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Multilayered Written Artefacts:
Definition, Typology, Formatting*

Written artefacts (WAs), artificial or natural objects with visual signs applied by humans,[1] are the central focus of the Cluster of Excellence *Understanding Written Artefacts: Materiality, Interaction, and Transmission in Manuscript Cultures.* The present paper considers the observation that WAs are shaped by complex processes of production and use, as well as by different settings and patterns.[2] These factors might be subject to change, depending on where, by whom and how a WA is used after its creation. Hence, far from being stable or unchanging entities, many WAs evolve over the course of time, acquiring 'layers' akin to archaeological strata.[3] Such layers either

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[1] For further details on this definition of the concept of 'written artefact', see Bausi et al. 2023.

[2] See Wimmer et al. 2015. The fourfold scheme described in the paper was developed for the study of manuscripts, but also applies to written artefacts more generally.

[3] For an archaeological approach to manuscripts, see Maniaci 2002 and Andrist 2015. On manuscripts as 'evolving entities', and a brief survey of relevant literature, see Friedrich and Schwarke 2016. Layers are often triggered by changes in setting and/or a recontextualisation, e.g. a change of ownership.

modify a WA's contents and might serve to extend, delete or replace them or they are not linked at all to the WA's contents. Yet they always affect the WA they are applied to on the material level, leaving identifiable traces that add to the WA's complexity. This paper suggests calling such complex WAs 'multilayered' – a concept that is arguably best suited to capturing the outcome of continued, at times long-term, or intermittent uses of a WA. The paper also suggests further terms for a more precise analysis of the multilayered nature of WAs, including the distinction between 'primary layer' and 'secondary layer(s)', and between 'closed' and 'open' primary layers, as well as a taxonomy of the acts creating secondary layers (addition, subtraction and replacement of content and/or material).

Previous research on WAs has occasionally employed the term 'layer'. Two main tendencies can be distinguished: in some cases, a *synchronic perspective* was adopted and different types of content (e.g. core- and paracontent) in a single WA were interpreted as individual layers;[4] in other cases, a *diachronic perspective* was preferred, and only the sets of changes introduced into a WA after its completion were identified as layers.[5] Whereas the first approach is mainly concerned with the study of WAs at the moment of their production, the second focuses on the evolution of WAs over time and on the analysis and documentation of the observable changes.

In this paper, we adopt the latter, stratigraphic, approach, which allows the distinction between the artefact as it was originally produced and subsequent stages of its life cycle. The analysis of layers therefore serves to reconstruct the biography of a WA and to understand the cultural and historical context(s) in which it was shaped and reshaped. In doing so, it follows the overall approach of the Cluster *Understanding Written Artefacts*, which engages with WAs from three perspectives: material, interaction with other WAs and humans, and transmission over time. Since the paper grew out of the discussions within Research Field D *Formatting Contents* of the Cluster, our approach to layering puts particular emphasis on the interrelation between layering and formatting (see especially section 3).

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[4] Beit-Arié (1993, 86–88) uses the term 'multi-layered' to denote manuscripts in which multiple texts (written by one hand or more) appear simultaneously on the same page in an integrated layout. Cf. the concept of 'flussi testuali' (textual flows) in Maniaci 2002, 114–115. In her terms, core content and marginal notes (paracontent) represent two different 'textual flows', provided that both result from the same production process. On the distinction between core content and paracontent, see Ciotti et al. 2018.

[5] See, for instance, Gumbert 2004 for Latin manuscripts; and Gippert 2017, Németh 2015, and O'Neal 2019 for Caucasian, Greek, and Japanese palimpsests, respectively. Reeve 1989 [2011] uses the term to refer to different sets of corrections added to a manuscript over time.

1. Definition of layer and multilayered WA

This paper has benefited greatly from recent advances in the study of manuscript codices from Medieval Europe, which have provided a solid basis for our discussion. The authors of *La syntaxe du codex* argue that 'complex codices' – that is, codices that did *not* remain entirely unchanged after their production [6] – are the result of transformations caused by distinct 'acts of production'.[7] The physical manifestation of an act of production is a 'production unit' (*unité de production*/UniProd), which is defined as:

> all the codices or parts of a codex that are the result of the same act of production.[8]

When an act of production (and the production unit that results from it) creates a codex or transforms it, the result is a new 'circulation unit' (*unité de circulation*/UniCirc), which is defined as:

> all the elements that constitute a codex at a given point in time. It can be equivalent to a production unit and/or be the result of a transformation.[9]

This terminology and analytical framework were obviously developed for the study of manuscript codices and allow us to describe their evolution over the course of time. However, the concepts of 'production unit' and 'act of production' in particular can be adapted for the analysis of WAs beyond the codex. To describe the phenomena of the creation of a WA and its subsequent material and content changes, we would like to propose the concept of 'layer'. While the identification of distinct acts of production still lies at its core, our concept of layer was explicitly devised without restriction to a particular book form. It is therefore applicable to a much wider array of WAs, including scrolls, *pothi* manuscripts and inscriptions. We suggest the following definition:

> A *layer* is the result of an act of production that creates or transforms a WA. We refer to the former type of layer as *primary layer* and to the latter as *secondary layer*. WAs with at least two distinct layers (i.e. a primary layer plus secondary layer[s]) are *multilayered*. All layers and the operations through which they may be created are intentional.

In the following, we clarify the essential terms of this definition:

    i)   *Act of production*. In *La syntaxe du codex*, an act of production is defined as 'the set of operations, delimited in time and space, by which one or several

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[6] Andrist/Canart/Maniaci 2013, 61–62.

[7] Andrist/Canart/Maniaci 2013, 59.

[8] Andrist/Canart/Maniaci 2013, 59. All translations from the French original text are by the authors of this paper.

objects or parts of an object are created.'[10] We opted for a broader understanding of an act of production, in order to account for the fact that layering is not necessarily a purely additive process, but can also involve the loss of material from, or the partial destruction of, a WA, e.g. through the trimming of folios (resulting in what might be called a 'negative layer'). Accordingly, our concept of layer similarly encompasses a broader range of phenomena than the related concept of production unit as proposed in *La syntaxe du codex*.

    ii)   *Creating and transforming.* For the current discussion, creating a WA involves the application of visual signs to a writing support, obtaining as a result a new object that is materially independent from other WAs (primary layer). Transforming a WA denotes the process of introducing changes to an already existing WA (secondary layers). These changes can involve the addition and/or subtraction of content and/or material (see section 2 below).

    iii)   *Intentional.* Since our aim is to shed light on the interrelation between layering and the formatting of WAs, which requires human decision-making and purposeful activity, we understand the term 'intentional' broadly in terms of human intention. We are aware that WAs can also change due to nonhuman agents, natural processes and accidental events. For example, white paper becomes yellow, insects eat through palm leaves, or parchment is damaged by fire. Such non-human changes are not part of our discussion in this paper. Nevertheless, natural or unintentional changes can also be catalysts for intentional and human-made changes (e.g. natural decay can trigger the creation of layers to remedy a manuscript in a poor condition).

Following the above definition of multilayered WAs as WAs consisting of a *primary layer* and one or more *secondary layers*, composite manuscripts are a special type of multilayered WA. They combine several separately produced WAs – which all consist of their own primary and possibly secondary layer(s) – in a new WA.[11] This combination process requires the application of a secondary layer that affects all the formerly separate WAs at once: typically a new binding, as well as possibly new foliation, etc.[12]

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[9] Andrist/Canart/Maniaci 2013, 59.

[10] Andrist/Canart/Maniaci 2013, 59.

[11] On composites, see Gumbert 2004, 26–29. It should be noted that in Gumbert's terms, the constituent parts of a composite are 'codicological units' rather than WAs. Not every WA is equivalent to a codicological unit. However, every codicological unit within a composite could be considered a (former) WA of its own.

[12] In a similar vein, reconstructions of fragmented WAs by modern scholars, done virtually rather than by re-joining the actual fragments, could be considered as virtual secondary layers. For an example of a virtual reconstruction of an ancient Chinese bamboo scroll, see Staack 2017.

Palimpsests, which might intuitively come to mind when thinking of multilayered WAs, cannot automatically be assigned to this category. Both the removal of folios from a WA, and the subsequent washing- or scraping-off of the writing could be interpreted as (negative) secondary layers, of the original WA and the removed individual folios, respectively. However, the original WA would in many cases be destroyed during this process and the individual folios would also cease to be WAs, as soon as the writing is removed from them. In addition, from the perspective of the new WA, in which the palimpsested folios are subsequently used, they would in most cases become part of a primary layer, just like fresh folios that have never yet been used for writing.[13]

In case a WA has several secondary layers, it might be possible to determine the exact chronology of these layers. Accordingly, one could theoretically speak not only of secondary, but also of 'tertiary', 'quaternary', etc. layers.[14] However, since the available data do not always allow such fine-grained analysis, we draw a more basic distinction between a WA in its initial state, primary layer, and subsequent stages, in which the WA also contains one or more secondary layers. In doing so, we also lay the focus of our analysis primarily on the question of how layering is anticipated (or not) during a WA's production; in other words, the interrelation between primary and secondary layer(s) (see section 3 below).

We will illustrate our understanding of a multilayered WA with the help of an example that exhibits the difference between a multilayered WA – with core content in the primary layer and paracontent in a secondary layer – and a WA whose primary layer contains both types of content.

The codex Oxford, Bodleian Libraries, MS. Barocci 87, produced in the fifteenth century, contains Aristotle's *Organon* in its entirety. As early as the first half of the sixteenth century, the Cretan teacher Andreas Donos added numerous marginal and interlinear notes. An example of Donos' marginal annotation is found at the beginning of the *First Analytics* (see Fig. 1).

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[13] It should be noted, however, that in rare cases a part of the original content of a palimpsested page seems to have been left untouched – either because it was still deemed useful, or because it was impossible to remove properly – and even to have been incorporated into the content of the primary layer of the newly produced WA. An example is 'reused' painted initials. In addition, as shown by recent scholarship, the underwriting of palimpsests was often not removed entirely, and can be made visible again with the help of multispectral imaging. See, for example, Gippert 2007.

[14] Compare the typology proposed by Andrist (2015, 212), who distinguishes strata based on the degree of dependency or the strength of the connection between them – from low (primary strata) to high (quaternary strata).
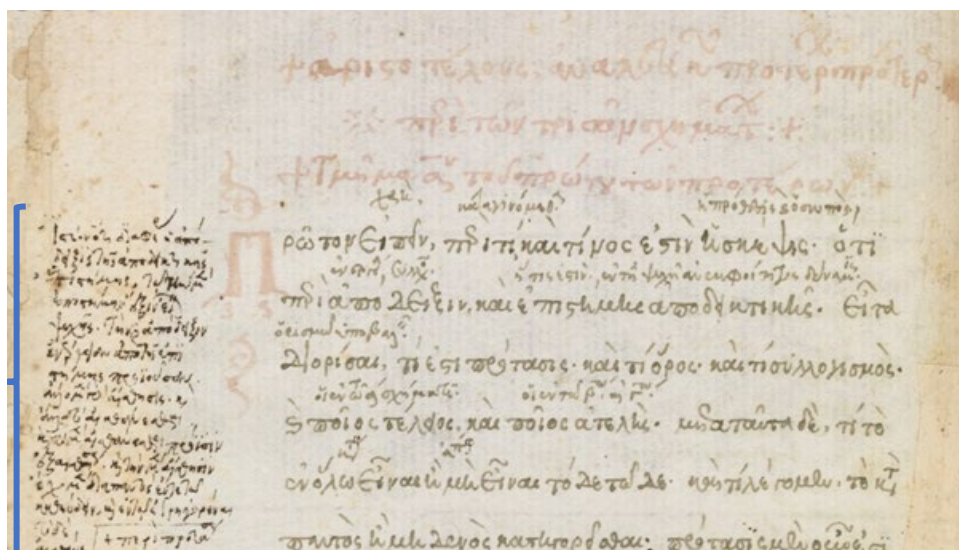
Figure 1: Oxford, Bodleian Libraries, MS. Barocci 87, fol. 78v (detail: marginal note added by Donos, marked in blue by the authors).

