. 102), and Bo 3289 iv 1 (reading not entirely certain,

tirely analogous to those of ^{GIŠ.ĤUR}GUL-*zattar*, namely, procedures of the ‘quality control’ of rites and cult provisions. Particularly in the occurrences from the tablets from Kayalıpınar, GUL-*zattar* boards ‘of the (local) temple’ in Šamuha are checked against GUL-*zattar* boards that have been brought from the capital, Hattuša, by the officer Ukkura. Compare the following passages with those cited above:

On a ^{GIŠ}GUL-*zattar* of the temple, the monthly festival for them is fixed as follows: 2 sheep, 3 BÂN-measures of flour, (etc.) [...] Now, as to the ^{GIŠ}GUL-*zattar* that the Commander of Ten [brought] from Hattuša: he fixed the monthly festival as follows: 1 ox, 2 sheep, (etc.) [...] This was fixed by Muwattalli, but they have not yet regularly supplied it. [It is up to] the Palace to investigate the (preceding) matter.⁸⁷

On a ^{GIŠ}*kurta* of Muwattalli 12 monthly festivals (and) 1 spring festival [are recorded], but the autumn festival is not recorded. As to the GUL-*zattar* of the storehouse: the spring festival is recorded but the autumn festival [is not].⁸⁸

Similar pairs of examples can be made for ^{GIŠ.(ĤUR)}*gaštarḫaida*.⁸⁹ The alternation between GIŠ and GIŠ.ĤUR in the determination of GUL-*zattar*, *kaštarḫaida*, *kurta* and *ḫatiwi/ḫatiwitant-* makes perfect sense if one takes these terms as denoting specific kinds of wooden boards: the latter being a particular type of wooden objects, the scribes sometimes used the ‘looser’ determination instead of the more specific one. But how does one explain this if GIŠ.ĤUR is taken to mean ‘authoritative document’? Van den Hout is forced to assume that ‘the terms in question [...] were probably technical designations of different kinds of administrative documents, each serving a particular purpose. Only when de-

see Lamante and Lorenz 2015, 250, n. 18; this fragment may (Lamante and Lorenz 2015, 245, n. 3) or may not (Cammarosano 2018, 335) indirectly join KUB 42.100+). The texts DAAM 1.36 and 1.41 had already been published in Cammarosano 2018, 384–400, 401–415, but van den Hout cites only those from DAAM 1.36, and one of them is quoted after a previous, partial edition by Elisabeth Rieken. The reading ‘the *decurio* (of the town of) Pa-x [... issued(?)] just now’ (van den Hout 2020, 199, with n. 60) is to be read as ‘the Commander of Ten [brought] from Hattuša’, see Cammarosano 2018, 388–389. In Table 10.2, van den Hout 2020, 198, correctly notes that the attestation from Kp. 15/8+ i 25 has only GIŠ, but the transliteration erroneously has GIŠ.ĤUR; conversely, he states on p. 199 that the quoted attestation from KUB 42.103 ‘admittedly [...] only has GIŠ’, but actually it has GIŠ.ĤUR (as correctly transliterated in his Table 10.2 and n. 58).

87 DAAM 1.36 obv. i 25–50 (CTH 529), from Kayalıpınar, ancient Šamuha, translation adapted after Cammarosano 2018, 389.

88 KUB 42.100 obv. i 17’–19’ + KBo 26.181 1’–3’ (CTH 526), ed. Cammarosano 2018, 342–343 (§10); van den Hout 2020, 205 with n. 90.

