With strings attached: document sealing in Hittite Anatolia

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WITH STRINGS ATTACHED: DOCUMENT SEALING IN HITTITE ANATOLIA[1]

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Introduction: Sources for Hittite Sealing Practices

Archaeological Evidence for Sealing

Excavations in the capital Ḫattuša have yielded some 30,000 cuneiform clay tablets and fragments. The tablets were discovered on various locations, mainly the storerooms of Temple I, several rooms of the royal palace at the citadel Büyükkale and the so-called *Haus am Hang*, a building located on the slope between Büyükkale and Temple I (see Figure 33.1).[2]

The documents are predominantly composed in Hittite, though other languages (Akkadian, Hattian, Hurrian, Luwian, Palaic, Sumerian, to which we may now add the Kaška and Kalašma languages) are also attested. The tablets virtually all belong to the palatial administration; thus far no clearly private archives have been found.[3] Based on the paleographic and linguistic features, the text corpus is usually subdivided into three periods: Old Hittite (ca. 1650–1450), Middle Hittite (ca. 1450–1350), and Late Hittite (ca. 1350–1180 BCE), with the bulk of the texts stemming from the last period. The tablet collections predominantly consist of religious texts (festival and rituals texts, oracle reports, prayers, cult inventories) and historical and literary compositions, which are as a rule unsealed. Altogether, a modest number of ca. 53 sealed tablets and fragments have come down to us, or some 101, if one includes fragments that were in all likelihood sealed, but of which the sealing itself has not survived (see section "Hittite Sealed Tablets"). The sealed tablets are mostly (royal) deeds, treaties or edicts, sealed with a stamp seal.

The limited amount of seal impressions on clay tablets is compensated by the thousands of *bullae* or *cretulae*, small lumps of clay impressed with seal impressions, that were found on several locations in the capital, often in combination with sealed land deeds (see Figure 33.1 and section "Hittite Sealed Tablets").[4] The *bullae*, which mostly date to the last 150 years of the kingdom, virtually all bear the impressions of stamp seals. In a few cases, the *bullae* are impressed with cylinder seals, which are stamped into the clay rather than rolled (Boehmer and Güterbock 1987, 106–107; Dinçol and Dinçol 2008, 17, 60).

The seal impressions typically contain the owner's name and title written in Anatolian hieroglyphs (see Figure 33.2). This indigenous writing system co-existed with the cuneiform script (which was taken over from Mesopotamia via Syria) and was used to record Luwian, a language

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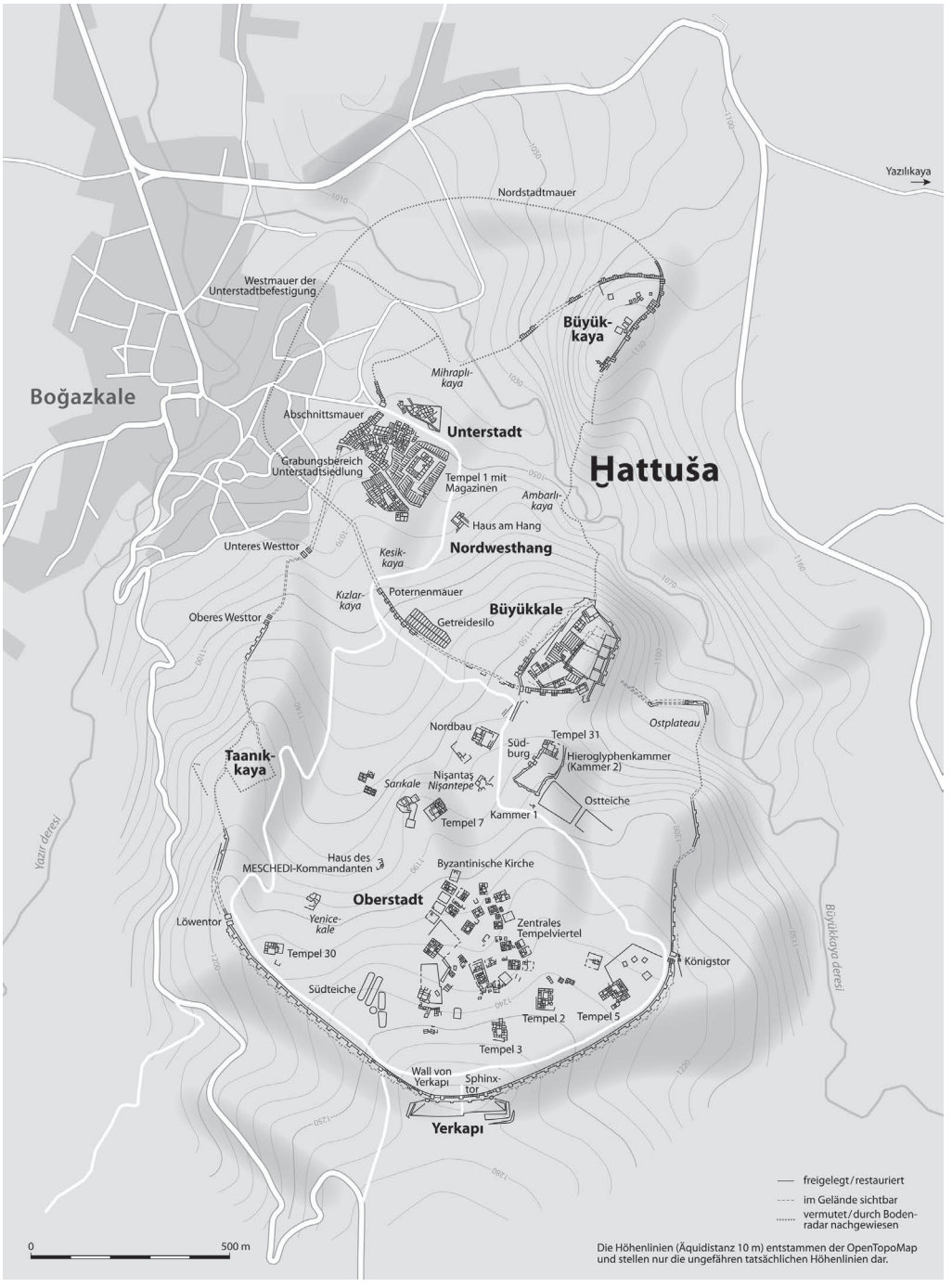

Figure 33.1 Plan of the Hittite capital Ḫattuša.

Source: Map: NordNordWest. License: CC BY-SA 3.0 de. https://commons.wikimedia.org/w/index.php?curid=89915159

Figure 33.2 Hittite stamp seal with a handle and a hieroglyphic inscription ca. 14th–13th century BCE.
Source: The Met, New York. https://images.metmuseum.org/CRDImages/an/original/DP-16500-001.jpg

closely related to Hittite, that was probably spoken by the majority of the people in the Hittite Empire. Most of the *bullae* are impressed with royal seals, but there are also sealings belonging to high officials. In case of royal seals, the Anatolian hieroglyphic inscription is accompanied by a cuneiform legend on the outer rim (see Figure 33.3 and section "The Silver Treaty Tablets of Ḫattušili III and Ramses II").

