OPUSCULA

Vol. XVII

Redaktører
ANNETTE LASSEN
ASTRID MARNER

COPENHAGEN 2019

MUSEUM TUSCULANUM PRESS

Udgivet med støtte fra den danske stat

Denne publikation har været underkastet anonym international fagfællebedømmelse.

Registre s. 237–52:
Florian Grammel

Sats: Florian Grammel

Skrift: Andreas Stötzners "Andron Mega Corpus"

Omslagsdesign: Helga Gerður Magnúsdóttir
AM 47 fol., f. 2v. Se også småstykket "The hand of NKS 133 f 4to, f. 25v" på side 230–36.
Foto: Suzanne Reitz, Den Arnamagnæanske Samling, København

Trykt i Danmark af
Tarm Bogtryk A/S

ISBN 978 87 635 4669 0
ISSN 0067 7841

Museum Tusculanum Press
Dantes Plads 1
1556 Copenhagen, Denmark
www.mtp.dk

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Writing, Correcting and Annotating AM 601 b 4to. Material and Multispectral Analysis

Katarzyna Anna Kapitan & Beeke Stegmann

The manuscript AM 601 b 4to, held at Stofnun Árna Magnússonar in Reykjavík, is a paper manuscript from the seventeenth century that preserves two *rímur*-derived narratives: *Hrómundar saga Greipssonar* and *Bragða-Ölvis saga*. The manuscript has been examined from the textual point of view in a number of previous studies (Kölbing 1876; Andrews 1911; Hooper 1934; Kapitan 2017, 2018), but its origin, early history and material features have hitherto received little attention. This does not mean, however, that the origins and history of AM 601 b 4to are straightforward or unremarkable. Both texts preserved in this manuscript carry rich annotations and comments by multiple hands, which shed light on the early history of this manuscript.

This article presents the results of new material analyses of AM 601 b 4to conducted in Copenhagen in 2018, when the manuscript was on loan at Den Arnamagnæanske Samling. Besides traditional means of scrutiny, including codicological and paleographical analyses, this study also draws on multispectral

The present article is based on the multispectral imaging of AM 601 b 4to conducted on 15 February 2018 by Beeke Stegmann (BS) and Katarzyna Anna Kapitan (KAK) and on 16 and 20 February 2018 by KAK. Sections 1–3 dealing with the material aspects of AM 601 b 4to were primarily written by KAK, while sections 4–5 dealing with multispectral scanning and the discussion were written collaboratively by KAK and BS. We would like to thank the Árni Magnússon Institute for Icelandic Studies in Reykjavík for allowing the loan of AM 601 b 4to to Copenhagen for the purpose of this research. We would also like to thank Natasha Fazlic, chief conservator at Den Arnamagnæanske Samling, for her help with the codicological examination of the manuscript.

imaging, which provides additional insight into the chronology of changes introduced into the texts.

The article is divided into five parts. The first part investigates the physical features of the manuscript with special focus on the writing support in order to revise the dating of the manuscript presented in existing catalogues and to discuss the conditions under which the manuscript was written. The second and third parts focus on the textual analysis of the manuscript including its main texts as well as paratexts. The fourth part analyzes, with the use of multispectral technology, the corrections made to the first text preserved in AM 601 b 4to, *Hrómundar saga Greipssonar*. The final part discusses the main findings and proposes possible interpretations of the data.

The complex changes that have been made to the wording of *Hrómundar saga Greipssonar* and the paratexts that accompany it indicate an increased interest for toponyms, especially names of countries and places. These changes may be related to the cultural-political situation in Scandinavia in the late seventeenth century and hint at the possible audiences for this manuscript. The present article explores the chronology of the changes to identify the origins of and potential motivations for the multiple annotations.

1. Physical description of AM 601 b 4to

AM 601 b 4to is a paper manuscript in quarto, broadly dated by Kålund (1889–1894: I, 769) to the seventeenth century. It is written in one hand throughout, and the hand has recently been identified by Jucknies (2009: 93–96) as that of Jón Eggertsson (ca. 1643–1689). Jón Eggertsson was a scribe and poet, and he is mainly known for his collaboration with the Swedish Antikvitetskollegium (Jucknies 2009: 93–96; Páll Eggert Ólason 1948–1952: III, 85–86). Many manuscripts in Scandinavian repositories, especially in Kungliga biblioteket in Stockholm, are associated with Jón Eggertsson, since he had collected and copied numerous manuscripts for the Antikvitetskollegium, mainly in the 1680s (Klemming 1868; Gödel 1897a, 1897b; Bjarni Einarsson, ed. 1955: xiv–xxxi, 1984; Már Jónsson 2012: 44). Based on his lifespan, the date of writing of AM 601 b 4to can be narrowed down from the broad seventeenth century to ca. 1660–1689.