By *c.* 1550, the manuscript Genova, BU, F.VI.9 was produced as a copy of Barocci 87. In the Genova codex, the contents of Barocci 87's primary and secondary layers appear as a clean, homogeneous copy. Figure 2 shows the beginning of the *First Analytics* in the Genova manuscript.
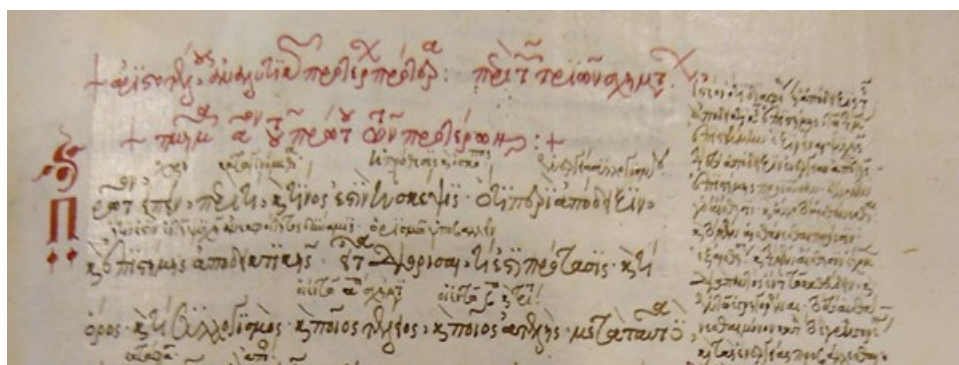

Figure 2: Genova, Biblioteca Universitaria, F.VI.9, fol. 84r.

The differences between the marginal notes in Barocci 87 and Genova F.VI.9 are minimal; both have the same content, function and position in the manuscripts. However, the note in Barocci 87 falls into our category of secondary layer, whereas the one in Genova F.VI.9 is part of the primary layer. The reason for this is that the former represents a transformation of the WA, as it is the result of a secondary act of production; conversely, the note in the Genova codex was created in the same act of production as the WA itself.

To flesh out our definition of layers we will now focus on a typology of the operations whereby the users of a WA create secondary layers, and the interplay of primary and secondary layers.

2. Creation of secondary layers: Addition, subtraction and replacement

A secondary layer can be the result of two basic operations that modify the material and/or content of the primary layer: addition and subtraction. These two actions are often combined because in many cases something is to be removed for something else to be added (replacement). Although the addition or subtraction of content does of course also physically affect the WA, especially if writing is added on a new support, there are 'purely material' changes to WAs that do not directly affect the content. We therefore propose to differentiate between 'material addition or subtraction' and 'content addition or subtraction'. While the former modifies only the physical appearance of a WA, the latter also affects its content. The distinction between 'material' and 'content' is made here mainly for pragmatic reasons, as we are well aware that every concrete manifestation of content in a WA does in fact have a material dimension.[15]

2.1 Material addition

In many paper manuscripts small instances of damage, such as wormholes, were repaired by adding a piece of paper behind or 'into' the holes. Only new paper was added, without any content.

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[15] It should also be kept in mind that a subtraction of content can strictly speaking involve an addition of material, for example, of ink, if a part of a text is crossed out.

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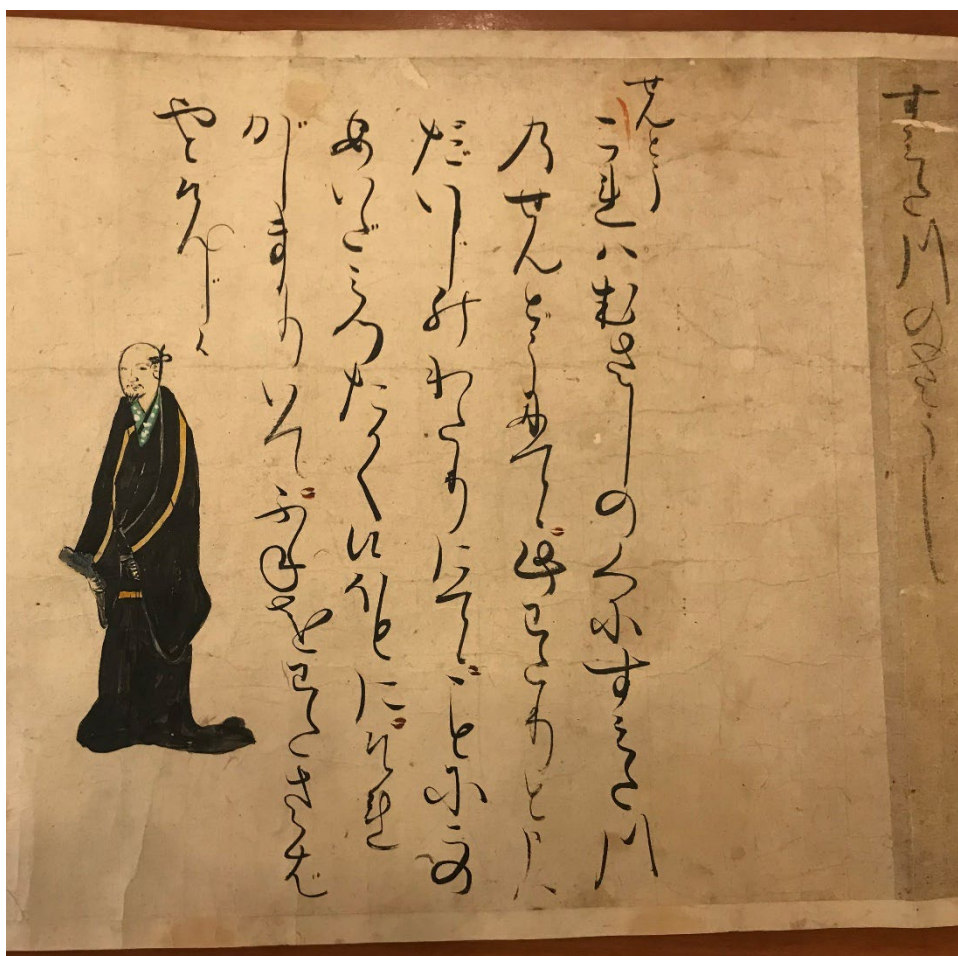
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Figure 3: New York, The New York Public Library, Spencer Collection, Japanese MS. 54, Nogaku Sumidagawa emaki, fol. 2. The brighter spots on the paper reflect restoration work where the scroll has been reinforced with paper.

In the above example (Fig. 3), not only have the holes been filled, but the whole scroll has been backed with stronger paper for conservation reasons.

Another example of material addition can be seen in the manuscript Athens, EBE, 329. This manuscript is a composite of four codicological units made by five scribes between the second half of the thirteenth and the first half of the fourteenth century. Units 2–4 measure *c.* 240 × 150 mm; unit 1 is smaller: in its pristine form its dimensions were 215 × 130 mm. The user who put together the four units that today form Athens 329 must have noticed this disproportion and tried to make the size of the composite more homogeneous by adding paper strips in the lower and outer margin of the first unit, after which the manuscript's first unit measured 240 × 150 mm (see Fig. 4).

Figure 4: Athens, Ethnikē Bibliothēkē tēs Ellados, 329, fols 1v–2r.

2.2 Content addition

Content can be added either directly onto the existing writing support of a WA or onto newly added writing support.[16] The contents of a new secondary layer may or may not be related to the contents of the primary and/or any previous secondary layers.[17] Both types of content addition, with and without new writing support, occur in the manuscript Città del Vaticano, BAV, Reg. gr. 116 (late thirteenth century), a paper codex that contains Aristotle's *Organon*. It preserves traces left by its many users between the thirteenth and the fifteenth century. One of them, Sylvester Syropoulos,[18] added numerous notes between the lines and around the core content of the primary layer, using a different *Organon* manuscript, closely related to Città del Vaticano, BAV, Vat. gr. 1498 (*c.* 1430), as his model (see Fig. 5, fol. 59v). Interestingly, Syropoulos also inserted

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[16] Cf. Andrist/Canart/Maniaci 2013, 63–65.

[17] Depending on the relation to the content of the primary/previous secondary layer, the added contents could be categorised as either (another) core content, paracontent, or guest content. On this distinction, see Ciotti et al. 2018.

[18] The hand of Syropoulos in Reg. gr. 116 was identified in Pausillo 2022.

various new leaves in the middle of the primary layer, creating additional space for his notes (see Fig. 5, fol. 60r).

Figure 5: Città del Vaticano, BAV, Reg. gr. 116, fols 59v–60r. New content was directly added on the primary layer (left) and new leaves with new content were inserted into it (right).

In South Indian palm-leaf manuscripts, there is no commonly accepted way of adding content to the existing folios, due to the density of the writing. Therefore, content additions most frequently occur on the blank guard leaves at the beginning and end of the manuscript, or on folios added before and after them. In both cases, this is often detectable because the respective folios are not counted in the foliation. An example of both techniques is evident in the manuscript GOML R.5184 (undated: eighteenth/nineteenth century) from the classical literary tradition. Its two originally blank guard leaves now bear several secondary layers of shelf marks of the Government Oriental Manuscripts Library in Chennai, in addition to some extra lines of writing on the second guard leaf. This is followed by a folio with paracontent in verse form, still outside the count, which may have been inserted later as the size and quality of the material is slightly different from that of the other folios (see Fig. 6).

Figure 6: Chennai, GOML R.5184, guard leaves 1+2 (top) as well as the unnumbered inserted folio (bottom), recto.