The *bullae* found in Ḫattuša are mostly cone- or teardrop-shaped, and they were formed around a knotted string. At the tapered end, there is a small hole from where originally cords or strings protruded. The stamp seal was usually impressed at the bottom, but the sides of the cone may also be covered with (partial) seal impressions (see Figure 33.4). These free hanging *bullae* do not reveal anything about the kind of materials to which they were attached. Most scholars believe that they once belonged to (lost) wooden writing boards which contained land deeds and/or other types of official documents (see, e.g., Güterbock 1940, 47; Herbordt 2005, 37; Marazzi 2000, 86; Singer 2013, 7), but other usages cannot be excluded.[5] Another, less common type of sealed lumps of clay is the so-called *Tonverschlüsse*, which are more irregularly shaped. They were directly impressed on leather objects that were wrapped with strings (Herbordt 2005, 34–39).

Philological Evidence for Sealing

The Hittite verb used to express the action of sealing is *šai-*/*šiye-* (see CHD Š, 16). It is generally held that the basic meaning of this verb is "to (im)press," but a closer inspection of its attestations shows that its primary meaning is "to tie," "to fasten (by means of strings)," or "to knot together" (see Waal 2023). The verb *šai-*/*šiye-* can refer to the sealing of objects, such as doors, jars, and pits, as well as to the sealing of documents. The texts inform us that documents made of clay, metal, and wood could be sealed. The references to the sealing of clay and bronze tablets all concern (royal) treaties or edicts. This concurs with the archaeological evidence; sealed exemplars of these

Figure 33.3 Seal of Tarkasnawa, king of Mira, showing with inscription in Anatolian Hieroglyphs and cuneiform, 13th century BCE.

Source: Walters Art Museum. https://art.thewalters.org/object/57.1512/

types of compositions have come down to us. The references to the sealing of wooden documents (GIŠ.ḪUR or ^{GIŠ}*LĒ-U*) are quite illuminating, as they reveal the existence of document types that are virtually completely absent in the surviving clay records, such as sale contracts, receipts and shipping documentation (see also section "Hittite Document Sealing: Wooden Documents").[6] The texts overall do not disclose any specific details about the sealing techniques used; for this, we mostly have to rely on archaeological data. In the following paragraphs, I will discuss the available evidence for the sealing methods of clay, metal and wooden documents.

Hittite Document Sealing: Clay Tablets

Hittite Sealed Tablets

The largest group of sealed clay tablets is made up by land deeds or charters. Altogether, they consist of some 91 tablets and fragments—in about half of the cases the sealings have been preserved.[7] These documents, which date to the Middle Hittite period, are predominantly composed in (formulaic) Akkadian, with Hittite jargon seeping through.[8] At the end of each deed, the names of the scribe and witnesses are mentioned, as well as the location where the document was composed. The land deeds were found at different locations than the other tablets, usually together with large collections of *bullae* (see section "Archaeological Evidence for Sealing", note 4).[9]

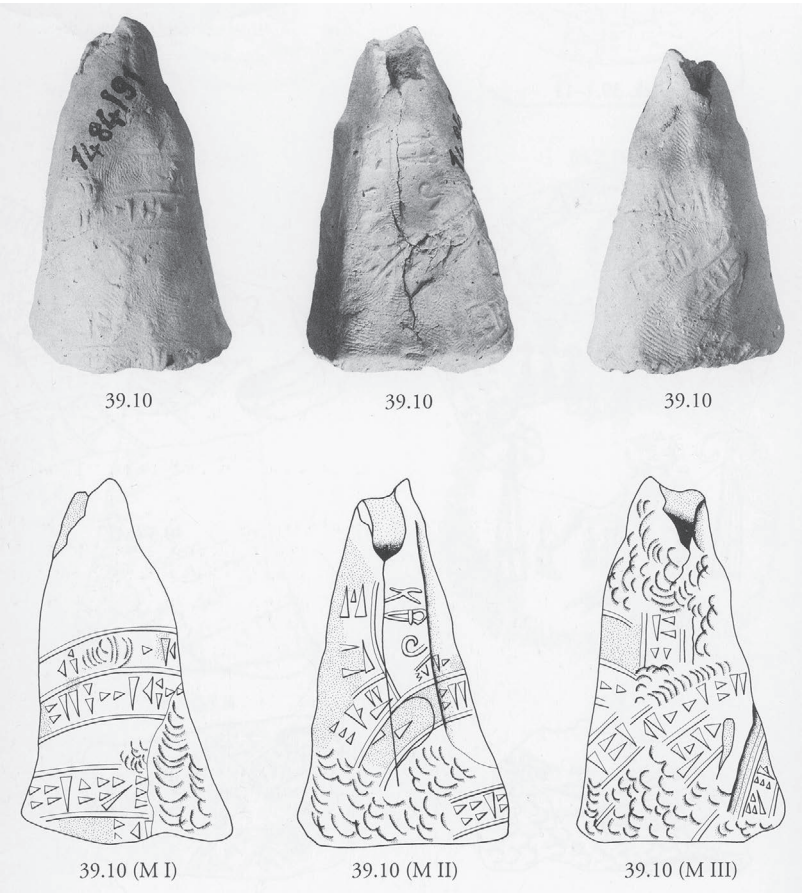

Figure 33.4 Cone-shaped bulla with seal impressions.

Source: Herbordt et al. 2011: Tafel 10 (no. 39.10). Drawing: Ch. Müller-Hazenbos. Courtesy of the archives of the Deutsches Archälogisches Institut, Berlin.

The appearance of the land deeds is distinctive from that of other Hittite clay tablets, mostly because of their conspicuous shape. The obverse is strongly convex with a large stamp seal impression of the Hittite king in the middle, which is set off from the text by means of horizontal and vertical lines.[10] The seal impression was not the only means of certification; in the core of the tablet strings were placed, which protruded from a central point in the tablet's lower edge. This opening is often defined by means of lines drawn around it in a square. The strings themselves have obviously not survived, but they did leave their marks in the soft clay.[11] Based on an accidentally broken tablet where the number of string imprints corresponds to the number of witnesses mentioned on the tablet, it has been plausibly suggested that to these strings, *bullae* were attached with the seal impressions of these witnesses (Güterbock 1997, 30; Van den Hout 2020, 81f., see Figure 33.5). These original *bullae* are, however, missing; the clay *bullae* discovered in the immediate vicinity of the land deeds stem from a later time period and they cannot be matched to these documents.[12]

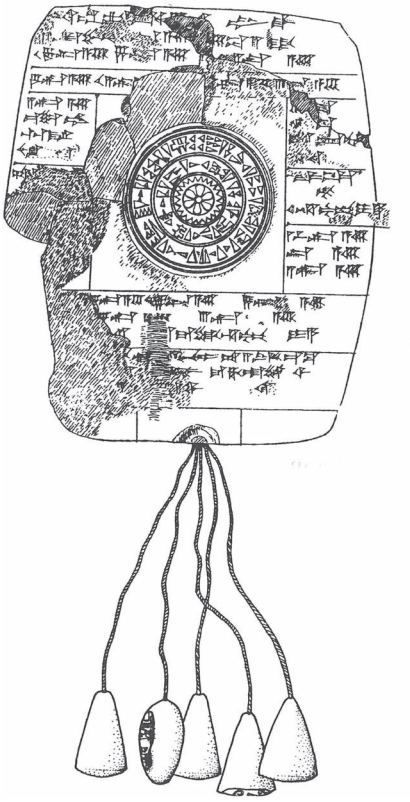

Figure 33.5 Reconstruction of Hittite land deeds with bullae hanging from strings protruding from the lower edge.

Source: Herbordt 2005, 38 (no. 18a). Drawing: Ch. Müller-Hazenbos. Courtesy of the archives of the Deutsches Archäologisches Institut, Berlin.