The manuscript consists of 10 leaves of watermarked paper gathered in two quires. Quire I consists of two conjoint leaves: ff. 1 + 4, 2 + 3. Quire II consists of two conjoint leaves followed by two singletons: ff. 5 + 8, 6 + 7, 9, 10. The manuscript is made of recycled paper, which probably originated from some book of records or accounts, as the sheets are ruled for folio format and older foliation appears in the corners of the bifolia at a 90° angle, e.g. the bifolium 6 + 7 has the number 176 (Figure 1), and the bifolium 5 + 8 has the number 177. On f. 2r remnants of a trimmed number 20[0] are visible, and the lower right corner of f. 1r is damaged, so any possible former folio number on it is now illegible.

The watermark attested in this manuscript also suggests that the manufacture of the paper considerably predates the writing of this manuscript. On ff. 1 + 4, 6 + 7 and 10 there is a watermark with the letter *B* on a crowned shield with a sash below, on which the text "NICOLAS LEBE" is written (Figure 2). A very similar watermark can be found in a manuscript in Dublin, Royal Irish Academy, MS 23 N 29 on f. 57,[1] and in major catalogues of watermarks, such as pl. 2877 and 2878 in Heawood's (1950) catalogue and pl. 8079 in Briquet's (1907) catalogue. Similar watermarks are registered in paper from France and the Netherlands from the late sixteenth and the early seventeenth century. Therefore the watermark further supports that the paper was recycled when the manuscript was written in the late seventeenth century. The leaves that now comprise AM 601 b 4to thus first served as a book of records or the like and were later reused to transcribe the sagas, as they had remained blank in their first life. When taking into account that the paper of this manuscript was recycled, it is possible to imagine that Jón Eggertsson wrote the manuscript while imprisoned during the period 1684–1687, where he possibly had limited access to resources.

The early provenance of AM 601 b 4to is still unknown, but at the time when Jón Ólafsson prepared his catalogue of Árni Magnússon's collection (the best known copy of which is today preserved in Copenhagen, Den Arnamag-

[1] The digital image of the watermark can be found on the webpage of the project "The Watermarks in Irish Documents" available on <watermarks.ucc.ie/2017/03/30/quatrefoil-shield-letter-b-scroll-containing-name-nicolas-lebe-papermaker-troyes-france> (last accessed 16.10.2018).

FIGURE 1: Reykjavík, Stofnun Árna Magnússonar, AM 601 b 4to, f. 6v. An example of foliation and ruling of the leaves for their original folio format.
Photo: KAK.

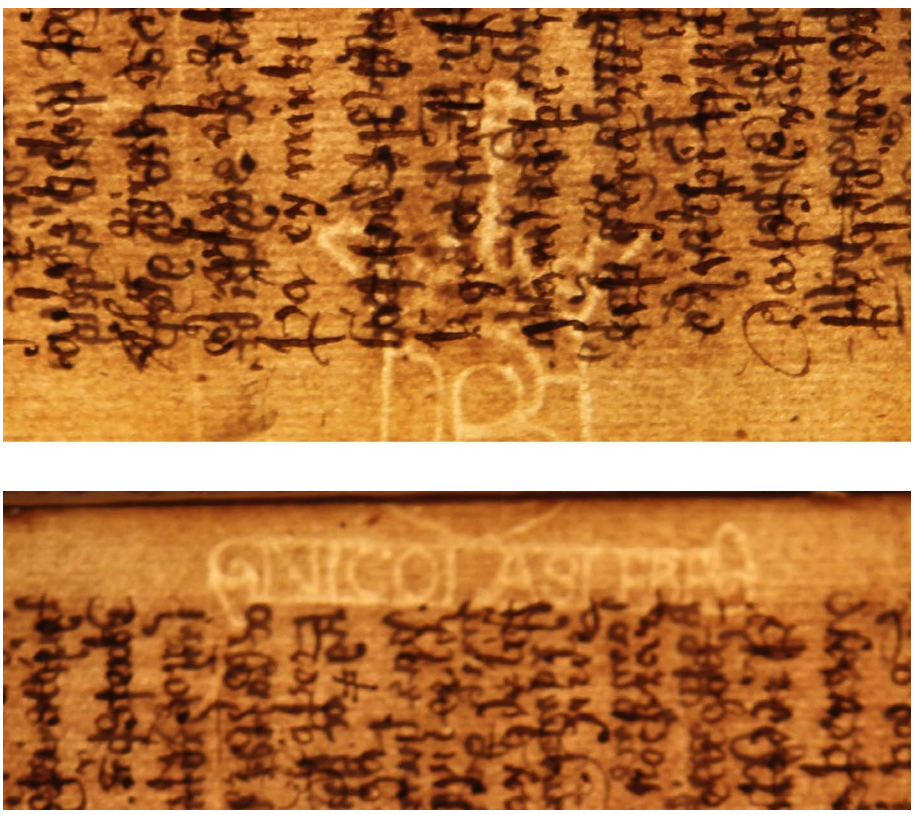

Figure 2: Watermark "NICOLAS LEBE" in AM 601 b 4to, ff. 6 + 7.
Photo: KAK.