In West African Islamic manuscripts, content added on new writing support can be stitched or attached with a string to the writing support of the primary layer. In the Hausa tradition, this practice is called *jemage* ('bat') (see Fig. 7).
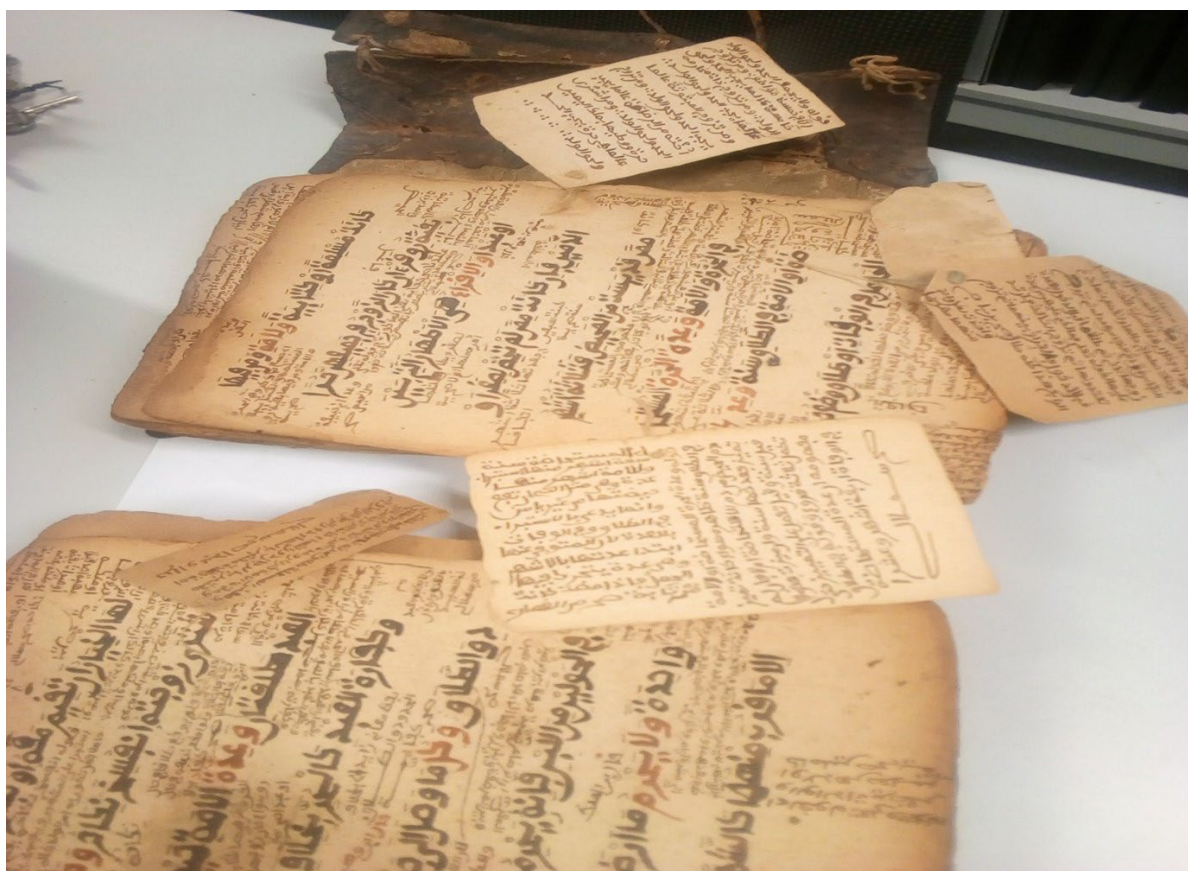
Figure 7: Kano(?) (Nigeria), private collection, loose-leaf manuscript with legal treatise by Abī Zayd al-Qayrawānī, commentary on additional slips of paper attached with string.

In the case of clay tablets from ancient Mesopotamia, the material characteristics of the writing support generally posed challenges for later content additions. Once the clay dried, it became much less convenient to add further cuneiform signs using a stylus. Nonetheless, scribes occasionally resorted to incising signs onto (partly) dried tablets, as exemplified by the clay tablet K.4317+K.12568 (see Fig. 8). While the first line of the colophon was inscribed concurrently with the tablet's core content, the second and third lines were added to the dry tablet during a subsequent act of production, likely by a different hand. Consequently, the cuneiform signs in these lines are not as deeply incised into the clay.
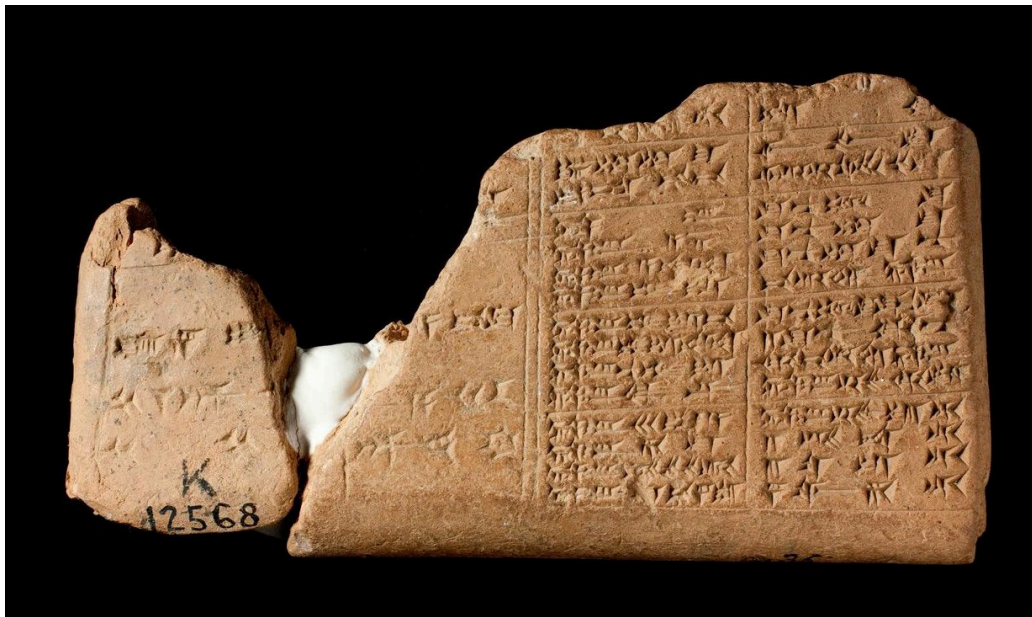
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Figure 8: London, British Museum, reverse of the tablet K.4317+K.12568, with three-line colophon on the left side of the lower surface.

2.3 Material subtraction

A typical case of material subtraction occurs when the margins of a manuscript are trimmed to make it easier to use, or fit for a new binding. Often it is not easy to determine whether a manuscript underwent such a transformation, and to detect a negative layer. However, on some occasions, for example when the trimming accidentally causes the loss of part of the content (especially marginal annotations), there is a clear indication that the margins of the primary layer were removed (Fig. 9).
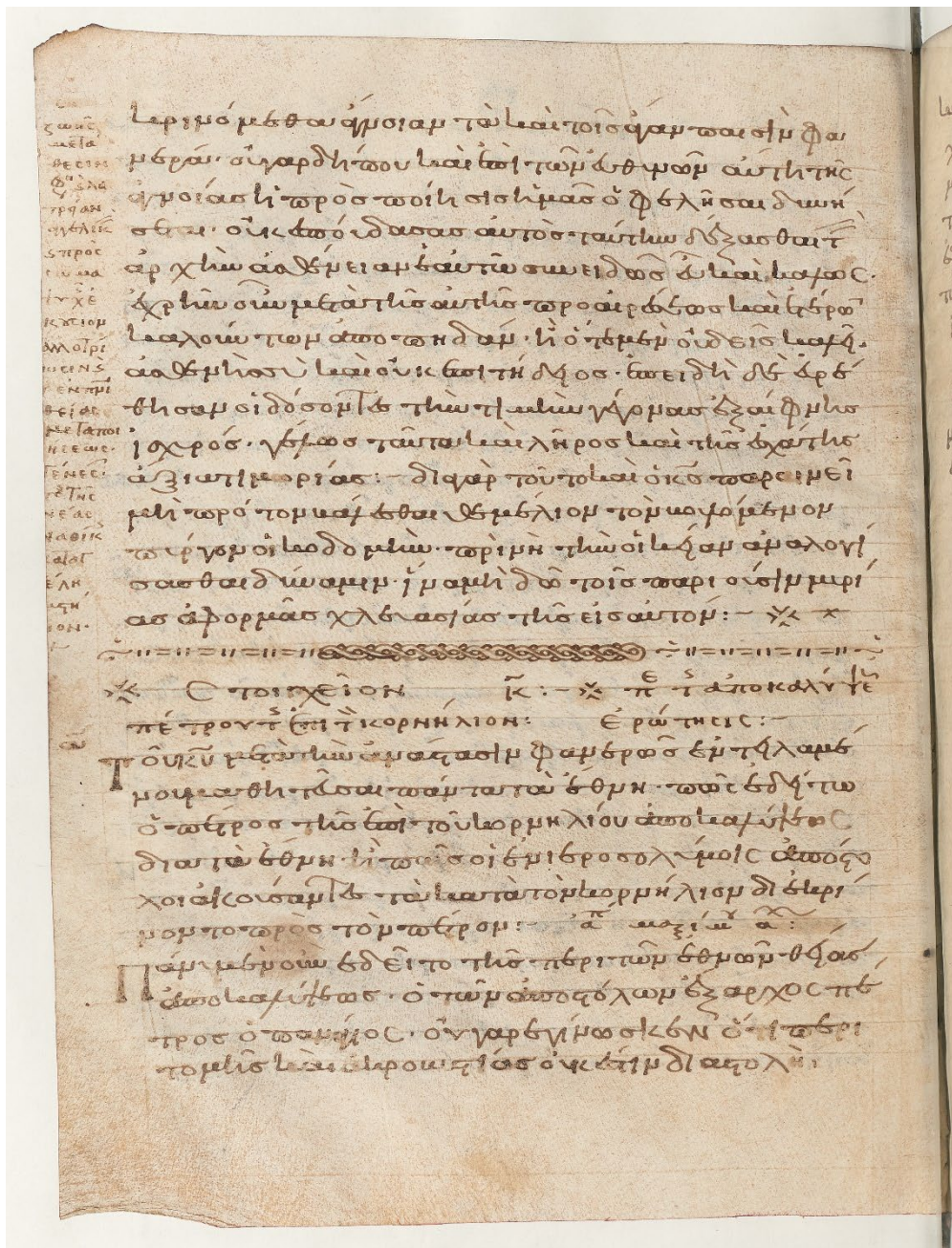
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Figure 9: Paris, BnF, Coislin 294, fol. 123v. The mutilated marginal annotations prove the trimming.

Stricto sensu, the case above would also be an example of content subtraction because the content is no longer complete. However, the intention of the user who created the secondary layer was probably just to make the manuscript smaller in format, most likely to make it fit for a new binding, and not to delete part of the content. Considering that all folios in the manuscript are of the same size (and were already part of the primary layer), the case of fol. 123v suggests that the other folios were likewise trimmed, even if this is not obvious from mutilated marginal annotations.

2.4 Content subtraction

Content can be subtracted with or without its writing support. The most common types of content subtraction without removal of writing support are erasure and cancellation, the former implying the physical removal of ink as well as part of the writing support through scraping, and the latter the marking of contents as subtracted, e.g. with the help of a strike-through.[19]

The manuscript Città del Vaticano, BAV, Reg. gr. 116, mentioned above, provides a good example of content subtraction by erasure. The content of the primary layer was corrected by a user from the fifteenth century using an unidentified manuscript related to Vat. gr. 1498 (see above). Throughout the manuscript, the anonymous user modified the text of the primary layer. One such case is found on fol. 105r of Reg. gr. 116 at Aristotle's *First Analytics* I 8, where the text of the primary layer most likely read ὑπάρχειν τε καί (*uparchein te kai*). Today, between ὑπάρχειν (*uparchein*) and καί (*kai*) one finds an erasure covering the space of two letters (see Fig. 10). This negative layer is most likely the result of a correction made by the fifteenth-century user who followed the version of the manuscript from Vatican City, where τε (*te*) is (mistakenly) omitted.
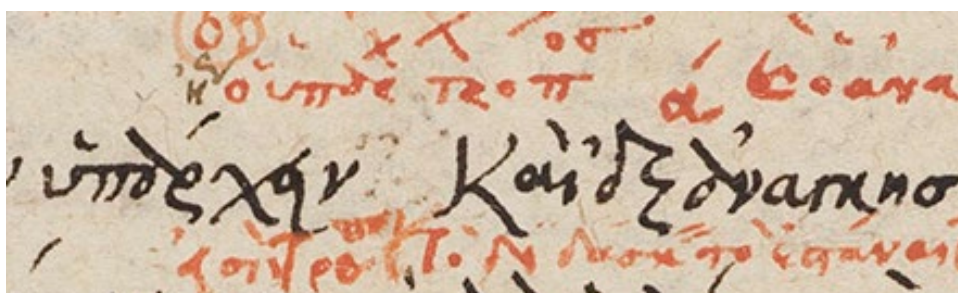

Figure 10: Città del Vaticano, BAV, Reg. gr. 116, fol. 105r.