In addition to the land deeds, there is a limited number of sealed tablets of other text genres. Altogether, these include some ten tablets, which are mostly treaties and edicts (see Table 33.1). Like the land deeds, they are mostly single-columned tablets with a stamp seal impression in the middle of the obverse, which is usually curved. At least three of the tablets also show traces of strings in their core. One is a fragment of a treaty from the Late Hittite period (230/f), another one, KBo 62.32 (= Bo 2006/09) is an intriguing, unfortunately heavily damaged, Middle Hittite tablet that was discovered outside of the royal tablet collections in the Upper City Sarıkale. It appears to be a *Rechtsurkunde* of a high official (Wilhelm 2013, 345–347, 2017, 272), making it a possible example of a private sealed text, which are otherwise absent in the Hittite corpus. Unlike most other sealed tablets, the obverse is not curved but flat, and it is not sealed with a single stamp seal in the middle, but it shows traces of cylinder seal impressions on both the obverse and reverse (Wilhelm 2013, 346, 2017, 272–273).[13] On the preserved part of the tablet four impressions are visible, which, as suggested by Gernot Wilhelm (2013, 345, 2017, 274) may belong to the four witnesses mentioned at the end of tablet, whereas the contracting parties may have sealed the *bullae* attached to the strings. The third tablet with vestiges of strings in its core is the fragment KBo 44.7. Regrettably, too little is preserved to establish its text genre, nor can we tell if the tablet was sealed.

Table 33.1 Overview of sealed Hittite clay tablets.[14]

	Seal Type	*Seal Owner*	*Strings*	*Witnesses*	*Date*	*Genre*
Land deeds	stamp	Various kings	+	+	MH	deed
230/f	stamp	Muršili II?[15]	+[16]	?	LH	treaty/instruction[17]
KBo 14.45	stamp	Ḫattušili & Puduḫepa	?	?	LH	deed/edict?
544/f	stamp	Kurunta (prince?)	?	?	LH	oath?[18]
Bo 9364	stamp	Walwaziti (official)	?	?	LH	deed?[19]
KUB 31.103	*stamp*?	?	?[20]	?	MH	treaty[21]
KBo 44.7	?[22]	?	+	?	LH	?
KBo 64.261	stamp	Tudḫaliya IV	?	?	LH	?
KBo 62.32	cylinder	Several high-ranking individuals	+	+	MH	*Rechtsurkunde*?
KUB 25.32	stamp	Taprammi (official)	-	-	LH	festival text
HKM 4	stamp	Arnuwanda I	-	-	MH	letters
HKM 14	stamp	Tudḫaliya III	-	-		

The remaining sealed Hittite tablets are mostly too fragmentary to determine whether or not there were strings present in their core. Only one tablet certainly does *not* have such strings; this is KUB 25.32+ (see Figure 33.6). This isolated example stands out from the other sealed tablets of Ḫattuša with respect to its genre and appearance; it is not a single-columned deed, treaty or edict, but rather a two-columned composition dealing with local festivals.[23] The seal impression belonging to an official named Taprammi is not placed on the obverse, but on the reverse, in the middle of the *intercolumnium*.

If we broaden our scope to include evidence outside of the Hittite capital, there are two letters (HKM 4 and 14) from the site Maşat-Höyük, located some 100 km east of Ḫattuša, that have a royal seal impression on the edge of the tablet (Alp 1991, pl. 1–2; Herbordt 2005, 29). These tablets do not have strings in their core and their appearance does not differ from that of unsealed letters (Van den Hout 2007, 393, n. 34).

General Observations

Based on the admittedly limited evidence, the following observations can be made. Hittite clay tablets were as a rule sealed by means of a stamp seal in the middle of obverse, which was convex-shaped to this end.[24] In addition, the tablets could have strings placed in the middle, protruding from an opening in the lower edge. They are present inside the land deeds, and in at least three other tablets, which include a treaty and a legal document. In case of the land deeds, a link may be established between the number of strings and the number of witnesses, and it is generally assumed that to these strings *bullae* with their seal impressions were attached. In case of KBo 62.32, it appears that the witnesses sealed the tablet directly with cylinder seals, and the contracting partners presumably sealed the *bullae* that were originally attached to the strings.[25] The tying of strings seems to have played a crucial role in the certification of contracts. This is confirmed by the fact that such strings are absent in sealed tablets which clearly do *not* involve transactions with witnesses and/or agreements between two or more parties, namely the two letters from Maşat-Höyük and the festival text KUB 25.32+. In these cases, the seal impressions may perhaps have served as a mode of authentication of the sender or composer of the document.

The practice that the parties involved and witnesses sealed deeds and contracts is well attested throughout the ancient Near East. In most regions, however, they would roll their cylinder seals

Figure 33.6 Reverse of the festival text KUB 25.32 with a stamp seal impression of Taprammi in the middle.

Source: hethiter.net/: fotarch Phb03715. Courtesy of the Mainzer Fotoarchiv, Hethitologie Portal Mainz. http://hethiter.net/:%20fotarch%20Phb03715

over the clay tablet. The fascinating practice of inserting strings into the core of a clay tablet to which *bullae* were attached (in combination with a stamp seal in the middle of the tablet) appears to be a typical Anatolian way of sealing documents. An interesting point of comparison is the evidence from two Hittite vassal states in northern Syria: Ugarit and Emar. These sites have yielded substantially more sealed tablets (composed in Akkadian) than Ḫattuša and other sites in Hittite Anatolia.[26] At both Ugarit and Emar, one can see different sealing traditions at work; during the Hittite period the stamp seal was introduced, but the already existing tradition of cylinder seals continued to be in use. To my knowledge, no tablets with strings in their core have been discovered, nor any sealed *bullae* of the type found in Ḫattuša. Completely unique is the small tablet RS 17.109, the only document composed in the Hittite language found at Ugarit. This legal document, recording a transaction of silver, has a very remarkable shape; the upper edge is shaped into a knob, which bears a stamp seal impression (for photographs, see Salvini 1995, pl. 1–2). Is this tablet shape, resembling an upside-down hot water bottle, trying to mimic a tablet with a *bulla* hanging below? This curious hybrid document, as well the above-discussed fragment KBo 62.32, which shows traces of cylinder seal impressions as well as strings in the tablet, attest to the creative ways in which different sealing traditions could merge.

Hittite Document Sealing: Metal Tablets

The Bronze Tablet Bo 86/299

In 1986, a unique and exciting discovery was made in the Upper City of Ḫattuša; under the pavement near the Sphinx gate a completely preserved bronze tablet containing a treaty between king Tudḫaliya IV and his cousin Kurunta was found (see Figure 33.7).[27]

Figure 33.7 Obverse of the bronze tablet Bo 86/299 found in the Upper City of Ḫattuša with bronze chains.

Source: Photograph: Bjørn Christian Tørrissen. License: Creative Commons Atribution-Share Alike 3.0 Unported. https://upload.wikimedia.org/wikipedia/commons/a/a4/Hattusa_Bronze_Tablet_Cuneiform.JPG

To this day, this object (Bo 86/299), which measures 35 × 23.5 cm and weighs some 5 kilograms, is the only surviving metal tablet from Hittite Anatolia. Many more of such documents must have existed, however; the clay tablets inform us that important compositions such as treaties and annals could be executed in bronze, silver, gold, or iron (see, e.g., Siegelová 1993–1997, 117a; Van den Hout 2011, 52–53; Waal 2015, 136–137). These metal documents were made to last forever, but in an ironic twist of fate, in most cases, only their copies or drafts on clay have survived.

The colophon of the bronze tablet states that the document was executed in seven copies and that it was sealed with the seal of the Sungoddess of Arinna and the Stormgod of Ḫatti.