næanske Samling, AM 477 fol), it was registered as a part of MS 601 in 4to. That larger manuscript contained "Efne (edur Jnehalld[)] ur nockrum Rïmum" (f. 41v), including summaries of the following: *Ásmundar rímur og Tryggva* (today either lost or a part of another manuscript, perhaps AM 576 b 4to, but this requires further investigation); *Ormars rímur Framarssonar*, *Gríms rímur og Hjálmars*, *Úlfhams rímur*, *Sigurðar rímur Fornasonar* (all in AM 601 a 4to); *Hrómundar rímur Greipssonar* and *Bragða-Ölvis rímur* (together in AM 601 b 4to); *Þóris háleggs rímur* (AM 601 c 4to); *Skjaldar þáttur Danakonungs* (AM 601 d 4to). MS 601 in 4to was a composite manuscript, probably a result of Árni's effort to aggregate texts dealing with the contents of *rímur*.[2] As Aðalheiður Guðmundsdóttir (2001: l) observed, Árni was interested in receiving summaries of the contents of certain *rímur* and he asked for them in his letters to his Icelandic acquaintances. An example of such a request can be found in Árni's letter to Magnús Jónsson í Vigur from 1691, in which he asks for summaries of, among others, *Þóris háleggs rímur* (Kålund, ed. 1920: 241–42).

2. Texts and Paratexts

AM 601 b 4to preserves two *rímur*-based sagas: *Hrómundar saga Greipssonar* on ff. 1r–6r and *Bragða-Ölvis saga* on ff. 6v–10v. Both texts are accompanied by notes by Árni Magnússon, specifying that these texts are based on *rímur*. For both sagas AM 601 b 4to is traditionally considered the best-text manuscript (Andrews 1911; Hooper 1930, 1932a, 1932b). In the case of *Hrómundar saga Greipssonar*, all extant witnesses of the saga are directly or indirectly derived from AM 601 b 4to (Andrews 1911; Kapitan 2018).

There are a number of marginal notes accompanying the text of *Hrómundar saga Greipssonar* in AM 601 b 4to, some of which date to approximately the time of writing of the manuscript. The majority of the marginal notes are navigational aids that make it easier to find passages of interest. They usually refer to the underlined place names and personal names appearing in the main text of the saga. The marginal notes can be divided into three main groups: 1) content-related additions and corrections in the main scribe's hand; 2) scholarly notes by

[2] See Stegmann (2016) for more details on Árni Magnússon's rearrangement activities.

Árni Magnússon that are origin and content-oriented; and 3) other marginalia related to later cataloguing of the manuscript. Moreover, while there are some additions by the main scribe that use the same ink as the main text, there are others in the same hand that most likely postdate the first round of corrections as the ink is of a lighter hue.

An example of a scholarly marginal note written by Árni Magnússon can be found on f. 6r; it reads "mendacium est. þetta er teked ur Rimunum" ('it is a lie. This is taken from the *rímur*'). This note refers to the information provided by the postscript of the saga regarding its exemplar, discussed in further detail below. This marginal note, alongside another note in the upper margin of f. 1r reading "ur Rïmunum" ('from the *rímur*'), suggests that Árni knew or was convinced that the text of *Hrómundar saga Greipssonar* in AM 601 b 4to is a reworking of the *rímur* telling the story of Hrómundur, known as *Hrómundar rímur Gripssonar* or *Griplur* (Finnur Jónsson, ed. 1905: 351–410). Further evidence for this can be found in Jón Helgason's (1980: 41) edition of Árni's notes on the Icelandic sagas, in which Árni wrote the following about *Hrómundar saga Greipssonar*:

> Saga af Hrómundi Greipssÿni er einskis verd. Þormódur Torfason in Epistola qvadam mihi scripta, ad skilia sú sem eg hafdi sent honum. Et verum est, impostura enim est, Jons Eggertssonar.
>
> *Hrómundar saga Greipssonar* is of no value. Þormóður Torfason in a letter written to me, meaning this [saga] that I had sent to him. And it is true. It is with certainty an imposture of Jón Eggertsson.

It is uncertain to which manuscript of *Hrómundar saga Greipssonar* Árni is referring. It might have been one of known seventeenth-century witnesses of the saga, such as Reykjavík, Stofnun Árna Magnússonar AM 193 e fol, AM 587 b 4to, AM 601 b 4to, or some other now-lost manuscript. Árni Magnússon's opinion about *Hrómundar saga Greipssonar* is, however, clear: he considered it worthless and was convinced that Jón Eggertsson was responsible for the writing of this saga. This comment thus goes beyond the marginal notes of AM 601 b 4to and suggests that Jón Eggertsson was the author of the adaptation. Árni could have had first-hand information about the matter, as the first Icelandic manuscripts in the collection of Thomas Bartholin the younger

(1659–1690), to which Árni had access, were provided by Jón Eggertsson (Már Jónsson 2012: 52). Finally, the textual analysis of the relationship between the saga and the *rímur* by Brown (1946) further supports this hypothesis.