The following example of a cancellation is taken from a prompt book of Gotthold Ephraim Lessing's *Nathan der Weise* (Theater-Bibliothek: 1988a). Some lines of the dialogue shown in the sample are clearly crossed out (see Fig. 11). In the theatre context this means that the respective sections are no longer considered as a part of the dramatic text on which a given production is based. By crossing it out, the content is removed.

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[19] On different types and techniques of correction, see Wakelin 2014. In the case of erasure, it is especially hard to tell if the operation was carried out by the scribe (or corrector) as part of the production process in which the primary layer was created, or in a different, posterior production process, because 'an erasure is anonymous' (Parker 2009).
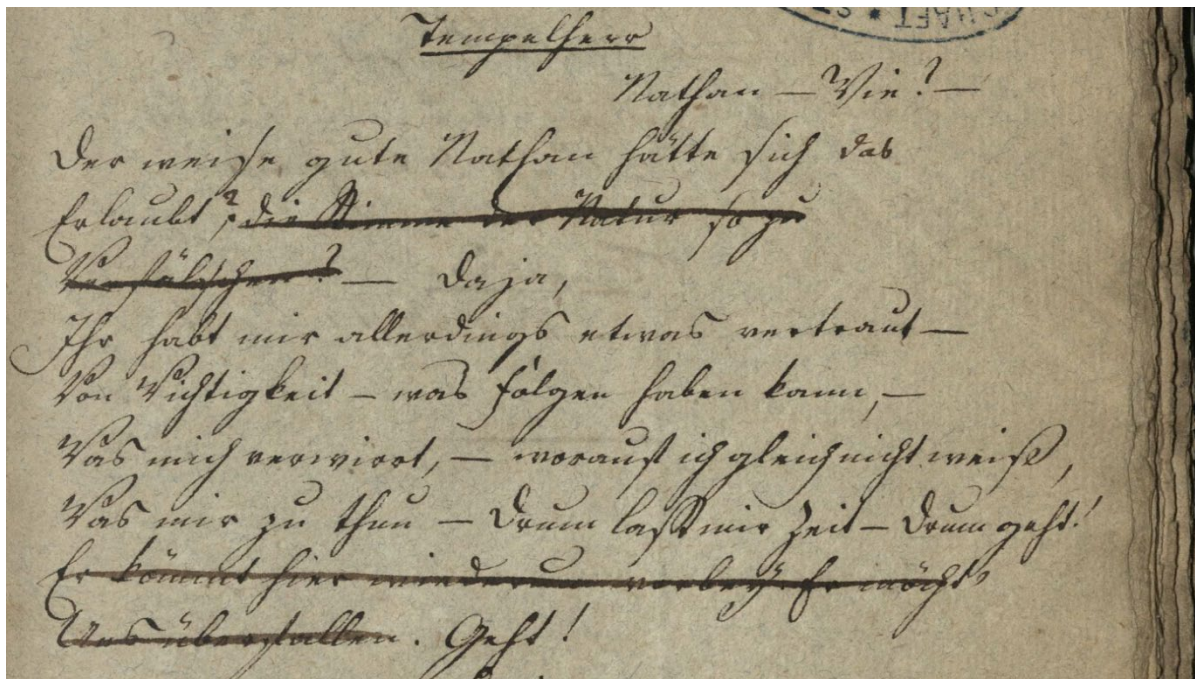
Figure 11: Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky, Theater-Bibliothek: 1988a, fol. 64r.

In the case of South Indian palm-leaf manuscripts, on which the writing is incised and later inked, the writing support as well as the writing technique do not allow erasures. Therefore, larger sections of text are often deleted with a strike-through, seen in the bottom line of EO-0817 (see Fig. 12).
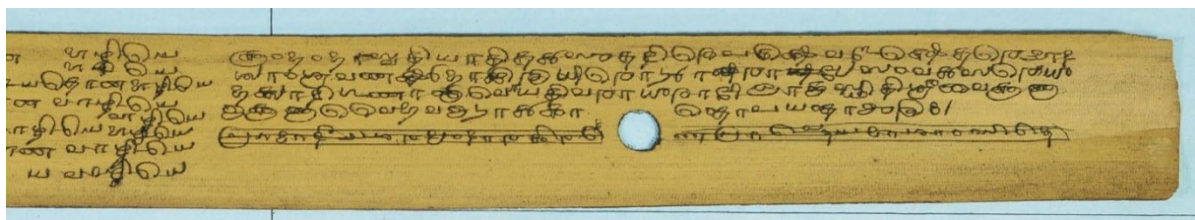

Figure 12: Puducherry, École française d'Extrême-Orient, EO-0817, fol. 5v.

In other cases, content is subtracted together with its writing support. The paper manuscript Oxford, Bodleian Libraries, MS. Barocci 91 (*c.* 1455–1475) is poorly preserved and in its current state, the codex has three sets of folio numbers. The oldest set is in Greek; the other two are in Arabic numerals. The sets of Arabic numerals count 337 folios; however, the oldest Greek folio numbers allow us to fathom that in its original form the manuscript comprised 552 folios and thus around 250 folios are missing from the volume today. In fact, an inspection of Barocci 91 confirms that several points in the middle of the manuscript show traces of intentional mutilation. For example, between

fol. 16 (Greek number θ´ = 9) and fol. 17 (Greek number πϛ´ = 86), 76 folios were cut off and a part of what was their inner margin remains in the codex (see Fig. 13, right side).[20]
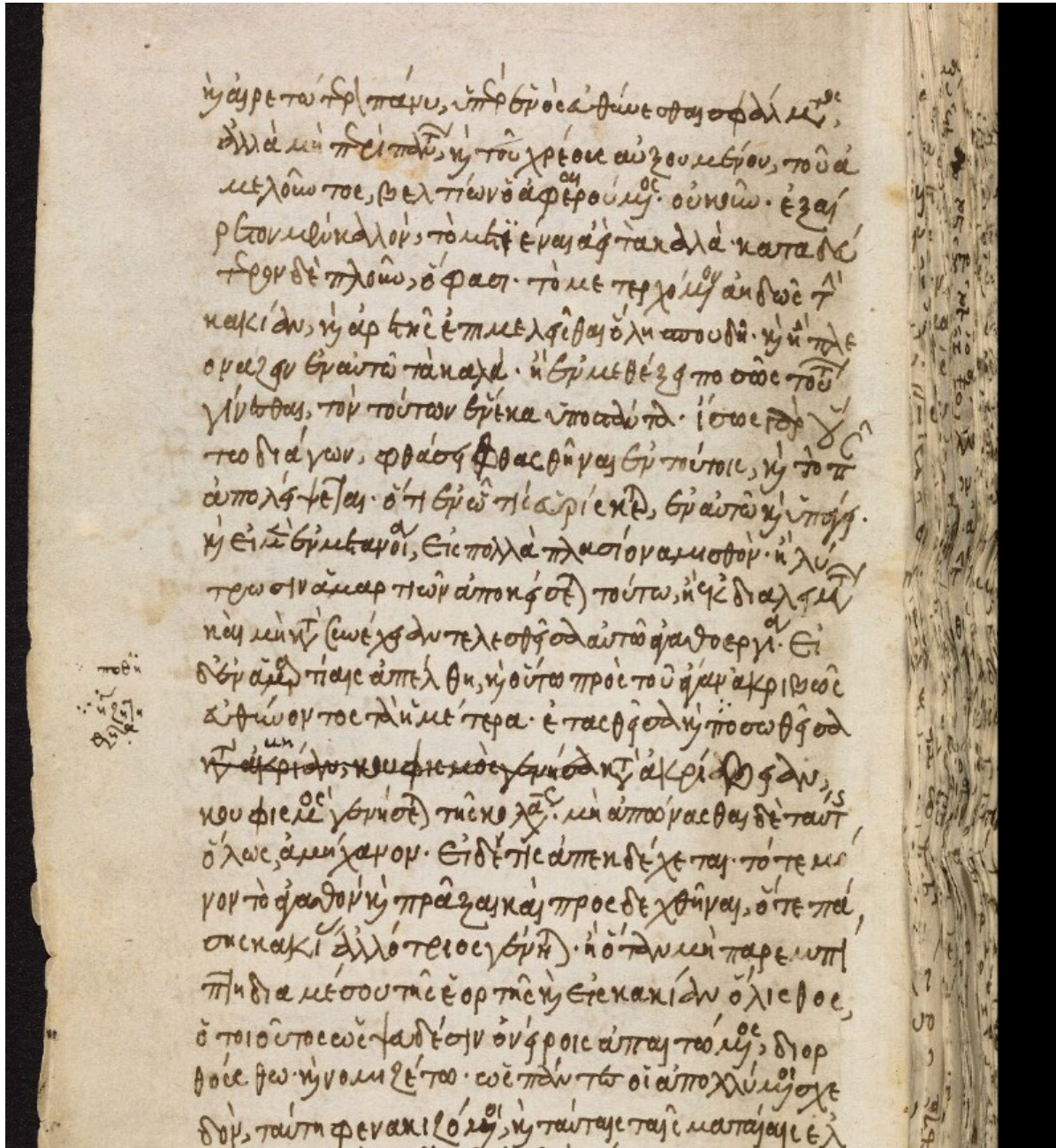
Figure 13: Oxford, Bodleian Libraries, MS. Barocci 91, fol. 16v.

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[20] Interestingly, Barocci 91 preserves a very detailed (although incomplete) table of contents which accurately records where in the manuscript the text of each item begins. Thus, it is possible to reconstruct the contents of several folios that are missing from Barocci 91 today. The table of contents informs us that the missing pages between fols 16 and 17 contained works against the Latin *credo*.

2.5 Combinations of subtraction and addition (replacement)

In the following we will introduce examples that show different combinations of content subtraction and addition: subtraction of content from the primary layer and addition of a secondary layer of content on existing writing support, and subtraction of content from the primary layer and addition of a secondary layer of content with new writing support.

A portion of the content in the primary layer of the manuscript Città del Vaticano, BAV, Reg. gr. 116 preserves the text of the *First Analytics* of Aristotle according to the text of the manuscripts Città del Vaticano, BAV, Vat. gr. 1693 and Vat. gr. 243, as well as Città del Vaticano, BAV, Ottoboni 386. As in the case of those manuscripts (and a few others), the text in the primary layer of Reg. gr. 116 must have read δεικτέον τὴν ἀπόδειξιν (*deikteon tēn apodeixin*) at the end of *First Analytics* I 15 (35b 11). Syropoulos, who corrected the manuscript in the fifteenth century, changed δεικτέον (*deikteon*) to ληπτέον (*lēpteon*) (see Fig. 14), which is a variant he must have found in the manuscript that he employed to correct the primary layer of Reg. gr. 116 (cf. above).
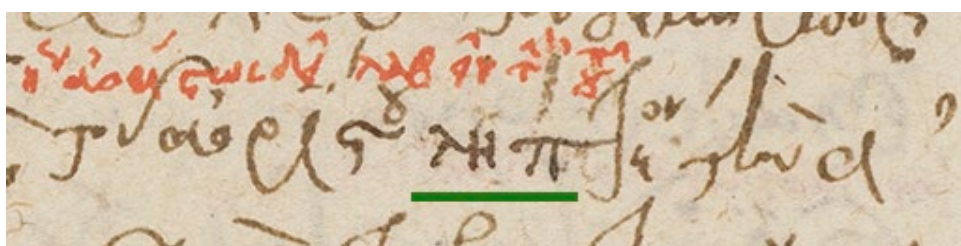

Figure 14: Città del Vaticano, BAV, Reg. gr. 116, fol. 114v (correction indicated with a green line by the authors).