89 Van den Hout 2020, 196; for an edition of KUB 38.12, see Cammarosano 2018, 416–432.

terminated by GIŠ alone [...] are we possibly dealing with wooden writing boards'.⁹⁰ In my opinion, this view is hardly tenable (and van den Hout himself does not seem entirely convinced if he admits elsewhere the possibility that GIŠ may be used as an abbreviation for GIŠ.ḪUR instead).⁹¹ Abbreviating a composite determinative on a regular basis by using a sign with a different value as determinative in its own right would be totally unparalleled. The passages cited (which could be multiplied) clearly show that the situations in which GIŠ, on the one hand, and GIŠ.ḪUR, on the other hand, are employed are entirely analogous. Moreover, it is undisputed that a great number – better: virtually all – of the *tuppi*-s cited in Hittite texts can be viewed as authoritative documents in the diplomatic terms advocated by van den Hout. The view that the scribes would have marked authoritative documents with the determinative GIŠ.ḪUR and not-so-authoritative (possibly wooden) documents with GIŠ, while scores of authoritative documents would have been referred to as *tuppi* depending on the scribe's personal feeling, seems to me both unnecessarily complicated and unconvincing. Finally, it is worth noting that there are many examples of extant clay tablets declaring themselves (in colophons or within the text) to be a '*tuppi*', but not a single one declaring itself to be a GIŠ.ḪUR, a *GUL-zattar*, a *kaštarḫaida* or a *kurta*. This is exactly the outcome expected if these are terms for wooden writing boards, but a statistically surprising situation if these were to be particular kinds of authoritative documents irrespective of their materiality. In sum, the evidence reviewed above seems to me to strongly suggest that GIŠ.ḪUR and related terms refer to wooden writing boards. One last context, examined in the following section, provides yet another clue in this direction.

2.8 Selling a royal gift

The *Instructions for Priest and Temple Personnel* (CTH 264), one of the most significant and well-preserved Hittite compositions, contains a section that regulates the procedures to be followed in managing the valuables of the temples, particularly regarding royal gifts.⁹² Firstly, it is stressed that valuables ('silver, gold, clothing, (and) bronze utensils of the deities') belong to the deities alone, to the point that temple personnel must regard them as if they were not at all

⁹⁰ Van den Hout 2020, 209.

⁹¹ Van den Hout 2020, 199. As has been seen above, however, Hittite spelling conventions speak against this hypothesis.

⁹² Edited in Miller 2013, 252–255; see, for discussion, also Güterbock 1939, 30 with n. 13 and Neu 1980, 79.

existent. The text then prohibits temple functionaries from owning valuables ('No silver (or) gold whatsoever shall belong to a temple functionary!') and from processing or passing them down to their family: a measure understandably aimed at minimising attempts of misappropriation. Finally, an elaborate procedure is detailed for the case that temple personnel receive valuables as gifts 'from the Palace', i.e. from the king. First of all, a record is to be prepared (*iya-* 'to make, to write') with the information about who made the gift, on which occasion and how much it weighs; the gift must also take place in the presence of witnesses, whose names (and, arguably, seal impressions) are to be recorded too. Most importantly, the beneficiaries, not being entitled to own them, cannot keep the gifts at home, but must sell them off:

If, however, they give him silver, gold, clothing, or bronze utensils from the Palace as a gift, then let it be designated (as such): 'This king gave it to him'. How much it weighs must also be ascertained, and further, it shall be recorded like this, too: 'They gave it to him at this festival'. The (names of) the witnesses shall also be appended (thus): 'This and that person were present when they gave it to him'. Further, in no case shall he leave it inside his own house. He must sell (it) off.⁹³

The sale must take place in the presence of dignitaries (the 'lords of Hattuša'), who must record (*iya-*) the item(s) on a GIŠ.ĤUR and seal it 'in front' (or perhaps 'in advance', *peran šiya-*).⁹⁴ Finally, on the first occasion the king comes to Hattuša (contemplating, then, the case that he was out of town when the item was sold off), that very same document must be presented at the palace, and the dignitaries must seal it again, this time arguably with the royal seal:

When he sells it, though, he shall not sell it in secret. The lords of Hattuša shall be present, and they shall watch. They shall record what he (i.e. the buyer) buys on a GIŠ.ĤUR, and they shall seal it in front. As soon as the king comes up to Hattuša, though, he (the seller) shall present it in the palace, and they shall seal it for him.⁹⁵

⁹³ KUB 13.4 obv. ii 32"–39", translation adapted after Miller 2013, 255.

⁹⁴ The expression *peran šiya-* is interpreted as 'vorläufig(?) siegeln' by Güterbock 1939, 30, with n. 13, followed by CHD Š 16a 'let them seal it provisionally' and Miller 2013, 255, with n. 538 'they shall pre-seal it'. However, Melchert observes (*apud* Cammarosano et al. 2019, 137, n. 158) that the presence of enclitic *kan* points rather to the locative interpretation, since the use of *peran* to mean 'in advance, ahead of time' does not seem to take a local particle (thus, Neu 1980, 79, 'vorn siegeln').