Bo 86/299 (Bronze Tablet) rev. iv 44–51

44 These tablets are made in 7 copies and sealed with the seal of the Sungoddess of Arinna[28]
45 and with the seal of the Stormgod of Ḫatti.
46 1 tablet is placed before the Sungoddess of Arinna,
47 1 tablet before the Stormgod of Ḫatti, one tablet for Lelwani,
48 1 tablet before Ḫepat of Kizzuwatna,
49 1 tablet before the Stormgod *piḫaššašši*,
50 1 tablet in the palace before Zitḫariya.
51 And 1 tablet holds Kurunta, king of the land of Tarḫuntašša, in his palace.

Intriguingly, though the colophon explicitly states that the tablet was sealed, there are no seal impressions on the tablet. This means that it must have been sealed indirectly. The tablet has two

round holes at the top of the obverse through which ran two metal chains of ca. 31 cm. long, each consisting of 13 loops. To one of the ends of both chains, clasps ending in thin, twisted threads of bronze were attached (see Figure 33.7). It is generally assumed that to these threads originally sealings were attached, that are no longer present (Neve 1987, 407; Otten 1988, 1). These sealings were presumably removed when the treaty was secondarily buried, because it was no longer valid (Neve 1987, 408).[29] According to Peter Neve (1987, 407; see also Otten 1988, 1), the chains were hanging from the two holes with two sealed *bullae* attached to them, one with the seal of the Stormgod, the other with the seal of the Sungoddess (Figure 33.8). This practice would be somewhat comparable to the strings hanging from the bottom of the land deeds (see section "Hittite Sealed Tablets" and Figure 33.5).[30]

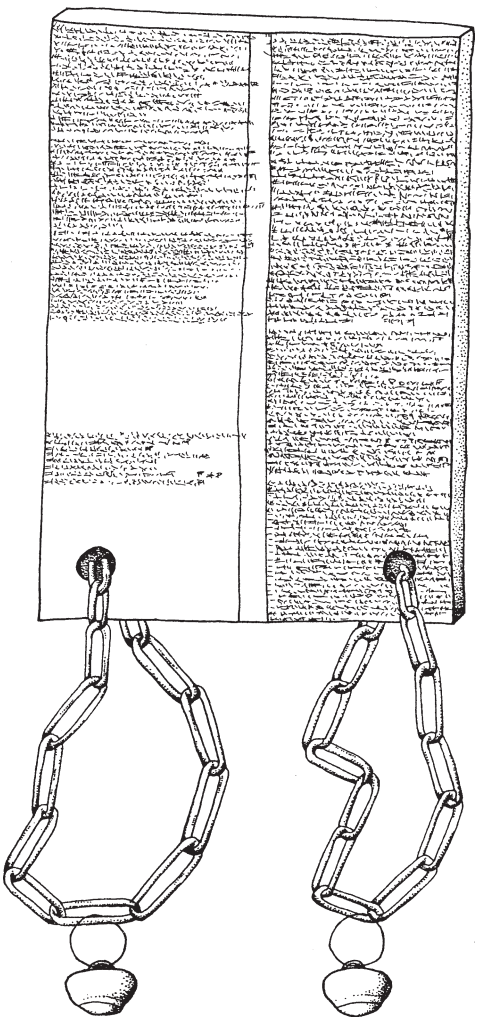

Figure 33.8 Reconstruction of the Hittite bronze tablet sealed by means of bronze chains to which sealed bullae were attached.

Source: Herbordt 2005, 38 (no. 18b). Drawing: Ch. Müller-Hazenbos. Courtesy of the archives of the Deutsches Archäologisches Institut, Berlin.

The above reconstruction is not without problems. Like most (unsealed) Hittite treaties preserved on clay, the bronze tablet is divided into two columns on each side. First, the left column of the obverse was inscribed from top to bottom, then the right column. The tablet was subsequently turned around its lower horizontal axis, and the text continued on the right side of the reverse with column three, and the last column was written on the left column of the reverse (see Figure 33.9).

The top of column 1 and 2, where the two holes were made, thus corresponds to the bottom of column 4 and 3 on the reverse. This means that, in order for the chains with bullae to hang from the bottom of column 4 and 3, the obverse would be in upside down position, which is rather awkward. What is more, the chains seem inconveniently long (they are only 4 cm shorter than the entire tablet!) and unnecessarily robust for this purpose; they appear to have been designed to support something weightier than two sealings.

I would therefore like to suggest that the chains primarily served to hang the bronze tablet.[31] This scenario is supported by textual evidence; there is a Hittite text that explicitly mentions a bronze tablet hanging before the Sungoddess of Arinna.[32] This reference is especially significant as it concerns the same material (bronze) and the same location (the colophon of the bronze tablet also mentions that one copy was placed before the Sungoddess of Arinna).[33] The Hittite bronze tablet was a precious and valuable object that was executed with great care, which makes it much more likely that is was hung in full display before a god in an aesthetically pleasing manner, rather than lying somewhere upside down, with disproportionally long and overly heavy chains attached to it. Archaeological evidence for the hanging of metal tablets is provided by one of the few other surviving metal tablets from the ancient Near East; a bronze exemplar found in Persepolis, dating to the 7th century BCE. This plaque was suspended by means of bronze wire, which was attached to two tabs projecting from its upper edge (cf. Schmidt 1957, 64, pl. 27).

If the chains served to hang the bronze tablet, how then was it sealed? On the just-mentioned bronze tablet from Persepolis, a seal impression—in this case of a cylinder seal—was incised into

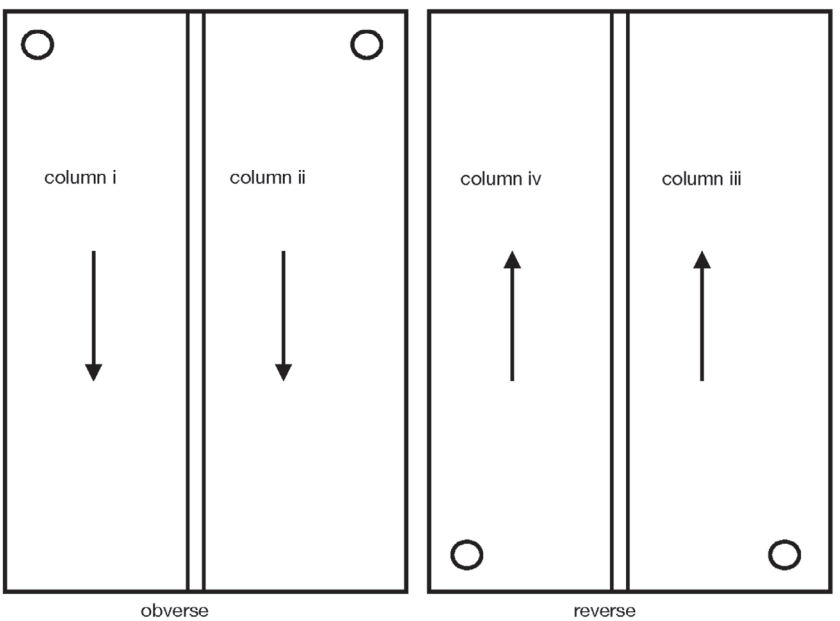

Figure 33.9 Column division of the Hittite bronze tablet.

the bronze. This pseudo-sealing was drawn using the full width of the tablet, with the pattern repeating itself several times, mimicking a cylinder seal being rolled off. Gian Pietro Basello (2013: 256–257) was able to identify a very similar looking sealing on a tablet from Susa, confirming his assumption that it concerns a reproduction of a real sealing. The incising of a seal impression was obviously not the method chosen by the Hittites for the bronze tablet, so the solution has to be sought elsewhere. Fortunately, some welcome additional information regarding the sealing of Hittite metal documents is provided by textual evidence from Egypt.