In the example, palaeographical considerations suggest that -τέον was written by the scribe who produced the primary layer of Reg. 116, whereas ληπ- was written by the fifteenth-century corrector. Below the text added by the later hand, one can distinguish some marks that most likely correspond to the content of the primary layer that the corrector erased before writing ληπ-.

When substantial modifications are to be made, a user may add new writing support with new content to the primary layer. A prompt book from the late eighteenth century containing an adaptation of William Shakespeare's *Othello* exemplifies this (see Fig. 15). In Theater-Bibliothek: 571, newly added paper was directly pasted over the lower part of fol. 24v and covered what had been written there. Such a 'paper practice'[21] was used to insert a new or extensively revised text. Here, the operation resulted in a secondary layer that affected the writing support of the primary layer as well as its content.

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[21] Cf. Pethes 2019, 99–104. Paper practices, according to Pethes, are procedures 'such as turning, stacking, filing, ripping – as well as including folding and gluing household papers and paper toys' (Pethes 2019, 100–101).
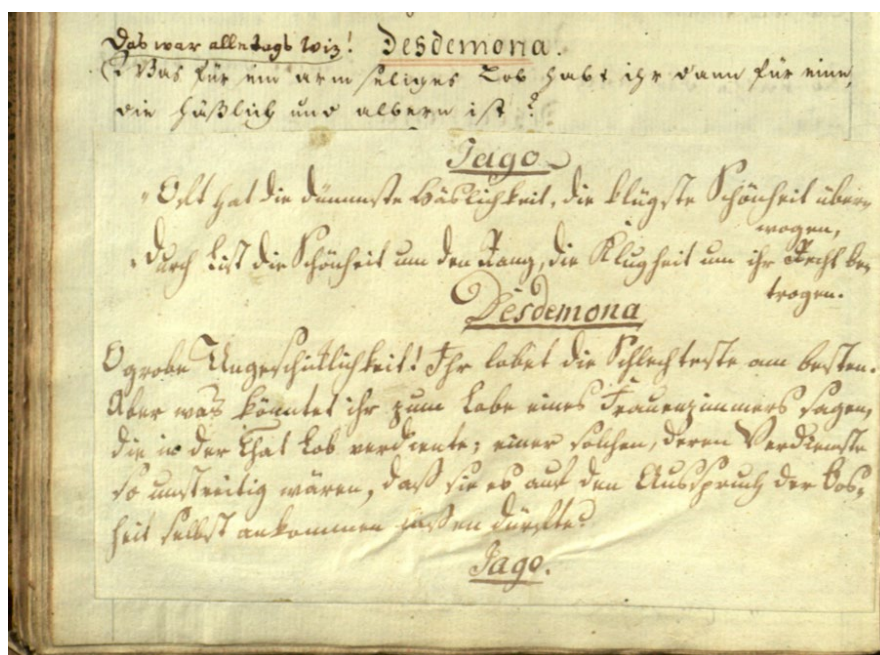
Figure 15: Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky, Theater-Bibliothek: 571, fol. 24v.

Even inscriptions in more durable materials are not immune to later changes. In the fifth century BCE, an alliance between Athens and Leontinoi was recorded on stone (see Fig. 16). There seem to be two parts of the text: the part below contains general information, while the part above provides the details of the parties involved in the alliance. What appears to be a horizontal line on the photograph is in fact a small increment of 3 mm. This shows that the upper part of the stele has been thoroughly erased to make way for new text, which was inscribed by a second hand, and is now thinner. Thus, the general information of the military alliance stayed the same, while details of the parties involved were 'updated'.
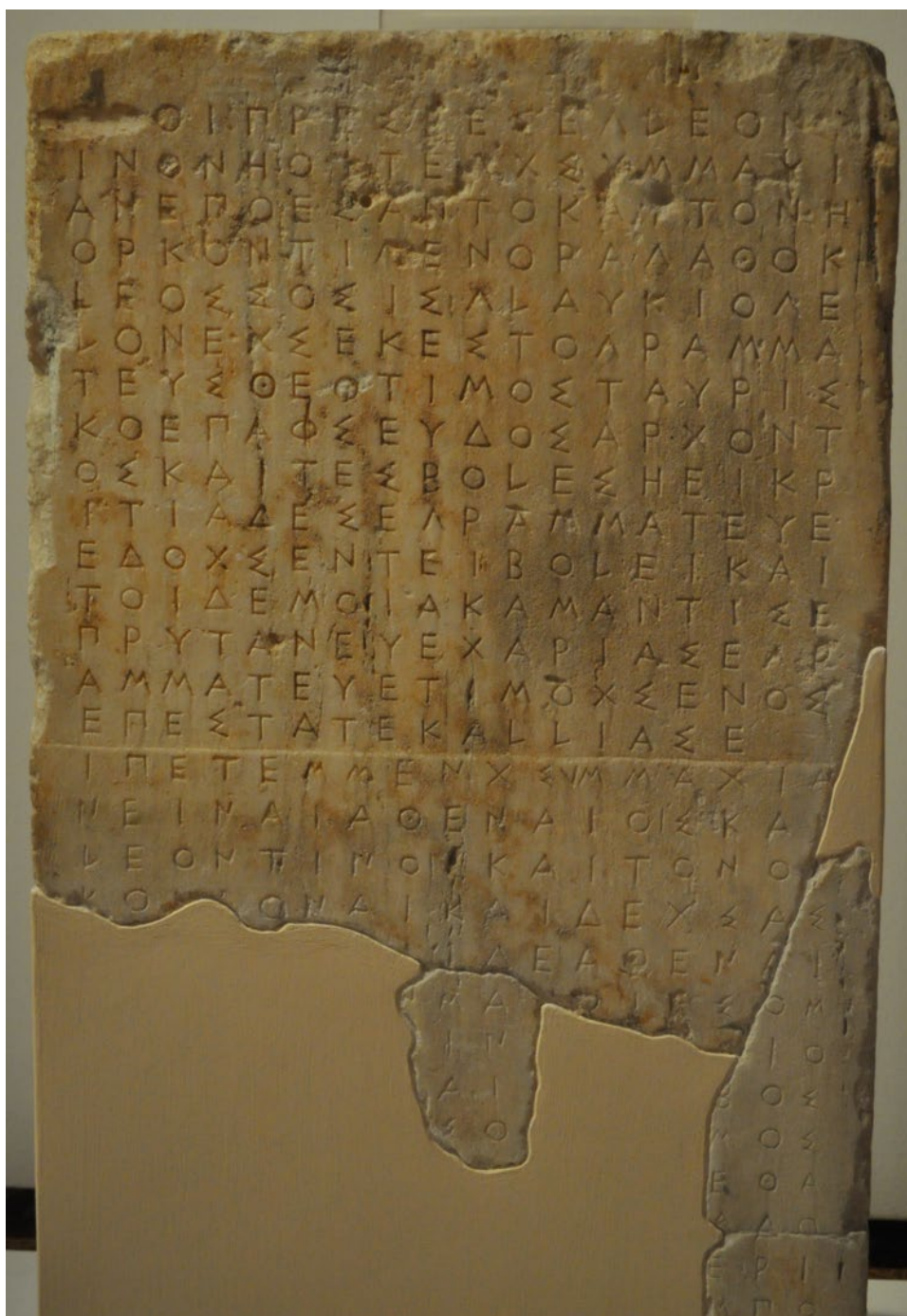
Figure 16: Athens, Epigraphic Museum, EM 6855 (IG I3 54).

Operations involving content or material replacement are often part of restoration campaigns. For instance, new folios with the relevant content (secondary layer) are created as a restoration of a defective primary layer. In some cases, such measures do not even affect a WA's contents, for example, if a new binding (secondary layer) is made to replace an old one in the primary layer.

An unusual or rather unfulfilled case of content replacement, possibly for the purpose of restoration or preservation, is found in the West African Islamic MS.5.Konduga

Qur'an (eighteenth to nineteenth century). The last folio of the primary layer, fol. 249, contains the Qur'an, sura 102–107 with a dense exegetical paracontent around the core content. The folio is poorly preserved and parts of it had to be repaired by stitching (Fig. 17).
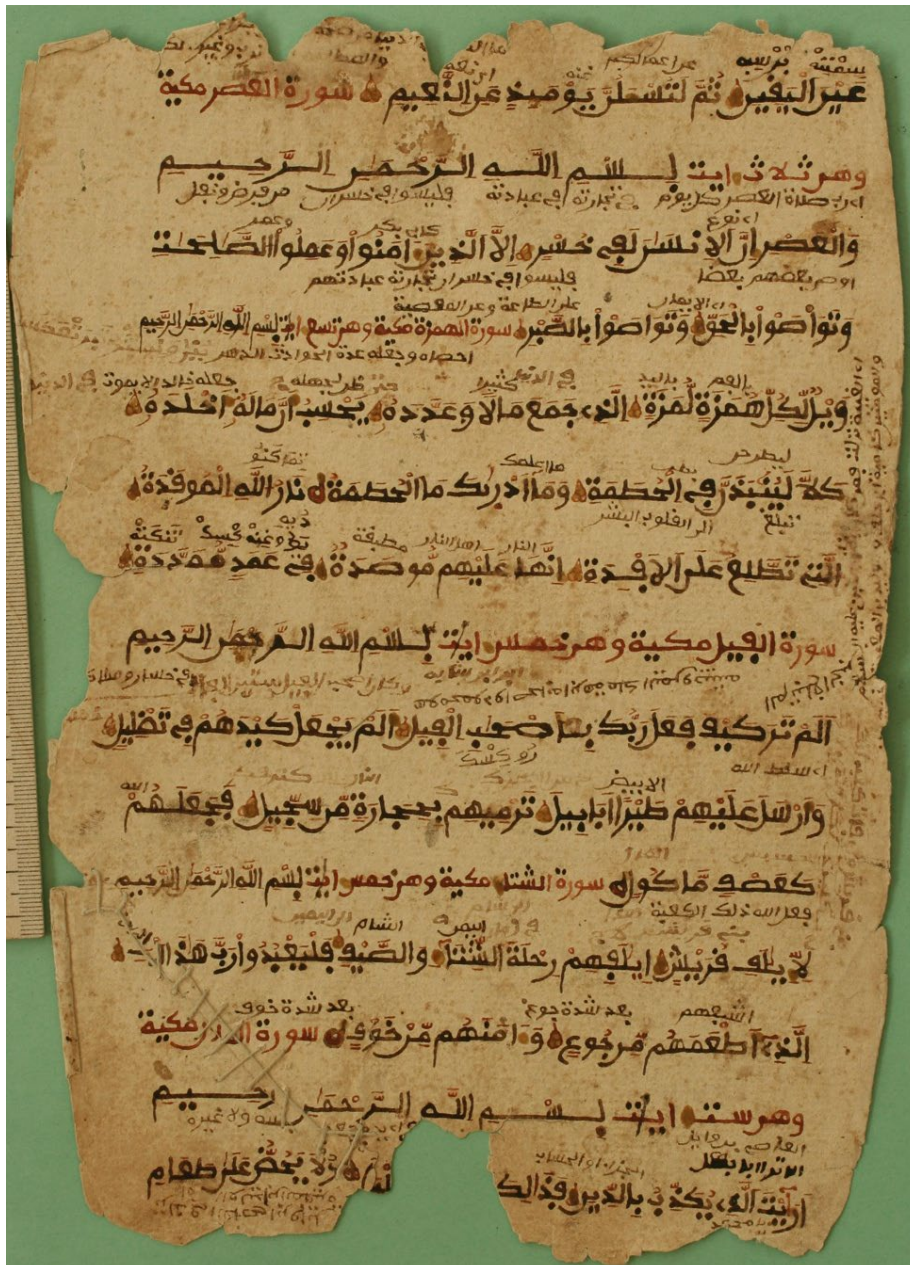

Figure 17: Borno, Nigeria, private collection, MS.5 Konduga Qur'an, fol. 249a.