⁹⁵ KUB 13.4 obv. ii 40"–44", translation adapted after Miller 2013, 255. The recording will have arguably be performed by scribes, at the order of the dignitaries.

The GIŠ.ḪUR which serves as a legal witness of the sale of a royal gift is, thus, sealed twice, firstly at the moment of the transaction and secondly by the king (or his representatives). The necessity of the second, royal sealing is apparently motivated by the importance that was attached to controlling the whereabouts of precious objects, and particularly royal gifts, which, as specified by the text immediately thereafter, as a rule were engraved with the name of the king. That the royal seal was impressed at a separate moment than that of the transaction is understandable: the king was frequently out of the capital and it would have been hardly possible or desirable for him to be present at every instance of sale, and use of the royal seal seemingly could not be delegated to third parties, at least in this case.⁹⁶

The circumstance that the GIŠ.ḪUR is sealed twice at two different times fits well with the hypothesis that the passage refers to a wax board. Precisely the possibility of modifying text over time as well as opening and resealing them indefinitely constituted, together with transportability, the main advantage of wax boards over clay tablets (cf. the passage from the court case against Ukkura cited above, Section 2.2). Admittedly, however, this passage alone is no proof that GIŠ.ḪUR denotes a wax board, since it is also conceivable that the GIŠ.ḪUR was wrapped, for example, in a bag, and this would have been the object to be actually sealed and resealed.⁹⁷

2.9 Conclusions on GIŠ.ḪUR

The evidence reviewed above shows – in my opinion – beyond any reasonable doubt that not only the Akkadogram *LĒ'U* but also GIŠ.ḪUR (corresponding to Hittite *GUL-zattar*) and the nouns for which it serves as determinative refer to wooden writing boards. The juxtaposition of *tuppi* and GIŠ.ḪUR, thus, becomes an hendiadys for ‘written documents’,⁹⁸ clay and wood being the two prime script carriers: ‘If someone brings a lawsuit, sealed, using a wooden board (or) a clay tablet’.⁹⁹

⁹⁶ Cf. a letter by Tuthaliya IV to Niqmaddu III of Ugarit, in which the king justifies the absence of the royal seal by the circumstance that he was at that time at the ‘house of the rites’ (RS 94.2363 rev. 19–23, quoted in Schwemer 2022, 361, n. 27).

⁹⁷ Kindly suggested by Cécile Michel.

⁹⁸ Waal 2011, 27, n. 6 apropos KUB 13.2 rev. iii 22 quoted presently.

⁹⁹ KUB 13.2 rev. iii 22 // KUB 31.86 rev. iv 7, *Instructions for the Frontier Post Governors*, CTH 261: *mān DINU=ma kuiš GIŠ.ḪUR tuppiāz šīyan udai*. Differently van den Hout 2020, 206–207 (with literature in n. 101), who suggests taking GIŠ.ḪUR as a (otherwise unattested) determina-

The acknowledgment that GIŠ.ḪUR denotes a wooden writing board has important implications for our understanding of Hittite literacy, administration and economy. It is stated in the *Instructions for the Frontier Post Governors* (CTH 261) that this officer has to keep track of ‘whether someone has broken into a granary [...] or whether someone has consumed the grain stores then illicitly destroyed the GIŠ.ḪUR^{HI.A}’, and keep track of it.¹⁰⁰ The passage proves, on the one hand, that running accounts of royal granaries existed (an assumption that possibly applies to analogous structures, such as royal palaces and storehouses), on the other hand, that such accounts were (or at least could be) drafted on wooden boards. The latter point is particularly important for the assessment of aspects of the Hittite economy and administration. Wooden boards, if not provided with parts made of hard materials, would hardly leave behind traces in the archaeological record under the climatic conditions of central Anatolia (see below, Section 2.10); therefore, the hypothesis that economic records of this kind were written on wooden boards could explain their absence from the extant collections of Hittite clay tablets.¹⁰¹