The Silver Treaty Tablets of Ḫattušili III and Ramses II

In 1259 or 1258 BCE, a pact was concluded between the Egyptian pharaoh Ramses II and the Hittite king Ḫattušili III, which has gained fame as the world's oldest attested international peace treaty. The original treaty tablets, which were made of silver and exchanged between the two treaty partners, have not survived. The text of the agreement is preserved on two clay copies in Akkadian cuneiform found at Ḫattuša, and in Egyptian hieroglyphs on stelae at the temple of Amun at Karnak and the Ramesseum at Thebes. Since the silver tablets were exchanged, the Akkadian version found in Ḫattuša represents the words of Ramses and the version in Egyptian hieroglyphs the words of Ḫattušili. Though there are minor differences, the overall content of both versions runs parallel, except for a mix-up in the paragraph order at the end of the Egyptian hieroglyphic version. As convincingly argued by Anthony Spalinger (1981, 348–349; see also Edel 1997, 86–88; Kitchen 1999, 139; Klengel 2002, 83–84), this aberrant arrangement can be explained if one assumes that the Egyptian scribes were working from a two-columned *Vorlage*, and that they copied column 3 and 4 on the reverse in inverted order, because they turned the tablet the wrong way (see Figure 33.9). This would imply that the original silver tablet was two-columned, like the Hittite bronze tablet as discussed earlier.[34]

Both the Akkadian and Egyptian hieroglyphic versions of the treaty conclude with a description of the sealings with which the treaty was sealed. The cuneiform account is not particularly helpful, as the last section of the text is heavily damaged. The preserved part of the last lines twice mentions "seal of," and then the tablet breaks off. Once can thus only conclude that there were at least two sealings present on the original treaty tablet sent from Egypt. The elaborate description in Egyptian hieroglyphs is fortuitously better preserved. It mentions that the tablet contains two seals in the middle: on the one side the seal impression of the Hittite king Ḫattušili and on the other side of that of his spouse, queen Puduḫepa.[35] The text reads as follows:

> What is in the middle of the silver tablet, on its obverse (lit: "its front side"): an inlaid figure of the Storm-god (Sutekh) embracing a figure of the Great Ruler of Ḫatti, enclosed by the following border inscription: "Seal of the Storm-god, Ruler of Heaven, Seal of the treaty made by Ḫattusili, Great Ruler of Ḫatti, hero, son of Muršili, Great Ruler of Ḫatti, hero."
>
> What is inside the surround of the outline-figure: "Seal of the Storm-god, Ruler of Heaven."
>
> What is in the middle of its reverse (lit. "its other side"): an inlaid figure of the Goddess of Ḫatti, embracing a figure of the Great Lady of Ḫatti, enclosed by the following border inscription: "Seal of the Sun-god (Pre) of the town of Arinna, the Lord of the Land; Seal of Puduḫepa, the Great Lady of the Ḫatti-land, the daughter of the land of Kizzuwatna, the [priestess? of the town of A]rinna, the Mistress of the Land, the servant of the Goddess."
>
> What is inside the surround of the outline-figure: "Seal of the Sun-god of Arinna, the Lord of every land."
>
> (Translation following Kitchen 1996, 85, 1999, 144; Kitchen and Lawrence 2012, 593)

This passage is of great interest for a number of reasons. First of all, as has long been observed, the descriptions of the seals' images closely match those of the so-called Gottessiegel or Umarmungssiegel, showing a Hittite king in a protective embrace of a deity (Otten 1988, 1 n. 3; Watanabe 1989, 264; Klengel 2002, 83, Figure 33.10).[36]

The Egyptian text also mentions that the Hittite queen is embraced by the Sungoddess of Arinna, who is here turned into a male deity. Thus far, no examples of Hittite queens held by a deity have turned up, but as remarked by Kitchen (1999, 144), considering the special status of queen Puduḫepa, it would not be surprising if she had a seal of this kind.

Not only the descriptions of the seals' images but also the transcriptions of the seals' legends can be linked to known seal impressions: the border inscription presumably refers to the outer cuneiform legend, a standard element of Hittite royal seals (see Figure 33.3). It is noteworthy that the legend on the outer rim refers to the "seal of the treaty made by Ḫattusili" which, if this Egyptian interpretation is correct, implies that a special seal was made for this occasion. The description of the inscription on the inside ("Seal of the Stormgod" and "Seal of the Sungoddess of Arinna") could refer to an inscription in Anatolian hieroglyphs, which are normally placed in the middle of Hittite seals. It should be noted, however, that the hieroglyphic legends normally do not contain the remark "seal of," but only mention the name and title of the owner.

The text further mentions that the seals are placed in the middle on two sides. This led scholars to assume that the seals were engraved on both the obverse (the seal of Ḫattušili) and the reverse (the seal of Puduḫepa).[37] For Edel (1997, 103) this reconstruction is problematic, as there are no examples of Hittite treaty tablets that are sealed on both sides. He therefore proposes that the seal

Figure 33.10 Seal impression showing king Tudhaliya IV in the protective embrace of his deity on the right, and the Sun goddess of Arinna on the left.

Source: Herbordt et al. 2011, 59, fig. 17a (after Otten 1993, 36, fig. 29). Courtesy of the archives of the Deutsches Archälogisches Institut, Berlin.

description does not refer to two, but to one seal impression, depicting the Stormgod of Ḫatti embracing Ḫattusili on the right, and the Sungoddess of Arinna embracing Puduḫepa on the left side. He brings to mind the seal impression of Tudḫaliya IV (fig. 13) which shows the Stormgod holding the king in a protective embrace on the right, and the Sungoddess of Arinna to the right—though without an embraced queen (see also Beran 1967, 79 n. 5). The Egyptian text, however, does not allow this interpretation; it clearly describes two separate seal impressions (Kitchen 1999, 144, 1998, 629).[38] The concern voiced by Edel is, however, valid, just like the observation of Dietrich Sürenhagen (1985, 68 n. 79) that virtually all sealed Hittite deeds (on clay) with a seal impression in the middle are single, and not two-columned (cf. section "Hittite Sealed Tablets"). Both these points deserve further consideration.

How to Seal a Metal Tablet

The Egyptian account reveals that the original silver tablet was in all likelihood two-columned, with two sealings placed in the middle of the tablet. As already observed by Otten (1988, 1 n. 3), the Egyptian seal descriptions remind one of the seal descriptions in the colophon of the bronze tablet; the reference to the seal of the Stormgod and the seal of the Sungoddess of Arinna could refer to the above-discussed Umarmungssiegel. The two treaties thus seem to share two significant characteristics; both the silver and the bronze tablet were two-columned and both were sealed with two seals, one featuring the Stormgod and the other the Sungoddess of Arinna. In light of these similarities, it is worthwhile to consider the possibility that they were sealed in a comparable manner. Combining the information from both documents, one may tentatively reconstruct the following scenario: Hittite metal tablets were sealed by means of one double-sided, or two single-sided sealings, which hung in front of the middle of the tablet from strings or chains that ran through the tablets' two openings. This could be achieved in the following ways.