3. Postscript of *Hrómundar saga Greipssonar*

The text of *Hrómundar saga Greipssonar* in AM 601 b 4to is followed by a commentary (or postscript) written in the main scribe's hand. A similar note is preserved in three other manuscripts of the saga: AM 193 e fol, AM 587 b 4to, and Copenhagen, Det Kongelige Bibliotek, Thott 1768 4to. The note in AM 601 b 4to, f. 6r reads (Figure 3):

> Suu Saga Sem þetta war Effter Skriffad ward Näumlega Lesen*n*. Og ei Sem SkilianLegust wm*m* Landa edur Stada Heite Swm, þö er þad wyst ad Räda Hier aff Kong Olaffur Mune wered Haffa Kongur ad Naffn Böt i ⟊danmerkur⟊ wellde Einhv*or*stad*ar* þar Sem Nær grendsad Heffur wid Suÿþiöd. þuj þä Heffur ⟊Danmerkur⟊ Ryke Hafft marga Smä k*on*ga, Sem bewysast kan*n* aff fornum frædu*m*. So skriff*ar* S*ira* magn*us* i laufase Olaffss*on*, etc.
>
> The saga from which this was transcribed was barely readable and not at all clear concerning some of the names of countries or places, but it can clearly be understood that King Ólafur had the title of king somewhere in the ⟊Danish⟊ realm near to the border with Sweden, because at that time the kingdom of ⟊Denmark⟊ had many petty kings, as is demonstrated in ancient lore. Thus writes sr. Magnús Ólafsson from Laufás.

The first sentence of the note suggests that the saga in AM 601 b 4to was copied from an exemplar that was unclear or difficult to read. Then comes a part with a discussion of King Ólafur and the areas he was ruling over, followed by a reference to the authority of Magnús Ólafsson from Laufás. There has been an ongoing discussion about whether the first sentence of the note refers to a lost exemplar of the prose or whether it can refer to *rímur*. Scholars have equally discussed the last sentence of the note and what role Magnús Ólafsson from Laufás played in the creation of the saga (Andrews 1911: 533; Faulkes 1993: 133).

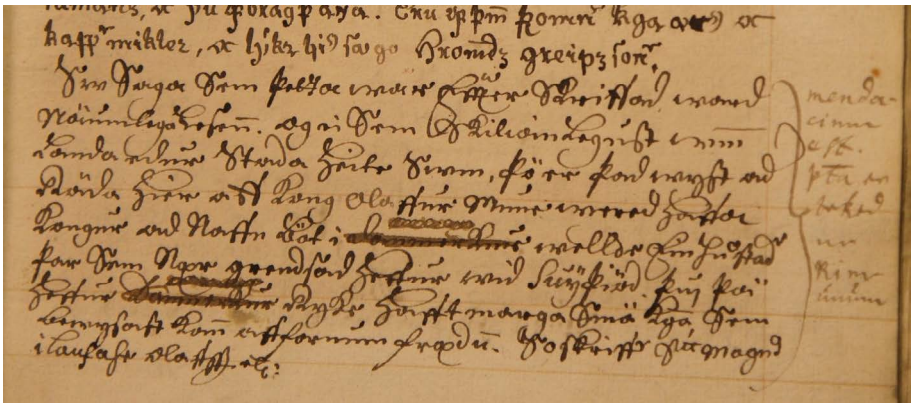

Figure 3: The commentary following *Hrómundar saga Greipssonar* in AM 601 b 4to, f. 6r.
Photo: KAK.

The note was already a subject of scholarly interest for Árni Magnússon, who, as previously mentioned, wrote in the right margin "mendacium est. þetta er teked ur Rimunum" ('it is a lie. This is taken from the *rímur*'). Árni's comment expresses doubt regarding the information provided by the note and most likely refers to its first sentence, from which it can be understood that the text in AM 601 b 4to was copied from another exemplar of the saga. In his comment Árni emphasizes again that this text is based on the *rímur*, not on the saga. This is interesting in the context of the previously cited opinion of Árni, that the saga is a fabrication by Jón Eggertsson. Since it is likely that Árni knew that Jón Eggertsson was the scribe of the manuscript, he seems to have had doubts that it was copied from some other illegible manuscript of the saga, but rather considered it to be an authorial copy of this prose adaptation of the *rímur*.