2.10 Appearance and technology

Apart from the bronze styli discussed above, there is no direct evidence regarding the appearance and technology of Hittite wooden writing boards. Based on comparative evidence, the ‘pages’ of wax boards will have had a recessed portion for accommodating the wax layer. It stands to reason that, similar to in Mesopotamia, both single boards (consisting of one leaf only) and multi-page board books existed.¹⁰² Single boards would have been used, for example, in the case of sketch pads, packing slips and inventories which, by their very nature,

tive of *tuppi*, with the function of highlighting ‘the importance of the situation if somebody produces written evidence that, moreover, carries the imprint of a seal’. Analogous passages are found in KUB 58.7 ii 22–23: TUPPA^{HI.A}-ma-aš *GUL-zattar^{HI.A}[...] (see van den Hout 2020, 200, with n. 63, who, in accordance with his interpretation, translates ‘the tablets, that is, the lists (*vel sim.*)’) and KBo 55.181 6’: TUPPA^{HI.A}-ma GIŠGUL-zattar^{HI.A} (Burgin 2022a, 391; CTH 530.66, see https://www.hethport.uni-wuerzburg.de/txhet_kultinv/intro.php?xst=CTH%20530.66&lg=%20%E2%96%A0%20&ed=M.%20Cammarosano, accessed on 10 November 2023, commentary on line 6’).

100 CTH 261 §54, see Miller 2013, 234–235.

101 I am not sustaining here that this was the case, but rather merely arguing that this possibility exists. For the complex topic of the reconstruction of a model of Hittite economy, see most recently Klinger 2022b and the thorough study of Burgin 2022a.

102 For the extant evidence, see Cammarosano et al. 2019, 146–153.

needed to be immediately readable, whereas multi-page board books would have been used particularly when the content had to be protected from manipulation or unauthorised access and, therefore, the document had to be sealed (see e.g. the passage from the deposition of Ukkura, Section 2.2).¹⁰³ The seal would have been impressed on a clay lump fixed to the board book's fastening mechanism, for example, a loop and hook system or simply a knot.¹⁰⁴ The reference to a GIŠ.ḪUR being 'sealed in front' (see above, Section 2.8) suggests that, at least in some cases, the sealing may have been placed on the 'cover' of the board book (see Fig. 2 in Section 1.2, but, as observed above, the possibility must be considered that when texts refer to tablets or boards being sealed, it may have been, in some cases, a bag or other container that was actually sealed and not the tablet/board itself). Contrary to what is sometimes stated, wooden boards do allow for the option of taking notice of the content without destroying the seal, as the case of contracts in the Roman age demonstrates: the desired information can be written on an extra, non-sealed leaf (or alternatively on the front or back cover).¹⁰⁵

The assumption of a widespread use of board books in Hittite Anatolia advocated here poses the question of why no archaeological finds are known that may be interpreted as remains of hinge mechanisms. Cylindrical elements of metal, bone and ivory with holes and tenons can typically be persuasively interpreted as such, and several examples are known from Mesopotamia and the Levant.¹⁰⁶ Among the factors that may account for this state of things are the possibility that Hittite hinges may have been made only of wood and leather and/or that the mechanisms for joining the leaves consisted simply of holes drilled through the border of adjacent leaves, through which leather bands, cords, thongs or rings passed. Such simple systems are amply attested for the classical world as well as for later periods, but not for ancient West Asia. Since, however, it stands to reason that they may also have been used in Mesopotamia,

103 Cf. Mora 2007, 541: 'in generale si suppone che le tavolette di legno utilizzate nel Vicino Oriente antico avessero la forma di dittico, con due parti legate da una cerniera e richiudibili. È invece molto più probabile, a mio parere, che le tavolette utilizzate nei magazzini per rendere evidente il contenuto dei sacchi/ceste/contenitori di legno chiusi e sigillati fossero ad una sola facciata'. Contrary to what Clelia Mora suggests, however, the existence of single boards in the Hittite administration does not configure a novelty or a divergence in respect to the Mesopotamian.