The first option is that the preserved bronze chains served a double end; one end of each chain was used for hanging, but the other end for sealing purposes. These two ends would meet in the middle of the tablet, where they would be tied together with strings, of which the knot would subsequently be sealed by means of a double-sided sealing, on the one side the seal of the Stormgod, on the other side the seal of the Sungoddess (see Figure 33.11). In order to evenly distribute the weight and ensure that the sealing would hang in the middle of the tablet, one can imagine that the bronze clasps were used to connect to the chain midway, creating a lasso. The tablet was suspended from the lasso's hoop, the remaining part of the chain being used for the sealing. A possible objection is that when the bronze tablet was found, the clasps apparently connected the final loops of the chain together, forming a closed circle, and not a lasso (Neve 1987, 405). Since the tablet was evidently not found in secondary context without the sealings, however, the fastening of the chains may not be original.

Another, perhaps more likely, option would be that the bronze chains served for hanging only and that the sealing process involved separate strings or threads (which have not survived) that were tied together and subsequently sealed in the middle of the tablet (see Figure 33.12).

In this scenario, two variants are imaginable; in the first one, there are two sealings, one hanging on the obverse (the sealing of the Stormgod) and one on the reverse (the sealing of the Sungoddess of Arinna); in the second one there is one two-sided sealing hanging on the obverse. The Egyptian seal description would allow both scenarios; it can refer to either a double-sided sealing that featured Ḫattusili and the Stormgod on the one, and Puduḫepa and the Sungoddess of Arinna on the other side, or to two single-sided sealings, one hanging in the middle of the obverse, the other in the middle of the reverse.[39] With respect to the sealing or sealings, since the tablet itself

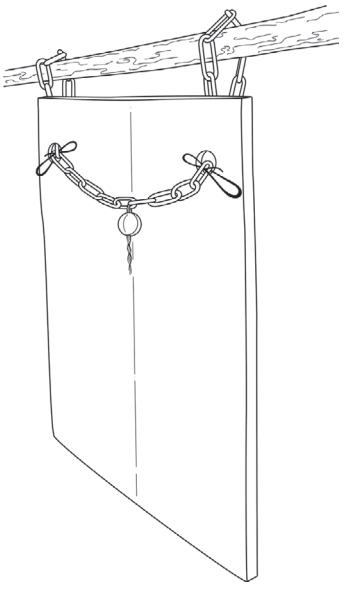

Figure 33.11 Reconstruction of the sealing of the Hittite bronze tablet by means of bronze loop chains.
Source: Drawing by Céline Murphy.

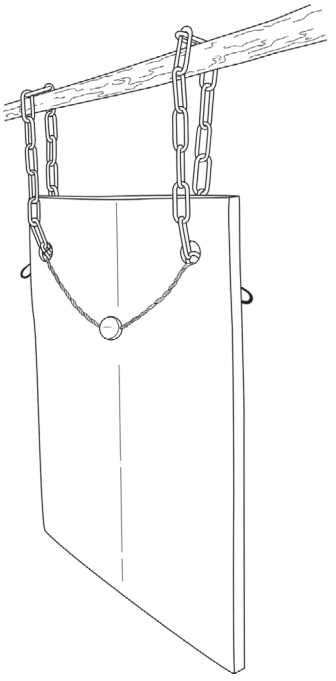

Figure 33.12 Reconstruction of the sealing of the Hittite bronze tablet by means of strings.
Source: Drawing by Céline Murphy.

was made of prestigious metal, it has been suggested that it was not sealed by means of ordinary clay *bullae*, but that the clay or wax was placed in metal seal boxes (Neve 1987, 408; Klengel 2002, 82), or perhaps metal seals, made especially for the occasion, were attached to the tablet.[40]

A problem for the above reconstruction is that the Egyptian text makes no mention of any chains or holes in the tablet. Moreover, as kindly pointed out to me by Ben Haring, though the Egyptian seal description allows the above-proposed interpretation, a more natural reading of the text would be that it describes a seal impression that is directly applied to the tablet.[41] It can therefore not be excluded that the sealing process of the silver tablet was not identical to that of the bronze tablet. The here proposed scenario is tentative, but it does have some distinctive advantages in comparison to previously suggested solutions. First of all, it would account for the fact why the bronze chains are so long and robust, which is left unexplained if they were only used for the attachment of two sealings. Second, one does not have to assume that the obverse of the document was held upside down, which would be the case if the chains were hanging at the end of columns 4 and 3 (Figure 33.12). Third, a hanging tablet would have made a more appealing and impressive display—if only for a selected (divine) audience—especially if it were hanging from a beam or rod, in which case it would be visible from all sides—though the reverse would be upside down. Moreover, there is both textual and archaeological evidence for the suspension of bronze tablets (see section "The Bronze Tablet Bo 86/299"). With respect to the silver Hittite-Egyptian peace treaty, the here suggested scenario would fit the Egyptian seal descriptions and solve the mystery of how the silver two-columned tablet could be sealed in the middle.

What seems beyond doubt, is that, in case of the Hittite bronze tablet, the sealings were not applied directly on its surface. Since bronze is obviously much harder to impress with a stamp seal than soft clay, it is not surprising that a different technique was chosen. The method the Hittites opted for, however, is by no means self-evident; in case of the afore-mentioned bronze tablet from Persepolis, for example, a seal impression was incised into the bronze. The Hittites instead chose for the use of strings (or chains), a practice we also find in most of the sealed Hittite clay tablets, notably the land deeds. A similar method was in all likelihood also used for the sealing of the elusive wooden tablets.

Hittite Document Sealing: Wooden Documents

As no wooden documents from Hittite Anatolia have survived, any discussion about the manner in which they were sealed (and the frequency with which this happened) is inevitably speculative. Since wood was an easily accessible material in thickly forested Anatolia in the second millennium BCE, it is very possible, if not likely, that the wooden writing boards were quite common and widespread (Waal 2011, 2022). The palatial cuneiform tablets, however, only provide rare and indirect glances into their existence, and they largely escape our view (cf. section "Philological Evidence for Sealing"). The occasional textual references to wooden documents and wood scribes suggest that wood was used for the types of records that are not represented in the cuneiform clay corpus, such as sale contracts, receipts and transactions (possibly also in private context), which one would expect to be sealed by witnesses and/or contract partners. Some cuneiform texts make explicit mention hereof; an instruction text to the temple personnel (KUB 13.4 obv. ii 42''-44') states that a wooden document recording a sale transaction is to be sealed on two different occasions, first by the lords of Ḫattuša and later in the presence of the king (Miller 2013, 255).[42]

As for their appearance, the wooden tablets are usually thought to have looked like the exceptionally well-preserved diptych found in a shipwreck near Uluburun, dating to the 14th century BCE (see, e.g., Symington 1991; Herbordt 2005, 37; Cammarosano et al. 2019, 141–148).[43] It is, however, very well possible that their physical characteristics were in fact very different. Quite

possibly, they were not diptychs, or at least not exclusively, and the Hittites (also) carved their texts into bark and/or wrote directly on wood with ink, especially if one assumes that they were inscribed with Anatolian hieroglyphs (cf. Waal 2022).[44]

Whether the Hittite wooden documents were diptychs, or rolled or folded strips of wood or bark, the sealing would undoubtedly have involved strings which were tied and sealed by means of *bullae*. The use of strings is a very common element in the sealing of documents made of perishable materials such as papyrus, leather, bark, or wood; this practice is still reflected in modern terminology in relation to contracts and agreements (tying the knot, binding, obligation, etc.). In case the Anatolian wooden documents were diptychs, they were presumably sealed by means of strings that were tied around the closed diptych, and to the fastening knot a *bulla* was attached (Herbordt 2005, 37–38; Cammarosano et al. 2019, 148). In a similar vein, strings could be tied around rolled strips or folded tablets of wood or bark, which were subsequently sealed by means of *bullae*.