An interesting hypothesis was proposed by Jesch (1984: 90), who suggested that the word "saga" could be loosely used in the seventeenth century for the *rímur*, and therefore the note might refer to the illegible text of the *rímur* on which the saga is based, rather than to an illegible exemplar of the saga. Jesch, however, uses the case of *Skáld-Helga saga* and refers to Jón Helgason's (1960: 36) and Ólafur Halldórsson's (1978: 171, 259) accounts on that matter, although

none of them provide convincing arguments that any of the known references to *Skáld-Helga saga* actually refer to the *rímur* instead of the saga. While this clearly needs further exploration, if it was actually the case that "saga" could be used for *rímur*, it is easy to imagine that one of the *rímur*-manuscripts was badly damaged and partially illegible, as are some of the extant manuscripts preserving *Griplur* (Kapitan 2018: 157–90). Jón Eggertsson had the means to convert the *rímur* into prose, as he himself was not only well-versed in poetry, but also had access to a manuscript preserving *Hrómundar rímur Gripssonar*. On the list of manuscripts he collected in Iceland, there is an old manuscript that contained both *Griplur* and *Bragða-Ölvis rímur* (Klemming 1868: 38). This manuscript, however, appears to be lost.

Regarding the reference to the authority of Magnús Ólafsson, Andrews (1911: 533) proposed the most plausible interpretation. He observed, apparently relying on Kristian Kålund's suggestion, that Magnús Ólafsson's account may be the basis solely for the information about many kings of Denmark, not that the saga was written by Magnús Ólafsson. This seems a reasonable interpretation, especially if we consider the "etc." at the end of the note to be a reference to other authorities on Scandinavian antiquities of that time. It could thus be understood as: "so writes Magnús and others that there were many regional kings in Denmark at that time". This is an especially convincing interpretation considering that the note was written by Jón Eggertsson, who had access to many works of Icelandic historiography and literature. Among the multiple books that Jón Eggertsson sold to the Swedes was a volume in quarto format containing texts dealing with Danish kings written by a certain Magnús Ólafsson, not unlikely the same Magnús that Jón Eggertsson is referring to in the note in AM 601 b 4to (Gödel 1897a: 196; Klemming 1868: 38). This manuscript is today held in Uppsala, Universitetsbibliotek, R 702. It came to the library in 1717 as a part of *Salanska samlingen*, in which it was number 81 in quarto (Gödel, 1892: 49–52).[3]

[3] It is not entirely certain whether Magnús Ólafsson from Laufás was the scribe of R 702, but his name is attested on f. 19v (not 18v as Gödel observed) and Jón Eggertsson bought the manuscripts in Laufás in 1681, as the note on f. 1r indicates.

4. Multispectral imaging of AM 601 b 4to

Multispectral imaging (MSI) reveals further insight into the origin and early history of the manuscript. It not only enables us to read crossed-out and otherwise illegible words but also supports the analysis of ink in order to trace occurrences of chemically similar writing fluid. MSI has been successfully applied in manuscript studies for recovering erased text such as the undertext of a palimpsest (Netz et al., eds. 2011) and to make legible writing that has been scribbled over in a post-medieval paper manuscript (Springborg 2014: 94–96). Recently, MSI has also been employed to compare inks used in medieval parchment manuscripts (Stegmann 2018: 38–44).

When AM 601 b 4to was on loan in Copenhagen, it was imaged using the VideometerLab 2 multispectral scanner available at the Arnamagnæan Institute. The compact device takes images 2056 x 2056 px in size and a resolution of 45 µm/px. The scanner is equipped with 19 high-power LED light sources ranging from 375 to 970 nm (Videometer A/S n.d.). Separate images are taken for each wavelength measuring the reflectance of light. The measurements are combined into multi-layered images that form the basis for further analyses including visual inspection of individual layers, arithmetical transformation of entire images as well as spectral analysis of selected pixels.[4] The present study mainly draws on one of the built-in transformation functions of the device's software using Canonical Discriminant Analysis (CDA). It is a supervised transformation operation based on manually chosen regions of interest resulting in a new, in this case false color, image that visually highlights spectrally similar pixels.

As previously mentioned, one of the interesting features of AM 601 b 4to is the high number of additions in the margins and at times in between the lines. This feature was already noticed by Kålund (1889–1894: I, 769), who stated that the manuscript contains "[a]dskillige marginalia, tildels med Arne Magnussons hånd" ('various marginalia, partly in Árni Magnússon's hand'). Paleographic evidence of the marginal notes confirms that more than one person was responsible for these additions. On the one hand, Árni Magnússon wrote some of the marginal notes, such as on ff. 1r and 6r, as well as numerous addi-

[4] For further details on spectral analysis for ink comparison, see Stegmann (2018: 39–42).

FIGURE 4: Top right corner of AM 601 b 4to, f. 1r, under regular white light (right), and after CDA transformation (left).
Photo: KAK. MSI image and transformation: KAK and BS.

tions in the margins of *Bragða-Ölvis saga*. The main scribe, Jón Eggertsson, on the other hand, was responsible for the marginal notes that refer to underlined words in both texts preserved in this manuscript, and they make it easier to find relevant passages referring to a given place or person. The paleographic evidence, in combination with multispectral imaging can be used to identify who added other ink strokes in the manuscript that are not writing and thus cannot be directly analyzed by paleography.