104 Cammarosano et al. 2019, 148, with Fig. 10, and here Section 2.1 Fig. 2.

105 Cammarosano et al. 2019, 124, with n. 25.

106 Cammarosano et al. 2019, 147, with Fig. 9.

the absence of evidence is most probably due to their perishable character.¹⁰⁷ In the case of wax boards, additionally, the high inflammability of wax must be taken into consideration. It is to be expected especially in contexts where many boards were gathered together and destroyed by fire that the intensity of the latter completely destroyed not only the wooden parts but also those which might have been made of bone.¹⁰⁸

2.11 Non-waxed boards?

One last question to be addressed here is whether in addition to waxed boards inscribed in cuneiform and hieroglyphs, unwaxed boards inscribed in hieroglyphs with ink and brush also existed, as recently advocated by Willemijn Waal.¹⁰⁹ Obviously, the more easily signs can be erased and the writing surface prepared for being reinscribed, the greater the advantage of a wooden board over a clay tablet. Wax boards, therefore, in principle, are arguably more desirable than wooden boards inscribed with ink in the context of running accounts that need to be corrected and updated over time, although the use of pigment ink and an appropriate coating can mitigate the effort required for washing out text from a wooden board.

The spectacular find of hundreds of short hieroglyphic inscriptions painted with reddish-brown paint on the roughly worked stones of the walls in the Yerkapı tunnel at Boğazköy,¹¹⁰ together with further examples from Kayalıpınar (Sivas),¹¹¹ demonstrates that ink was used for writing hieroglyphic script, and it is well-known that ink was occasionally used on clay tablets in Mesopotamia,

107 Cammarosano et al. 2019, 146, with Fig. 8.

108 Kindly pointed out by Andreas Müller-Karpe. This may have been the case, for example, at the Nişantepe complex in Hattuša.

109 Waal 2011, 28–29; Waal 2022, 130–140.

110 The news was circulated by Andreas Schachner on 11 September 2022 via Jack M. Sasson's mailing list AGADE ('REPORTS: New Anatolian Hieroglyphs from Bogazköy'). No scientific report was available when this paper was written, but the press release circulated by Schachner contains links to multiple Turkish media web pages that also provide pictures of several of these inscriptions, e.g. <<https://www.aa.com.tr/tr/kultur/hattusada-bulunan-249-hiyeroglif-hitit-donemine-isik-tutacak/2682308>> (accessed on 4 January 2023). Photographs of some of them have been also made available on Wikimedia Commons, see <<https://de.wikipedia.org/wiki/%E1%B8%AAattu%C5%A1a>> (accessed on 4 January 2023).

111 Müller-Karpe 2017, 73–77; these are also painted in a reddish colour similar to the examples from Yerkapı. Importantly, according to Müller-Karpe, they predate the fourteenth century based on stratigraphic grounds.

sometimes to reproduce cuneiform in two-dimensions and more extensively for Aramaic.¹¹² One Hittite tablet has some scribbles painted at the end of the reverse beneath the colophon (Bo 2617 = KUB 56.41, *CTH* 701, late Empire, see Fig. 6),¹¹³ a fact that makes the hypothetical use of ink for writing certainly plausible, and we know that the Hittites made use of painting in architecture.¹¹⁴ However, positive evidence for its employment on wooden boards (or clay tablets) for proper writing is still lacking, as are hints regarding coating techniques which might have been used in this context.¹¹⁵ Therefore, while the bronze styli discussed above prove the use of hieroglyphic script on wax boards, the existence of non-waxed boards inscribed with ink must remain speculative for now. Their existence, if confirmed, may well have implications for the characterisation of some of the terms that have been argued above to refer to wooden writing boards.

112 Taylor 2011, 16–18, with literature.

113 Noted by Kořak 1988, 147; the scribbles, clearly visible on the old photograph of the Vorderasiatisches Museum but hardly visible as of today (collated), are not reproduced in the hand copy. Forrer 1926, 1, mentions the existence of a scribal signature made with stylus and ink (*‘der mit Schreibrohr und Tinte aufgemalte Name des Schreibers’*) on the tablet Bo 2400 (= KBo 3.9), but based on the photo, the signs, which imitate wedges by tracing their outer contours, are scratched with a pointed tool and not painted.

114 See, most recently, von Rūden and Jungfleisch 2017. For preliminary results of an investigation of the rock reliefs of Yazilikaya, suggesting that the rock surface was probably worked on after being hewn, possibly as a preliminary step before plastering and/or painting, see Morra and Grifa 2019, 103–106 (erroneously abbreviated as ‘V. M. – C. Gr. – C. Ge.’ on p. 107, information kindly provided by Andreas Schachner).