Concluding Remarks

The Hittite practice of sealing tablets is distinctive in three main ways: first of all, the number of sealed documents found at Ḫattuša is very limited compared to most contemporaneous cuneiform archives; sealed contracts, treaties, and deeds are virtually absent. Second, they are impressed with stamp seals rather than cylinder seals. In the rare cases that cylinder seals were used, they were stamped rather than rolled into the clay, showing how persistent the stamping mechanism was. Third, most sealed Hittite clay documents have strings in their core, a practice that has not been attested outside of Anatolia. The method of sealing by means of cords and *bullae* is not confined to sealed clay tablets, but was in all probability also used for metal tablets.

The practice of using strings and *bullae* in itself is nothing extraordinary; it is well documented for the sealing of documents of leather, parchment, and wood, as well for the sealing of objects. Evidence for the sealing of doors, sacks, vessels and other objects by means of string and lumps of clay is attested all over the ancient Near East from the Neolithic onward (Otto 2010, 469–472). It is, however, very unusual in the case of clay tablets, which were as a rule sealed by means of cylinder seals that were rolled over the clay. When the Hittites took over the cuneiform script, they did not take over the accompanying sealing habit. The reason why they did not do so, is that most documents in Hittite Anatolia that required sealing, such as contracts etc., were not recorded on clay, but on wood. These wooden records were sealed by means of strings and *bullae*. The tying of the strings was a crucial element of the sealing process, which is also evident from the Hittite verb for sealing ("to tie"). Because the symbolic "binding" of the contracting parties (and the witnesses) was such a vital component, the use of strings was transferred to the sealing of clay tablets, in the rare cases that official transactions or agreements were recorded on clay, and not on wood. The sealing of clay tablets, however, remained exceptional, and this was never done on a large scale. The Hittites therefore felt no need to adopt the cylinder seal practice along with the cuneiform script, but instead found a way to merge the sealing of clay tablets with their own sealing traditions, leading to the unique combination of the use of strings, stamp seals and clay tablets (cf. Waal *forthcoming*). In all likelihood, strings or chains were also used for the sealing of metal tablets.

The above scenario would not only explain the curious presence of strings in Hittite tablets but also why only so few sealed tablets have come down to us, and why the stamp steal remained the preferred sealing tool in Anatolia.[45] However, as it is painfully clear that we do not see the full picture, additional or alternative explanations should not be ruled out.[46] The unique hybrid tablet KBo 62.32, which was only discovered in 2006, is a valuable reminder that future discoveries may surprise us.

Notes

1 I would like to thank Jan de Beer, Ben Haring, Céline Murphy, Jonny Russell, Floris van den Eijnde, the anonymous reviewer, and the editors of this volume for their support and helpful suggestions. Needless to say, I am alone responsible for the views expressed here and any errors that may remain.

2 For a recent overview of the Hittite text corpus, see, e.g., Van den Hout 2020; Klinger 2022.

3 A possible exception may be the few tablets found in the "House of the Chief of the Guards," southwest of Sarıkale, see Wilhelm 2013.

4 The largest collection (3402 *bullae* and 430 *Tonverschlüsse*) in the Hittite capital was discovered in the *Westbau* building of Nişantepe in the Upper City (Herbordt 2005; Herbordt et al. 2011) together with 28 sealed land deeds. Other, smaller collections of *bullae* have been discovered—also in combination with sealed land deeds—in Building D on Büyükkale (ca. 200 *bullae* and 15 land deeds, see Güterbock 1940, 1942) and in Temple 8 in the Upper City (83 *bullae* and 10 sealed charters as well as some fragments of other text genres, see Dinçol and Dinçol 2008). In the debris of storerooms 27–34 surrounding Temple 1 a modest collection of 37 *bullae* (without land deeds) was found. In addition, a large collection of *bullae* was recently discovered at the Hittite town Kayalıpınar/Šamuḫa, see Müller-Karpe 2020, 194–214; A. and V. Müller-Karpe 2020, 196–201.

5 According to some, the *bullae* were not (exclusively) attached to wooden writing boards, but (also) to bags of (precious) goods, and the buildings where they were found functioned as depots or treasure rooms (see, e.g., Mora 2007, 2012). Theo van den Hout (2012, 2020, 222–233) has recently proposed that the hordes of *bullae* served as reference collections.

6 For the use of (sealed) writing boards, see, e.g., Symington 1991; Waal 2011; Cammarosano et al. 2019, 136–141.

7 For an edition of the land deeds, see Rüster and Wilhelm 2012. For the sake of convenience, I will use the conventional term "land deed," though it does not entirely cover their content (see Rüster and Wilhelm 2012, 35).

8 See Rüster and Wilhelm 2012, 35–37; Van den Hout 2020, 110–113. The use of the Akkadian language was generally preserved for international correspondence, treaties and some literary compositions. In the earliest phase of the Hittite kingdom, however, it could also be used for internal documents, see on this Van den Hout 2009a, 2009b, 2020, 57–69.

9 Two of them have been found outside of Ḫattuša in İnandık (IK 174–66) and Tarsus (Tarsus 38.1543), for these tablets, see Rüster and Wilhelm 2012, 88–90, 139 respectively.

10 By contrast, most (unsealed) Hittite tablets have a flat obverse and a convex reverse, see, e.g., Waal 2015, 21.

11 The question whether the tablet was sealed before or after it was inscribed is a matter of debate; see, most recently, Rüster and Wilhelm 2012, 34. Herbordt 2005, 27, suggests the following stages: (1) the basis is a semi-shaped tablet; (2) the clay for the seal impression on the obverse is placed on this tablet together with the cords; (3) the surface of the tablet is evened and smoothened; (4) the tablet is sealed in the middle with the king's seal; (5) the seal impression is set off by means of lines drawn around it; (6) the hole in the lower edge is set off; (7) the *bullae* of the witnesses are attached to the cords and sealed; (8) the tablet is inscribed. Following Güterbock (1997, 28), she deems the suggestion that the seal impression was placed into the tablet as a prefabricated piece, unlikely.

12 It thus appears that the original *bullae* were removed from the land deeds, which raises all kinds of intriguing questions regarding the regarding the status of these documents, and the reason(s) why they were kept; see, most recently, Van den Hout 2020, 230.

13 To my knowledge, there are only two other tablets with cylinder seal impressions found in Ḫattuša, and these are incoming letters from outside: KBo 28.65 and KBo 28.82; see Balza 2012, 92–95 with references.

14 See also Balza 2012; Waal 2015, 44–50. Not included here is the treaty tablet KBo 28.108, as the indirect join with the sealing Bo 69/200 is not certain, and it could also have belonged to a land deed (Rüster and Wilhelm 2012, 34; Wilhelm 2013, 348–349). As Rüster and Wilhelm (2012, 34) point out, the obverse of KBo 28.108 does not appear to be curved like other tablets with a stamp seal in the middle. We may further mention ABoT 1.57 which appears to have a deliberately erased seal impression on the reverse (see Otten 1988, 6).