CDA transformation indicates that the ink used in the marginal notes referring to underlined text has the same reflectance spectrum as the ink used for underlining. Figure 4 shows an example from f. 1r, where the ink of the original marginal addition written by Jón Eggertsson is recognized as having a comparable spectral signature as the underlining in the main text (both of which are highlighted in dark blue in the transformed image). We therefore propose that these were added at the same time and by the same person. Similarly on f. 3r, there is a clear example of a deletion made with the same ink as an addition in the margin and underlining of the name of the sword *Mistilteinn*. All three appear in the same scale of red-orange, while the main text is rendered in greenish-blue (Figure 5). The correction changes the reading *og ríður til Danmerkur* into *og ríður til síns ríkis*. Based on the comparison of the script it is most likely Jón Eggertsson himself who was responsible for this adjustment. Since none of the other extant manuscripts of the saga contain the reading "til Danmerkur," this correction must have been made before the text of *Hrómundar saga Greipssonar* was copied into other extant manuscripts of the saga (Kapitan 2018: 51).

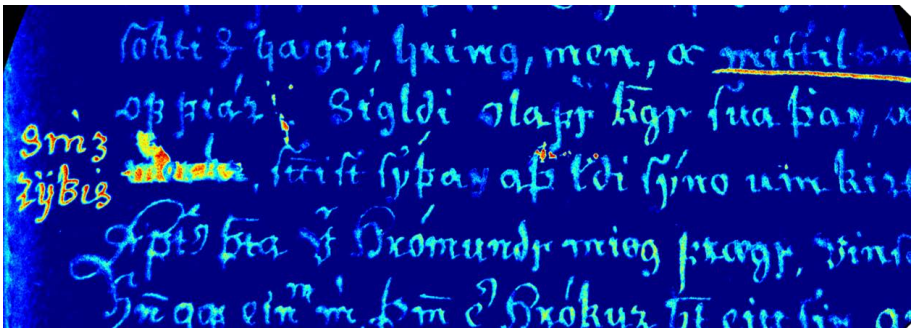

FIGURE 5: AM 601 b 4to, f. 3r, after CDA tansformation. The ink used for the deletion of the word *Denmark* in the main text, the marginal addition and the underlining of the word *Mistilteinn* appear in the same fake colour (orange-red).
MSI image and transformation: KAK and BS.

The manuscript contains some more deletions which were executed in such a thorough manner that it is impossible to decipher the original reading without technical aid. An example can be seen in Figure 4. The reading of the second line of the marginal addition is fairly illegible to the naked eye, but it can be recovered with the assistance of MSI. The deleted text reads "J [G]ørd[um]," but the word-initial *G* resembles, to some extent, the scribe's capital *H*. Therefore it could also be "Hørdum." The reading "Hörðum" appears in stanza 1:9 of *Griplur* and is the most common reading in the manuscripts preserving the *rímur* (Finnur Jónsson, ed. 1905–1922: I, 353), so it is possible that this reading could have been the original reading of the saga. The marginal note, however, refers to the underlined part of the main text and such notes in the manuscript tend to repeat the place names in the same form they appear in the main text. Unfortunately, this place name has also been deleted in the main text and it is almost illegible to the naked eye. The application of MSI and CDA transformation reveals the original reading in the text's first line as *Görðum* followed by a supralinear addition *í Danmörk*. Figure 6 presents the beginning of the saga on f. 1r photographed in natural light (top) and after two separate CDA transformations (bottom right and left).

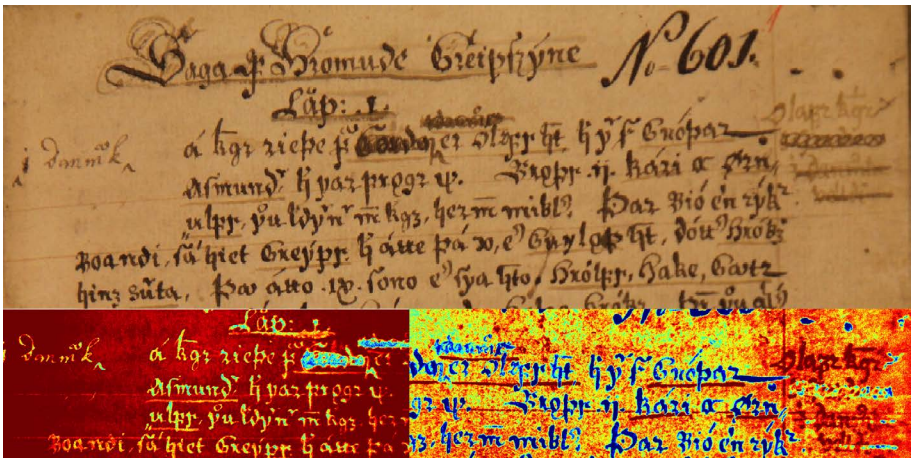

FIGURE 6: AM 601 b 4to, f. 1r, in natural light (top) and after two different CDA transformations (bottom right and left).
Photo: KAK. MSI image and transformation: KAK and BS.