115 Cammarosano et al. 2019, 143–145. Differently, Willemijn Waal argues for a widespread use of wooden boards inscribed in Anatolian hieroglyphs with ink and brush (Waal 2011, 28–29; Waal 2022, 130–140). While Waal makes a good case for this possibility and the theory is entirely plausible, in the absence of any positive evidence of the existence of inked writing boards it must remain conjectural. Presenting a gallery of inked wooden writing boards from other periods and cultures (Waal 2022, 135–137) is certainly a useful reminder of the varied contexts in which they have been used historically, but does not make the hypothesis of their existence in Hittite Anatolia any more likely. The evolution towards cursive forms cannot be taken in itself as a hint pointing to inked wooden boards rather than wax boards, as it applies equally well to writing on wax (Cammarosano et al. 2019, 145, *pace* Waal 2011, 28–30; Waal 2022, 132). Note, finally, that the evidence represented by the bronze implements with pointed tips and spatula-shaped flattened ends (see above, §2.3) is quite misrepresented in Waal 2022, 138: they are not ‘three’ and not only from Hattuřa, but rather dozens and from several sites; their identification as writing styli is not only and not so much supported by their resemblance to Roman era styli but rather by Neo-Hittite and Mesopotamian iconographic evidence that is much closer both chronologically and culturally (Cammarosano et al. 2019, 133–135, 141–142).

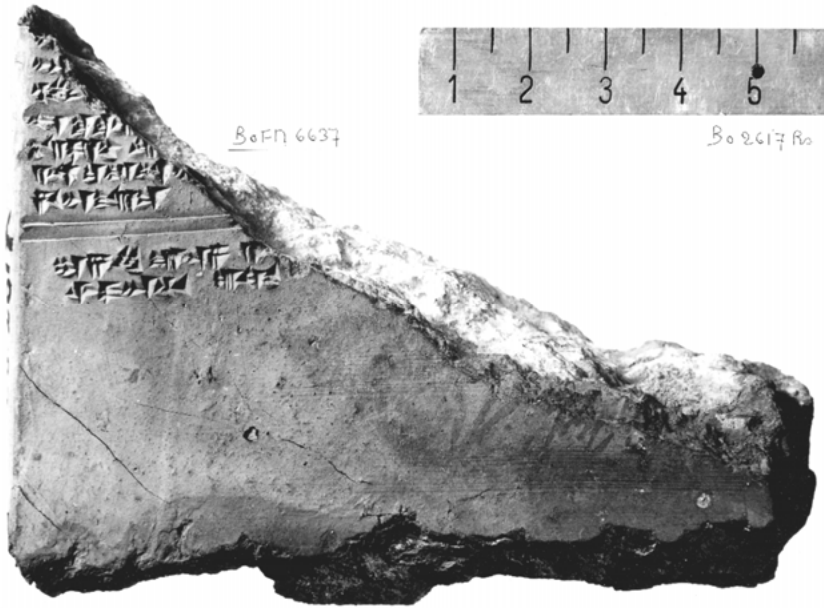


Fig. 6: Reverse of the tablet Bo 2617 = KUB 56.41, with painted scribbles; photograph BoFN06637 of the Vorderasiatisches Museum, Berlin, which was taken shortly after excavation (courtesy Vorderasiatisches Museum and Hethitologie Portal Mainz, see hethiter.net/: fotarch BoFN06637).

3 Contexts

The sections above have provided ample evidence of the variety of contexts in which wooden boards were employed in Hittite Anatolia. These contexts exemplify different fields of application of these writing media and, therefore, distinct ways of interaction between them and the material world that surrounded them from time to time. The attested usages may be functionally grouped into three macro-contexts: (1) cult and ritual protocols, treaties; (2) aide-memoires and paraphernalia in cult activities; and (3) running accounts, inventories and packing slips. Contrary to what one may expect, a context in which wooden boards are rather scarcely attested is that of oracular procedures, despite the fact that Hittite divination techniques often envisaged prolonged observation of

omina, working in the open air, and an opportunity of correcting and updating text over time, all circumstances that would favour the use of wooden boards.¹¹⁶