An anonymous user of the manuscript, fearing the loss or complete destruction of the last folio of the primary layer, produced a faithful copy of its core- and paracontent. For this, they used new writing support (see Fig. 18).[22]

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[22] Cf. Bondarev 2013.
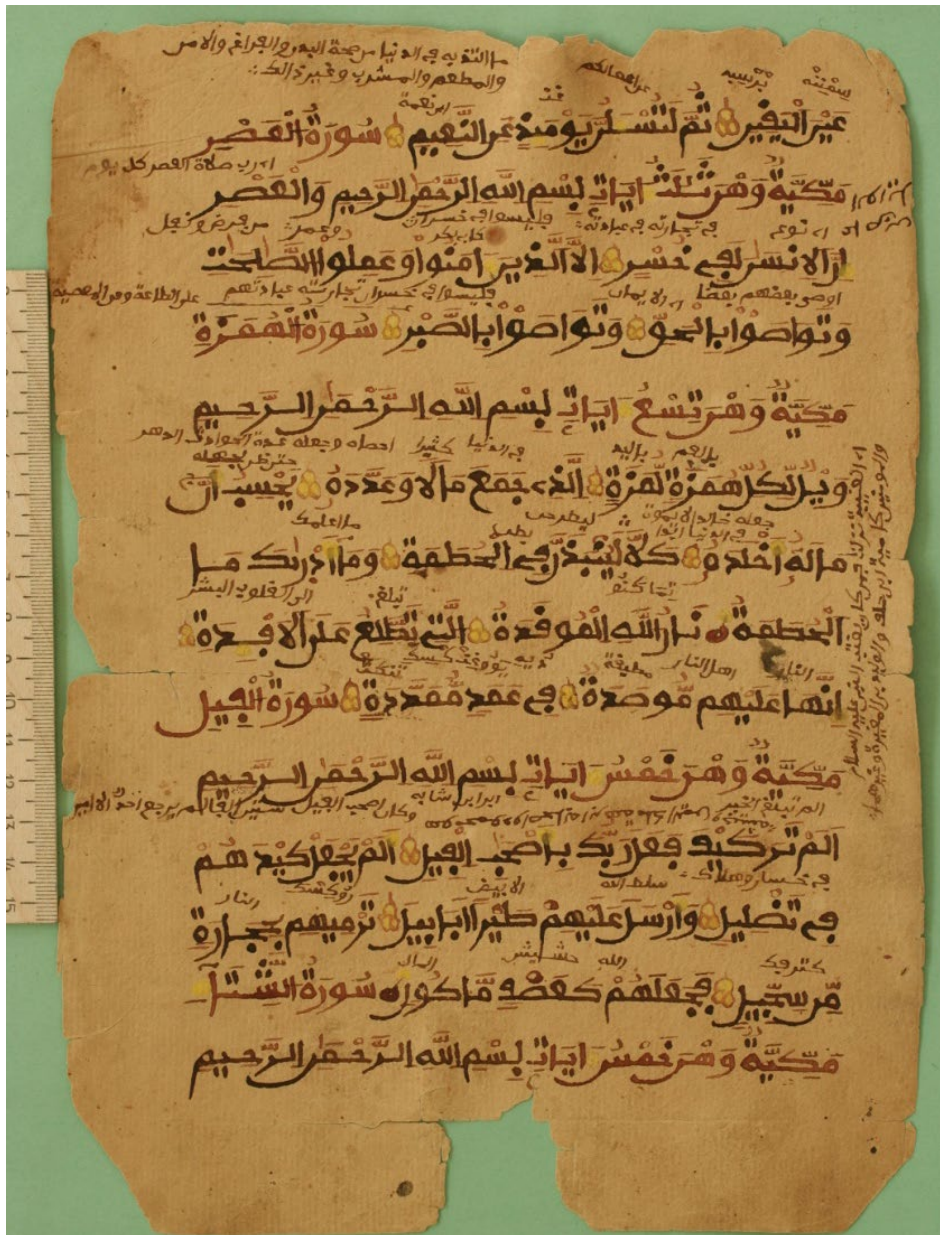
Figure 18: Borno, Nigeria, private collection, MS.5 Konduga Qur'an, fol. 250a.

This case illustrates the complexities of understanding the intentions or motivations behind the production of a secondary layer. Originally, the current fol. 250 was produced to replace content (the Qur'an text and its paracontent) in the primary layer. For some reason, that replacement did not take place and both folios were kept as part of the same WA, resulting in a case of addition (and not replacement) of content.

3. Interplay of primary and secondary layers: content addition

Having described the basic operations whereby secondary layers are created – addition, subtraction and replacement – we now turn to the interplay between primary and secondary layer(s) in terms of their respective formatting. Although layers are by definition always created intentionally, in many cases secondary layers were not anticipated by the producer of the primary layer. The question of whether the addition of secondary layers was envisioned when the primary layer was produced, has a substantial influence on the formatting of both. At the same time, because secondary layers are always at least materially dependent on previous layers (either primary or secondary ones), they must be seen in relation to each other.

The following sections will discuss *closed* and *open* primary layers – so called depending on whether or not the original creators intended or prepared them for subsequent additions – and the secondary layers they typically acquire. Due to the complexity of the possible combinations, we have decided to focus especially on the case of content additions on existing writing support – to our knowledge the most frequent type of secondary layer occurring on multilayered WAs. Accordingly, we will mainly examine how visual organisation and/or (para)content are employed to mark primary layers as open or closed, and to influence the possibilities of creating secondary layers by adding content.[23] The same twofold distinction between closed and open can generally be made for secondary layers, because their creator may or may not design them in a way that can easily accommodate a further secondary layer. In addition, the closed-open distinction is not to be understood as a clear-cut dichotomy, but rather as a continuum. No primary layer can be described as either completely closed or open. In fact, a single primary layer often consists of different areas that can be closed or open.

Even though we focus below on features of formatting, openness and closedness are, of course, likewise related to the type of book form/binding and writing support of a WA. For example, the way many palm-leaf manuscripts are bound makes it – at least theoretically – very easy to add additional leaves, especially at the beginning and end of a manuscript.[24] In contrast, in terms of writing support, adding content to a clay tablet becomes exceedingly challenging once the clay has dried. This is why, on

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[23] Following the common usage of the term 'visual organisation' at the CSMC, it is understood here as an extension of the concepts 'layout' or '*mise en page*', which are closely related to printing and therefore usually refer to individual pages or openings of codices. Visual organisation is concerned with the same visual features but considers the WA as a whole. On columns and other patterns of visual organisation in manuscripts, see Wimmer 2024.

[24] On *pothi* manuscripts and their bindings (including also unbound forms), see Ciotti 2023. For a comparable example of open primary layers from medieval Syrian book culture, see the corpus of unbound booklets discussed in Hirschler 2020, chap. 3.

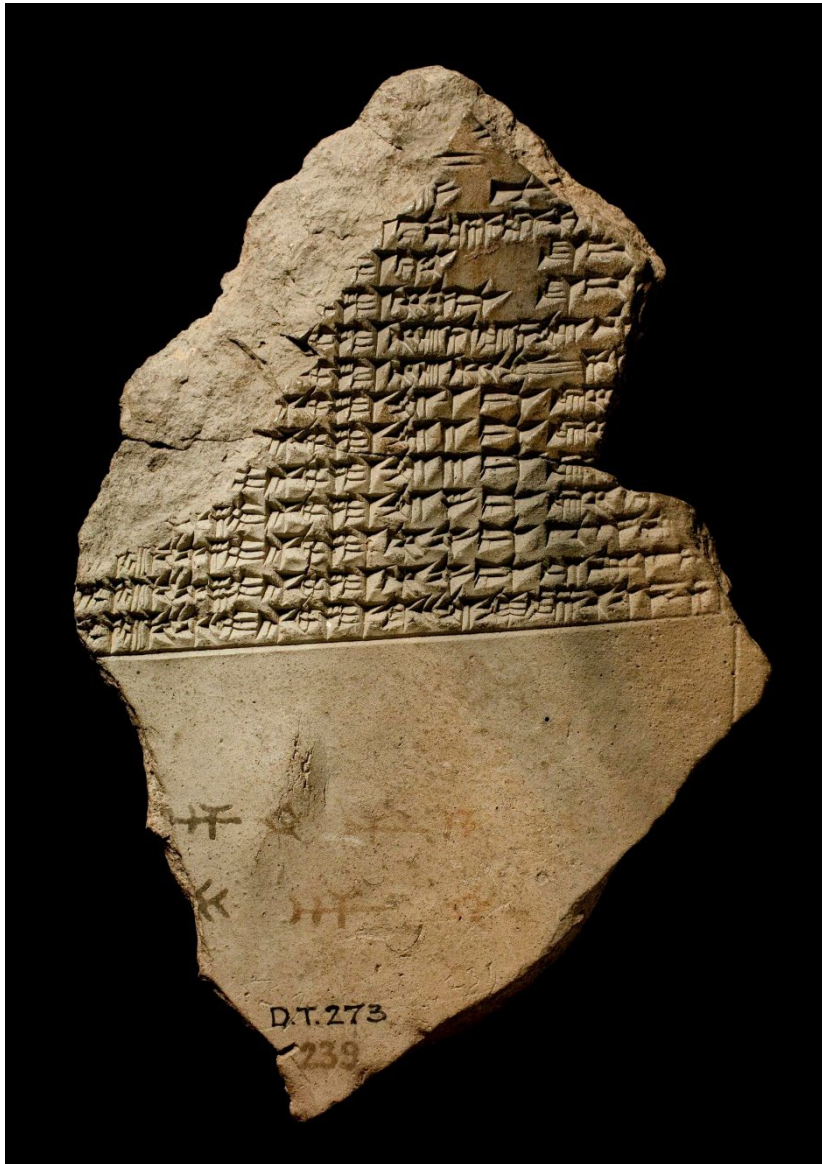occasion, another writing implement and substance, such as brush and ink, were employed (see Fig. 19).

Figure 19: London, British Museum, reverse of the fragment DT.273, with a colophon added in ink at the bottom.

3.1 Closed primary layers

Many WAs became multilayered at some point during their 'life', because one or more users felt the need to engage with the WA in a more substantial way rather than to remain mere owners or passive consumers. Although calling it 'mere happenstance' would not do justice to this phenomenon, it is clear that the producer(s) who created the primary layer did not necessarily plan or even anticipate the creation of secondary layers by subsequent users. In this case, the primary layer can be described as closed, meaning that a later creation of secondary layers was probably not intended by the producer, even though the primary layer was not necessarily designed in a way that

prevented the creation of secondary layers.[25] Rather, we could say that the primary layer would not *invite* the creation of secondary layers in any way, for example through a visual organisation that leaves ample blank space. Of course, this does not stop users from adding layers even in rather closed areas of the primary layer; it just makes their task more difficult and the resulting formatting looks more chaotic, because the creator of the secondary layer has to deal with the fact that little or no space might be left on the WA, and has to find other ways to accommodate an additional layer, e.g. by squeezing writing between lines, using abbreviations for a text, or changing the script direction. Therefore, secondary layers that are added to closed (areas of) primary layers often intrude upon the space reserved for the content of the primary layer. We call this formatting of secondary layers *disruptive*. Of course, limited space might also lead to an addition of further writing support to a WA. This might give the creator of the layer the possibility to adhere to the formatting of the primary layer. The following examples show secondary layers that are added to closed (areas of) primary layers.