15 Otten and Rüster 1995, 509–512.

16 Though this is not mentioned by Güterbock (1940, 6–7), the photographs on the online Konkordanz of the Hethitologie Portal Mainz show traces of strings in its core, see www.hethport.adwmainz.de/fotarch/bildausw2.php?n=230/f&x=c0b45affa249fee96a981c05cf07c623.
17 See Güterbock 1940, 6–7; Balza 2012, 87–88; Waal 2015, 46.
18 See Güterbock 1942, 10–11; Beckman 1989/90, 290–291; Balza 2012, 89; Waal 2015, 47.
19 See Güterbock 1942, 19, 82; Balza 2012, 90; Waal 2015, 47 (mistakenly identified as CTH 91, cf. the online Konkordanz of the Hethitologie Portal Mainz (www.hethport.uni-wuerzburg.de/hetkonk/hetkonk_abfrageF.php). Judging from the small fragment, the seal appears to be in the middle of the obverse. However, the script on the left side does not continue on the right side after the seal impression, as is the case with the land deeds, but the text rather seems to consist of two separate parts on each side of the seal impression.
20 The preserved part does not seem to have strings, but it cannot be completely excluded that they were present in the missing part, as more than half of the tablet is lost (cf. Torri 2005, 391 n. 22).
21 This tablet, which looks very similar to the above-mentioned land deeds, appears to be a treaty (Devecchi 2015, 95, 2017, 290).
22 The fragment shows a round damage, but this does not seem to be a seal impression that has broken off.
23 For this genre of this text, which was initially identified as a cult inventory, see Carter 1962, 12–13; Cammarosano 2013, 74; for an edition, see McMahon 1991, 53–77.
24 As observed by Gates 2017, 194–195, this practice recalls the so-called *iqqāte* contracts from the preceding Old Assyrian period found at Kültepe/Kaneš Ib and Alişar. These plano-convex tablets have seal impressions of stamp seals in the middle. To my knowledge, however, they do not have strings in their core. As kindly pointed out to me by Jan Gerrit Dercksen, there are a few unsealed Old Assyrian tablets with holes through which strings were inserted. However, these strings clearly served a different purpose: the Old Assyrian tablets each have two holes on one side of the vertical edges, rather than a single hole in the middle of the lower edge. Dercksen (2015, 49) suggests that these tablets were stored suspended from a rope. Alternatively, the strings may perhaps have served to connect them to other tablets, or perhaps to an object.
25 Note that the mention of human witnesses is quite rare in Hittite texts. Apart from the land deeds and KBo 62.32, human witnesses occur in three treaties; the bronze tablet (see section "The Bronze Tablet Bo 86/299"), KBo 4.10+, a treaty with Ulmi-Teššop, who may in fact be the same person as Kurunta, the treaty partner of the bronze tablet, and KBo 1.6, a treaty with Talmi-Teššop of Aleppo in northern Syria, which is reportedly a copy of a stolen tablet, see Devecchi 2010, 8–12. Presumably, most transactions and agreements requiring witnesses were recorded on wood (see section "Hittite Document Sealing: Wooden Documents").
26 It is therefore perhaps not surprising that many of the references to the sealing of clay tablets in Hittite texts appear to concern northern Syrian affairs (e.g., KBo 3.3, KBo 1.6, and KBo 1.8).
27 For the chemical composition of this tablet, see Zimmermann et al. 2010.
28 Or: this is the seventh copy made, thus Otten 1988, 29, 54–55.
29 As suggested by Beckman 1989/90, 293 n. 20, the tablet may have been ritually buried after Tudḫaliya's victory over Kurunta.
30 In the case of the land deeds, the *bullae* attached to the strings were presumably sealed by human witnesses, but judging from the colophon, the bronze treaty was only sealed by the two most important deities of the pantheon, and not by the 27 human witnesses who are mentioned in the text. Note that the number of 27 witnesses does not correspond to the 26 (2 ×13) loops of the chains, which excludes a scenario that, in addition to the two divine seals, to each loop a sealed *bulla* of a witness was attached.
31 Note that Herbordt (2005, 28) also mentions this possibility, but ultimately prefers the interpretation of Neve and Otten.
32 KUB 40.92 rev.? 13'-14': "a bronze tablet was made and it was hung before the Sungoddess of Arinna," see Otten 1988, 55; Watanabe 1989, 267.
33 In the colophon of the bronze tablet, like in most other cases when reference is made to the depositions of tablets, the generic verb *dai-/ti-* (or Akkadian *šakānu*) "to place," "to deposit" is used, without specifying the way in which this was done.

34 By contrast, the Akkadian versions found at Ḫattuša are single-columned. These clay documents are either drafts made by Egyptian scribes or translations of an Egyptian text (e.g., Spalinger 1981; Rainey and Rainey-Cocahvi 1990; Klengel 2002, 80–81).

35 In light of the fact that the Hittite version was apparently sealed by king Ḫattusili and his queen Puduḫepa (see this section), it is worthwhile to entertain the possibility that the Egyptian version was sealed by Ramses and his queen Nefertari (Waal 2016, 35). For a different proposal, see Edel 1997, 104; Beckman 1999, 100.

36 For these "Umarmungssiegel," see Beran 1967, 79–80; Watanabe 1989, 264; Herbordt et al. 2011, 53–60.

37 As for the technique that would have been employed for this, various proposals have been made; e.g., that the tablet was covered in wax (Güterbock 1980, 53) or that the sealing was incised in the metal tablet, like the Persepolis exemplar (Watanabe 1989, 263, 269); see also the discussions of Klengel (2002, 82) and Herbordt (2005, 28).

38 Likewise, Edel's suggestion (1997, 88) that this single seal impression was placed in the middle of a single-columned tablet fails to convince, as it forces one to assume that the Egyptian copyists worked with a two-columned draft tablet from which they copied the text, and that in the end they were given the single-columned sealed original for the seal description.

39 I am much indebted to Ben Haring and Jonny Russell for helping me out with the translation of the Egyptian text.

40 Neve 1987, 408, mentions Bo 86/357, which he identifies as a "Siegelkapsel"; see, for this object, Dinçol and Dinçol 2008, 8, pl. 29 (no. 302).

41 It is of interest that the Egyptian word used to describe the seal image, *ḥp.w*, in other contexts refers to figures that are made of a different material (see https://thesaurus-linguae-aegyptiae.de/lemma/122870, cf. Kitchen's translation "inlaid figure"), which would suggest that the seal impression was executed in another material than silver.

42 The tablet further mentions that the names of the witnesses are to be appended to a document recording a donation (KUB 13.4 obv. ii 36"-37"). Although it is not explicitly stated, this was probably also a wooden tablet.

43 The origin of this tiny diptych, which was originally filled with wax, is unknown. One of the edges bears traces of an unidentified signs, which have recently been tentatively identified as Aegean numerals (Dillo 2021).

44 There is no consensus on the kind of script that was written on the wooden documents, cuneiform or Anatolian hieroglyphs. For the view that the lost wooden tablets were inscribed with cuneiform, see, e.g., Singer 1983, 40–41; Symington 1991, 115–116; Van den Hout 2010, 257–258; for the view that they were inscribed with hieroglyphs, see, e.g., Bossert 1958; Dinçol and Dinçol 2002, 210; Güterbock 1939; Waal 2011; *forthcoming* 2; and for the view that both scripts were used on the wooden writing boards, see, e.g., Hawkins 2000, 3; Cammarosano et al. 2019. Though this debate is still not settled, there is growing evidence for the use of the hieroglyphic script (e.g., Waal 2019; Schachner 2023; Waal and Kloekhorst *forthcoming*).

45 The use of cylinder seals was dominant only during one particular chapter of Anatolian history: the Old Assyrian period (ca. 1950–1720 BCE). The use of cylinder seals was clearly connected to the arrival of the Assyrians, who made use of this type of sealing. Tellingly, as soon as the Assyrian presence in Anatolia disappeared, the use of cylinder seals, which was closely tied to cuneiform tablets, was largely abandoned.

46 The fact that there only relatively few sealed clay documents, for instance, could also be due to the deliberate abandonment of the city (Seeher 2001).

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