3.1 Cult and ritual protocols, treaties

The use of wooden boards as carriers of cult and ritual protocols (which would be called liturgical texts in other traditions) is by far the most widely attested context. Based on the extant references, such protocols pertained to festival texts,¹¹⁷ incantation rituals¹¹⁸ and cult inventories (which is, in turn, the most frequently attested subcontext).¹¹⁹ These boards, therefore, were essentially analogous in content and function to the festival texts, incantation rituals and cult inventories that were written on clay tablets. Additionally, the passage KBo 4.14 i 25 (see above, Section 2.2) hints at the use of wooden boards for drafting a diplomatic agreement. Based on the nature and syntactic complexity expected for these kinds of texts, it is reasonable to assume that these wooden boards configure wax boards written in cuneiform script.

3.2 Aide-memoires and manipulated objects in cult activities

Evidence reviewed above in Sections 2.5 and 2.7 hint at the use of wooden boards as aide-memoires in the frame of cult activities. In this case, the boards would be used not in a 'library' context but rather in the open air, directly at the scene of the cult performance. As has been discussed above, this scenario is dependent particularly on the interpretation given to the formula 'aligned with the GIŠ.ḪUR', which is found in the colophons of a number of clay tablets with festival protocols. The interpretation proposed suggests that wooden boards employed in this way were concerned primarily with content which was simultaneously essential to the performance, not easily memorisable and arguably in need of periodic adjustment in particular lists of offerings.

116 This circumstance is striking, especially if we take into account the vastness of the corpus available (*CTH* 561–582), and requires further investigation.

117 See e.g. KUB 42.103 obv. iii? 13'–15', *CTH* 698, see above, Section 2.7.

118 See e.g. KBo 17.65+ obv. 37–39 // rev. 45–46, *CTH* 489, see https://www.hethport.uni-wuerzburg.de/txhet_besrit/exemplar.php?xst=CTH%20489&expl=&lg=IT&ed=F.%20Fuscagni (accessed on 10 November 2023).

119 See e.g. DAAM 1.36 obv. i 25–50, *CTH* 529, see above, Section 2.7.

A similar, yet not entirely analogous context is documented in a purification ritual where the ‘portion’ allotted to the ritual patron is noted on boards that are to be hung on animals (see above, Section 2.4). In this case, they do not serve as an aide-memoire assisting in the rite – or not only as that – but instead play a part in it as manipulated objects, bearing a magical force.

Differently than in the preceding macro-context, these situations may well involve wooden boards that were written in hieroglyphic script and, in these cases, that may not have been waxed (see above, Section 2.11).

3.3 Running accounts, inventories and packing slips

The *Instructions for the Frontier Post Governors* witness the use of wooden boards as running accounts of royal granaries (see above, Section 2.9). The importance of this passage can hardly be overestimated, given the implications it has for the appraisal of staple management and more broadly of the Hittite economy.

A similar function is taken by boards used as packing slips and inventories of goods. The most straightforward example comes from a tablet recalling how shipments of luxury items were recorded provisionally on wooden boards travelling together with chests, and subsequently noted on a clay tablet upon arrival at the final destination (see above, Section 2.4). Another telling example is provided by the court case of an official, Ukkura, who was sent abroad travelling on state business with sealed wooden boards used for validating operations of withdrawal of commodities (see above, Section 2.2).

4 Conclusions

The ‘gallery’ of contexts in which wooden writing boards were used provides us with a glimpse into the varied, lively and sometimes adventurous life of this kind of manuscript in Hittite Anatolia. The complex interactions it had both with other kinds of manuscripts and other objects of the material world are a reminder of the importance which a holistic appraisal bears for our understanding of their nature and history. In the case of Hittite wooden writing boards, this is all the more evident in view of the fact that no single example of this medium has yet been recovered, due to the perishable character of its material. Rather than frustrating our investigation, this circumstance enables us to focus on a more in-depth and indeed holistic analysis of the indirect evidence available, as

well as on a wider appraisal of those elements – people, objects, settings – with which they intertwined. The complexity of the issues at stake and the remarkable degree of detail that can be attained bear witness to the fruitfulness of this approach and call for an even broader extension of perspective: indeed, the contexts of applications of Hittite wooden writing boards display non-trivial parallelisms with those attested in other periods and cultures, and, thus, call for a comparative investigation well beyond the kingdom of Hattuša.

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