The manuscript Slg. Unschuld 8051 contains hundreds of medical recipes. Sometime in the early nineteenth century a physician or pharmacist by the name of Tang Tingguang seems to have started this collection with the creation of a primary layer that contained roughly 600 recipes. In the following 100 years, not only he but also several other individuals added secondary layers in the form of further recipes and comments into open and closed areas of the primary layer.[26] As we can see on the left page shown in Fig. 20, an unknown later hand made additions in the upper and lower margins as well as in the spaces that divided the recipes recorded by Tang Tingguang. The formatting of these additions is clearly different from that of the primary layer. For example, neither the upper nor the lower margin was left blank by the interlinear additions. Overall, the page therefore appears more chaotic than the page on the right-hand side, which does not contain later additions and hence does not show a heterogeneous formatting.

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[25] An example of such a stronger form of closedness would be legal contracts, for which empty space on the writing support is purposefully minimized to prevent any manipulation.

[26] The manuscript contains blank pages in-between different sections of the content, which have to be considered as open areas of the primary layer. The producer of the primary layer in fact usually added recipes (secondary layers) in these spaces.
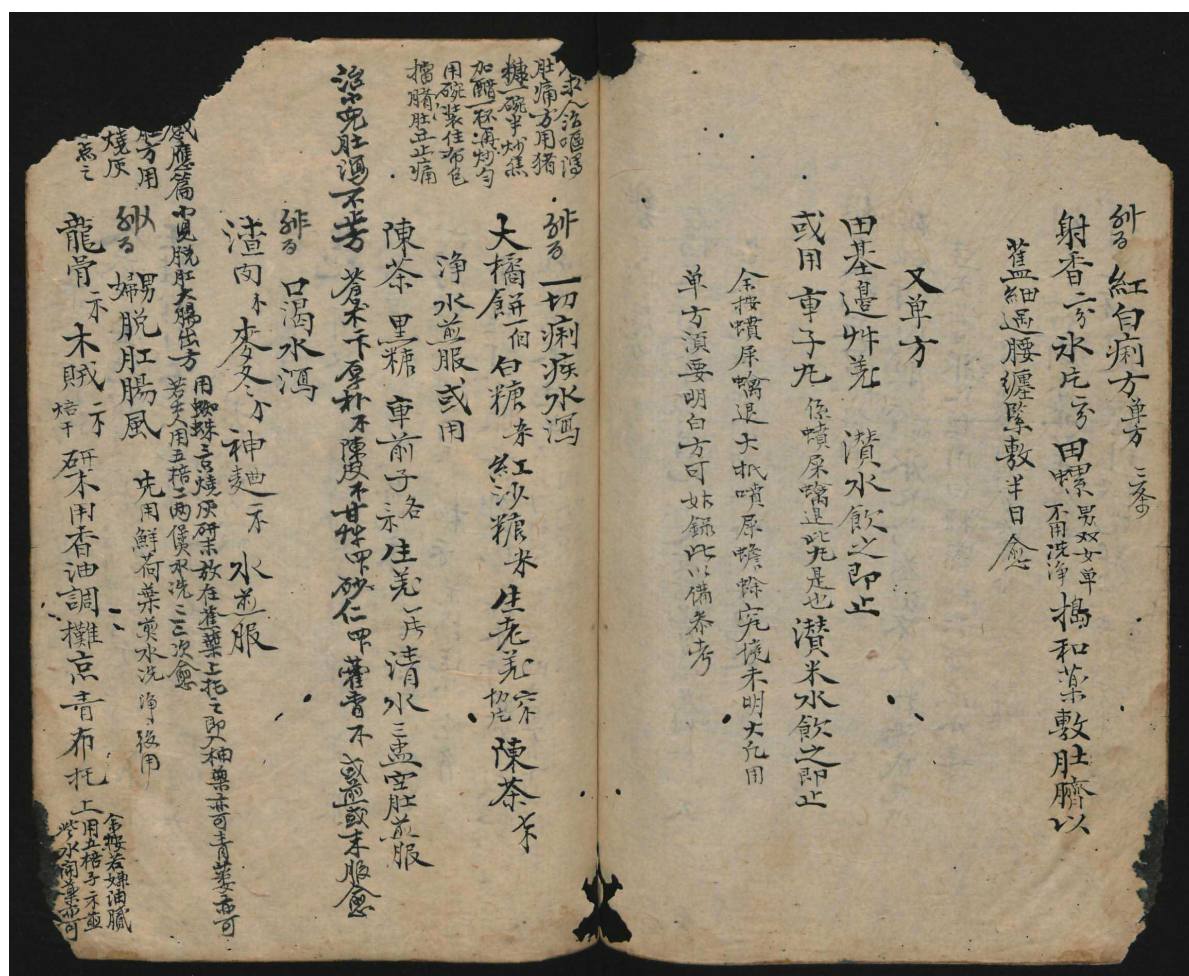
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Figure 20: Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Ostasienabteilung, Slg. Unschuld 8051, fols 221v–222r.

In some cases, it must be assumed that, although the formatting of a primary layer appears to be closed, its producer *expected* secondary layers to be added. This can be deduced for certain theatre prompt books from the setting in which they were used, as well as from the typical patterns of use visible in a large number of WAs of the same type. Prompt books contained a fair copy of a dramatic text that was supposed to be staged. They were modified and updated according to the changes that occurred in the process of a respective theatre production. Therefore, sooner or later, a prompt book put to use would become a multilayered WA, since the occurrence of such changes could be taken for granted. Yet, the absence of designated space left for them in the primary layer led to a disruptive formatting of the secondary layers. With a visual organisation that left free space for such potentially comprehensive amendments, the prompt books would probably be too voluminous to be handled effectively and, since they were mere objects of utility in the theatre context, too costly to produce. If, for example, the text of a character were altered, which happened commonly, this amendment would be recorded in the prompt book, constituting a secondary layer. The text that was being replaced was crossed out and the new text was written as close as

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possible to this section, wherever there was free space on the page, as can be seen in the sample taken from Friedrich Ludwig Schröder's adaptation of William Shakespeare's *Othello* from 1776 (Theater-Bibliothek: 571) (see Fig. 21).
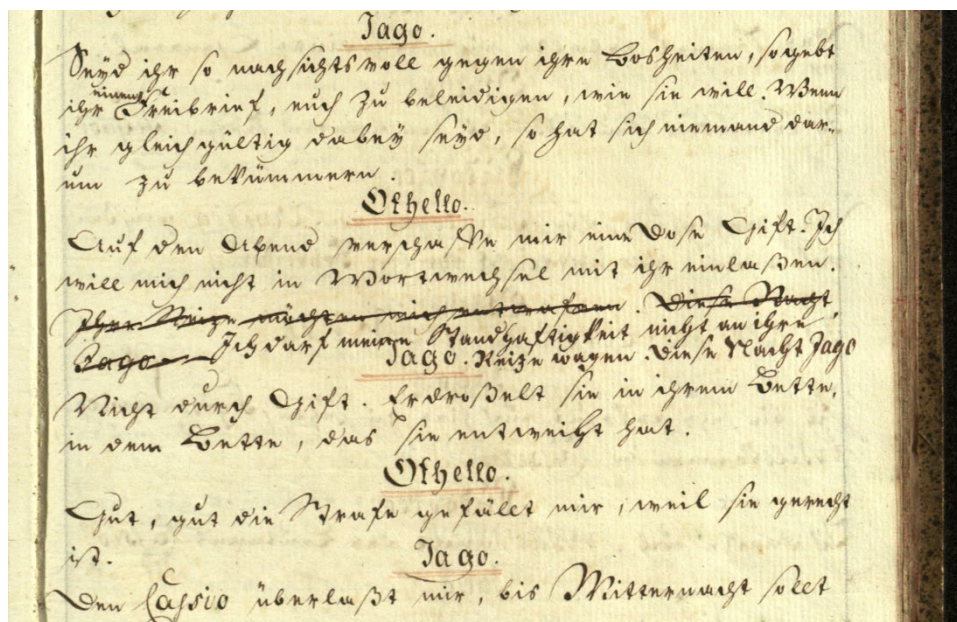

Figure 21: Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky, Theater-Bibliothek: 571, fol. 66r.

3.2 Open primary layers

In principle, all secondary layers are user-generated, as the users are executing the actual steps to create them, and they are not necessarily bound by (or even cognisant of) the intentions of the producer of the primary layer.[27] However, there are many cases in which the original producer(s) were not only fully aware that future secondary layers would be added, but created (parts of) the primary layer as (a) 'host(s)' that enabled, encouraged or even guided the creation of secondary layers. In doing so, producers could pre-determine not only *where* but also *how* and *what kind of* layers should be added. Primary layers that we call open *invited* the addition of secondary layers, meaning that the producer left space (a 'blanket/placeholder layer') in it, thereby proposing boundaries in which a future user was to create an additional layer. Apart from leaving free space in the primary layer, producers also employed other means such as paracontent to mark or point to the places where future layers were supposed to be added – similar to a form with labelled fields.[28] Therefore, it is possible to

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[27] For example, it might not be clear in every case whether the producer left a very wide margin in order to accommodate later notes, or whether the margin was rather supposed to remain blank in order to pay reverence to the content it framed.

[28] The administrative realm, which often requires officials on different levels to collaborate in the compilation of documents, seems to be one of the contexts in which WAs with such open primary layers are frequently found. See Armstrong et al. 2023, 300.

distinguish between primary layers that are marked as open by visual organisation only, and those that are marked by both visual organisation and (para)content. Open primary layers are not only formatted in a way that can accommodate an additional layer (or layers), the formatting of their contents also defines a particular formatting for added contents, at least implicitly. In this case, secondary layers often have a *conforming* formatting that, at least in some parameters of the visual organisation, is in accordance with that of the primary layer. It needs to be stressed that open primary layers can of course likewise acquire secondary layers with disruptive formatting if subsequent users do not stick to the bounds of the space intended for their use. Furthermore, the formatting of secondary layers may simultaneously be partly conforming and partly disruptive.

The most common cases are represented by WAs with wide margins, interlinear spaces or labelled fields, where the primary layer is intentionally left open due to the function of the WA, for later users to complete it (e.g. calendars, exercises, games).[29] Other typical scenarios include the following: the primary layer is intentionally left open due to a defective/lacunar model, enabling later users to remedy this; the primary layer is accidentally left open, for example because one of several individuals involved in its production for some reason did not add the items for which he/she was responsible (rubrications, decoration, exegetical notes, etc.) or due to layout conventions. A layer added to these kinds of open primary layers – although possibly by a person not involved in the production of the primary layer – would more likely merge into the formatting of the primary layer, (potentially) resulting in an integrated appearance in the visual organisation.

Primary layers that are intentionally left open due to the function of the WA are typically found in calendars meant to be filled out over the course of time. In early imperial China, officials kept track of their work-related travels and other events of significance in 'event calendars' (*zhiri*). Each calendar usually spanned a period of one year. It resembled a table, with the days recorded horizontally from right to left and the months recorded vertically from top to bottom. In this grid then, there was a small field for each day of the year, to which records could be added (see Fig. 22). Palaeographic analysis has shown that the grid of the calendars (i.e. the designations of the days and months) and the actual entries were usually written by different hands.[30] The most likely explanation for this is that one person produced the primary layer of the event

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[29] Prime examples of this are scholarly manuscripts with 'ample space layout' from West Africa, see Bondarev 2017.