The multispectral images indicate that the entire phrase *Görðum í Danmörk* was originally written in the ink of the main text but later deleted with different ink. The transformed images further reveal that the deletion in the main text was neither made in the same ink as the addition *í Danmörk* in the left margin nor in the ink used for the comment in the right margin and the underlining. Since the spectral signature of this ink was not identified with certainty elsewhere, it could not be established who was responsible for this deletion or the deletion in the marginal addition.

The remaining deletions and corrections in the text of *Hrómundar saga Greipssonar* in AM 601 b 4to also concern the geography of the saga. There are two corrections in the postscript on f. 6r, both of which deal with the country in question (Figure 3). In the fifth and seventh line of the note, the word "Danmerkur" has been crossed out. The deletion was done with light brown ink, which is why the underlying text is still readable with the naked eye. Supralinear additions occur in both places that were probably written at the same time as the deletions they substitute, but they also have been crossed

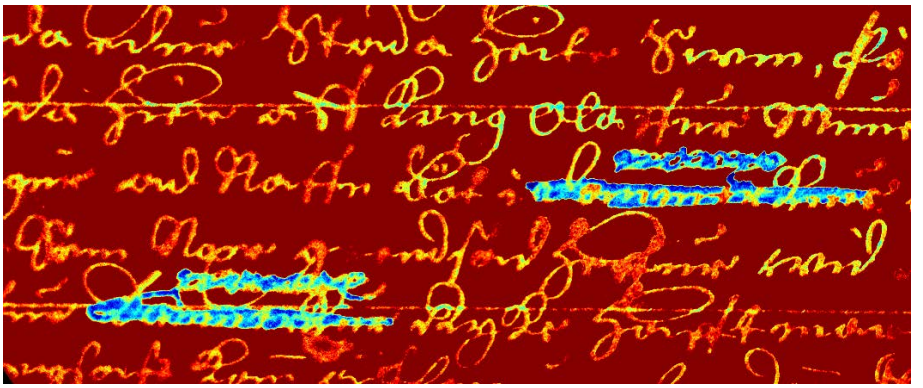

FIGURE 7: AM 601 b 4to, f. 6r, after CDA transformation comparing the inks used for the deletion and supralinear addition in the commentary.
MSI image and transformation: KAK and BS.

out and are therefore illegible today. MSI allows us to recover the text of the additions and to investigate the order of events more closely.

The supralinear additions of f. 6r are in spectrally similar ink to the deletion in the main text as they appear in the same shade of blue after CDA transformation (Figure 7), while the original text is rendered in the scale of red-yellow. It is further possible to read the text of the addition as "norge" in both cases, meaning that during an initial alteration, the name 'Denmark' was deleted and corrected to 'Norway'. Unfortunately, we have not been able to identify the hand of these additions by means of paleographical analysis due to the brevity of the words and limited legibility. Spectral analysis of the ink used also proved inconclusive, as no other writing on this leaf is in the same ink.[5] It can, however, be excluded that Árni Magnússon made the first correction as he commented on the postscript in the right margin. Even through at first glance in natural light the color of the ink used for the deletion resembles the ink Árni employed to write his

[5] Spectral signatures of ink can, with some restrictions, be compared across images and thus across pages in a manuscript using the VideometerLab 2. Different levels of dirt and other noise in the samples, however, can complicate such operations, and in the current case no definitive results were obtained.

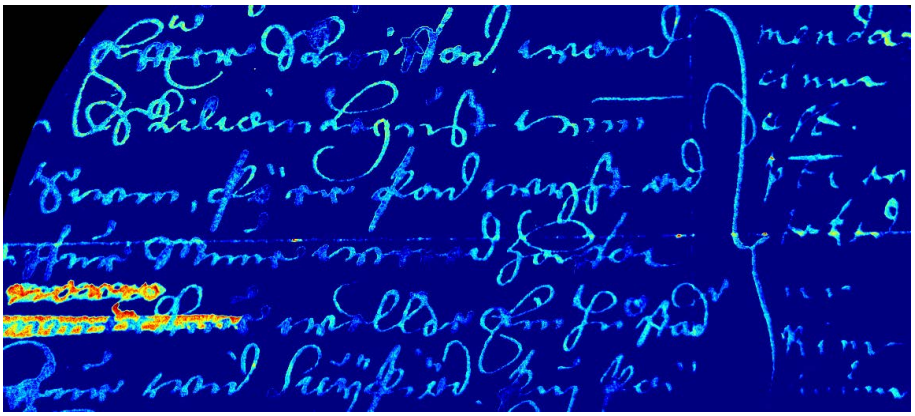

Figure 8: AM 601 b 4to, f. 6r, after CDA transformation comparing the ink of Árni Magnússon's marginal note with the ink of the deletion in the commentary.
MSI image and transformation: KAK and BS.