[30] Chen Wei 2017, 224.

calendar with a blanket/placeholder layer to be filled in by another person (its actual user).

Figure 22: Changsha, PRC, Yuelu Academy collection, bamboo manuscript Nian qi nian zhiri 'Event Calendar of the Twenty-Seventh Year [of the First Emperor] (i.e. 220 BCE)', slips 1–32, with six entries visible in the fourth register of slips 6–14.

An example of a primary layer left open because the model from which its content was copied was incomplete can be seen in manuscript Athens, EBE, Metochion S. Sep. 243 (early eighteenth century). This codex is an important witness to the Byzantine anthology known as *Florilegium Coislinianum* (ninth or tenth century). That the model of the Athens manuscript was defective is proven by the numerous blank spaces the producer left in the primary layer, an example of which is found on page 16 (see Fig. 23).

There, the text stops in the middle of fragment 33 of Book Alpha of the *Florilegium* and, after a space covering almost one page, the text is resumed with fragment 36 of Book Alpha on page 17. The reason why the producer left the said page blank is self-evident: he was hoping that he himself or someone else would later complete the missing text.
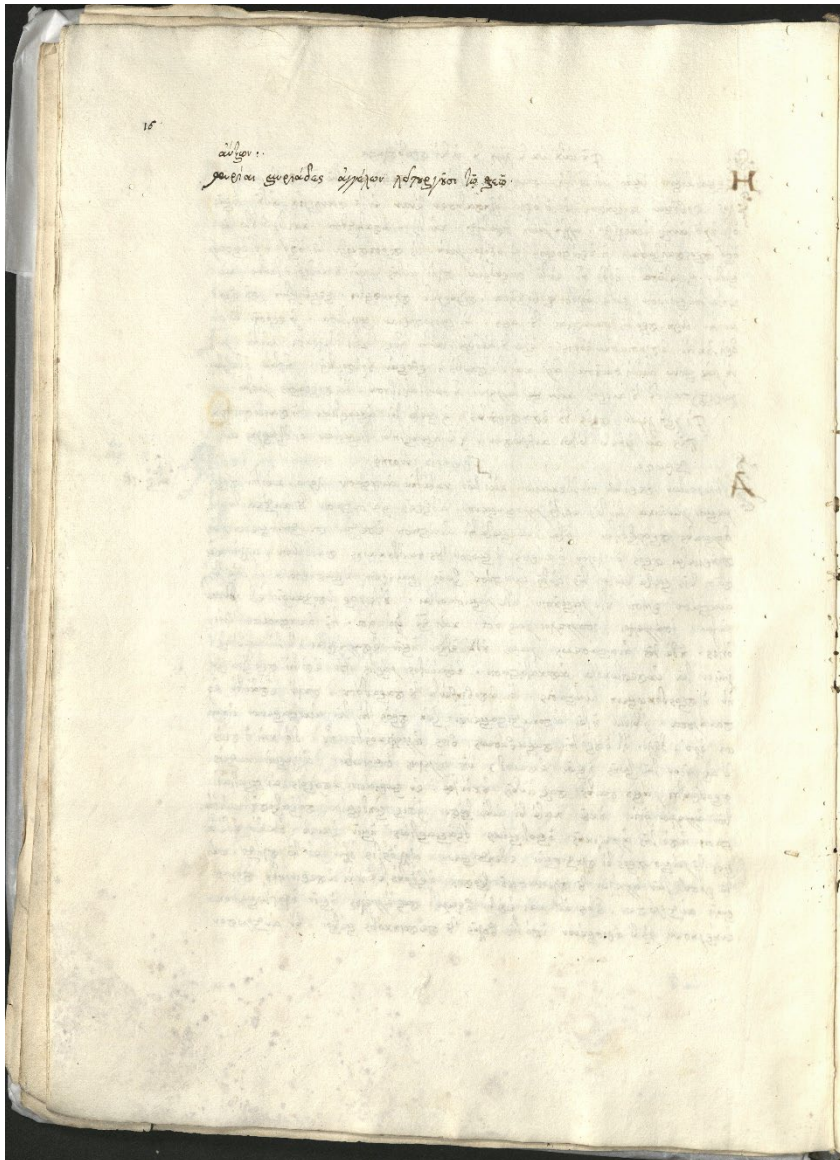

Figure 23: Athens, EBE, Metochion S. Sep. 243, page 16.

A case of a primary layer that was accidentally left open is the manuscript Paris, BnF, grec 924 (second half of the tenth century), another relevant witness to the *Florilegium Coislinianum*. For all its relevance to fathom the original form of that work and its early tradition, the Paris codex is an unfinished piece: several chapter titles were not written by the scribe, although he left a blank space of some lines, most likely with the aim that the titles be supplemented by a rubricator. However, the envisaged rubrication never happened, and it was only a later, sloppy hand that, proceeding on the basis of the table

of contents at the beginning of the Paris manuscript, added the missing titles in the blank spaces originally left for the rubrications (see Fig. 24).
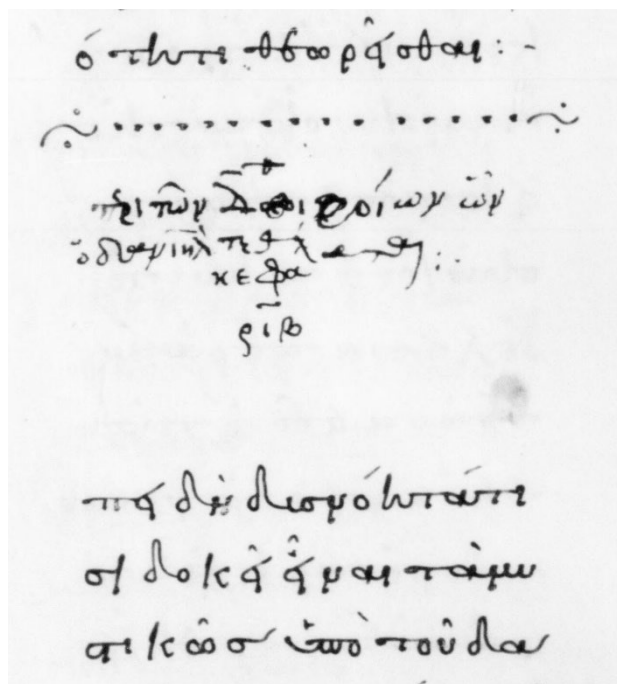

Figure 24: Paris, BnF, grec 924, fol. 161r.

Another example of an 'accidentally' open primary layer, in this case due to layout conventions, can be found in the Italian music manuscript Paris, BnF, it. 568. This collection of mainly secular polyphonic music was written in around 1400. Each musical setting was usually written on one page (e.g. the higher voice placed first, followed by the lower voice) or – in case the two voices did not fit on the same page – on one opening (e.g. the higher voice was written on the verso, and the lower voice on the recto of an opening). Since different voices of a musical setting take up different amounts of space, empty spaces often remain in the pre-ruled writing area (see Fig. 25). Subsequently, these spaces were commonly filled with further contents (secondary layers), usually French compositions (see Fig. 26).
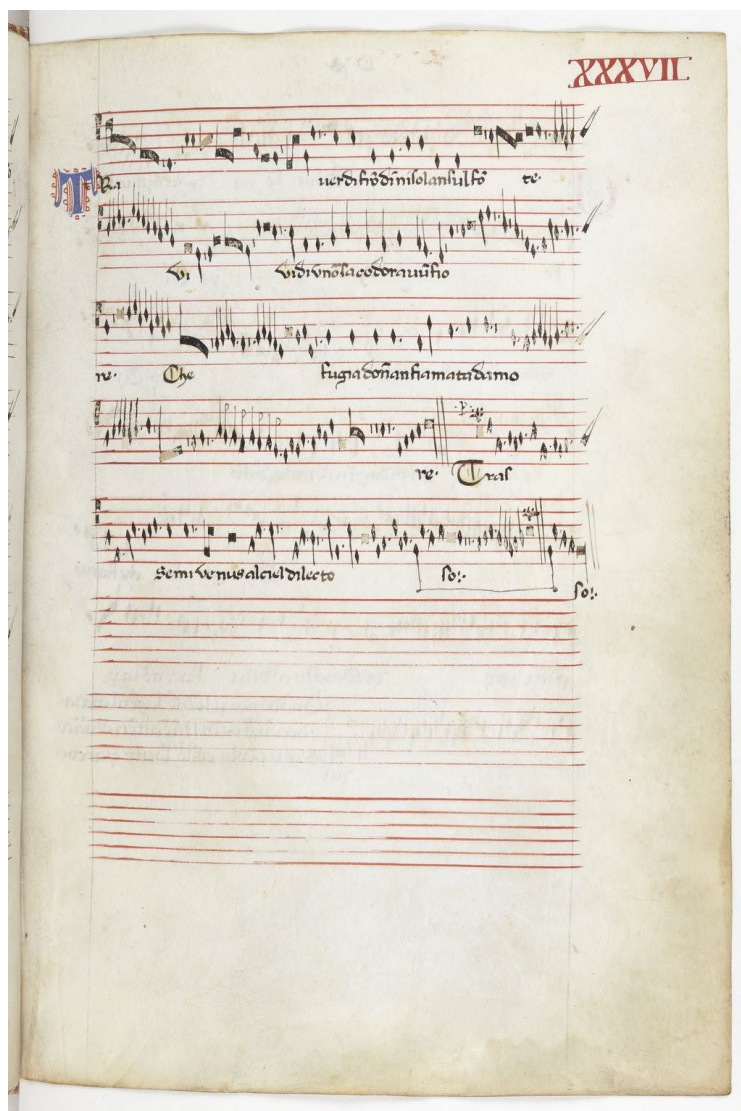
Figure 25: Paris, BnF, it. 568, fol. 37r.

Figure 26: Paris, BnF, it. 568, fol. 19r.

4. Concluding remarks

The aim of this paper was to provide a general analytical framework for the study of multilayered WAs that is not restricted with regard to book form, culture or period. Considering WAs as evolving entities, we have broadly defined a layer as the result of an act of production that creates or transforms a WA, referring to the former type of layer as primary and the latter as secondary. We have furthermore described the basic operations whereby secondary layers are produced (addition, subtraction, replacement) and have introduced a tentative distinction between open and closed layers. Focussing especially on the question of whether secondary layers were already planned or anticipated when the primary layer was created, we have illustrated

potential implications for the formatting of a WA. In contrast to previous, more neutral approaches to the phenomenon, which we have labelled multilayeredness, this paper brings into the discussion the dynamics, intentions, and human and cultural factors that prompt changes and evolutions of WAs, and determine the ways of their transmission.

We are aware that the described approach to multilayered WAs, in which primary and secondary layers are distinguished, may not be equally well suited to all kinds of WAs. For example, in the case of WAs such as diaries, albums or notebooks, which constitute ongoing or open projects,[31] it might be difficult or even impossible to clearly delineate a primary layer.[32] Therefore, the present framework is to be understood as one building block towards a more comprehensive and comparative study of multilayered WAs across historical periods and cultures.

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[31] In a recently proposed typology of multiple-text manuscripts, such WAs are labelled 'open MTMs'. See Brita and Karolewski 2021, 475–477.

[32] To explore possibilities of analyzing and describing the layers of these types of WAs, two of the authors of this paper co-organised the workshop 'Accumulating Notes: Notebooks, Diaries and Related Examples of Everyday Writing as Multilayered Written Artefacts', which took place at the CSMC on 1–2 December 2023.

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