note, the spectral analysis reveals that the ink is different (compare Figure 3 and Figure 8). Finally, the supralinear additions of Norway were cancelled out again in both cases with a thick doodle. The methods used in this study did not enable a definite identification of the actor behind this second correction either. The ink of the later change, however, can be said to be chemically different from the ink of the first correction, because otherwise it would not have been possible to recover the heavily crossed-out addition using MSI.

5. Discussion and conclusions

This article presented the results of the material and multispectral analyses of AM 601 b 4to. It discussed the evidence for the paper used as writing support in this manuscript having been recycled from an older book of records. This might suggest that the manuscript was written when the scribe, Jón Eggertsson, had limited access to resources, possibly while he was imprisoned in Copenhagen during the years 1684–1687. The MSI analysis of the inks present in the manuscript allowed us to trace the history of textual intervention in the readings

of AM 601 b 4to. There are three instances of textual intervention related to the text of *Hrómundar saga Greipssonar* in AM 601 b 4to, on ff. 1r, 3r and 6r. All of them are connected to place names, more specifically to Denmark. Thanks to paleographic analysis of the script and MSI we were able to attribute some of them with certainty to known actors, but others remain problematic.

A straightforward case is found on f. 3r where the same ink was used to underline the name of the sword *Mistilteinn*, to cross over the name 'Denmark' and to add the correction "sinz rijkis" in the inner margin. Based on the script type of the marginal addition, it can be established with certainty that Jón Eggertsson was responsible for this intervention. Taking into consideration the transmission history of *Hrómundar saga Greipssonar*, it can be assumed that this change was done relatively soon after the main text was copied, as none of the extant witnesses of the saga derived from AM 601 b 4to preserve the original reading 'Denmark'.

The agents of the other two interventions are more difficult to identify. On f. 6r we are dealing with the commentary that follows *Hrómundar saga Greipssonar*, where the name 'Denmark' was deleted and corrected into 'Norway'. As there is no other later addition or underlining on this page that can be attributed to Jón Eggertsson, we cannot determine whether he was responsible for this first change. MSI reveals that nowhere else on f. 6r spectrally similar ink can be found, neither in the main text nor in the marginal note by Árni Magnússon. This allows us to speculate that the first correction was not done by Árni Magnússon, or at least not at the time when he wrote his note. What is worth mentioning is that the name of the country is written in an unusual spelling for an Icelander, i.e. the Danish or Norwegian spelling "norge," while in Icelandic, we would rather expect a form derived from *Noregr* or *Norvegr*. Finally, there is one more type of ink present on the leaf, the one that was used to delete 'Norway' again from the postscript. We were not able to identify with certainty whether this ink belongs to Árni or someone else. It is possible that a third party was involved in at least one of the two changes in the commentary. Regardless of that, the first change, like Jón Eggertsson's correction on f. 3r, had to be implemented relatively soon after the manuscript was written, as all of the copies that preserve the commentary following *Hrómundar saga Greipssonar* have the reading 'Norway', not 'Denmark'. The deletion of 'Norway', however,

could have been done much later, certainly after the postscript was copied into at least one other manuscript.

The chronology of the changes on f. 1r also remains problematic. We were able to establish that Jón Eggertsson wrote the beginning of the saga, *Ólafur konungur réði fyrir Görðum,* and perhaps unintentionally omitted *í Danmörku* and then added it above the line. He probably did so immediately after he wrote this sentence, as the ink of the addition has the same reflectance spectrum as the ink used for the main text. After he finished copying the saga, he underlined some important words in the main text with different, light brown ink, and he used that lighter ink to write the marginal notes. One of them is the note in the outer margin of f. 1r: *Ólafur konungur í Görðum í Danmerkur velldi*. Then someone else, or he himself but with different ink, deleted 'Denmark' from both the main text and the marginal addition (in one or two operations). Finally, we know that, in yet another ink, Árni Magnússon restored the deleted reading *í Danmörku* adding these words in the inner margin and the blank initial space.

Multispectral imaging of AM 601 b 4to not only recovered readings that were deleted and previously unread, but also shed new light on the production and use of this manuscript. Based on the clear identification on f. 3r, we consider it plausible that all deletions of 'Denmark' in the main text and the postscript were done by Jón Eggertsson, the sole scribe of this manuscript. At least it seems less likely that Árni Magnússon was responsible for these deletions, as the ink used in his notes is spectrally dissimilar to the ink used for the changes. Moreover, the corrections must have been made relatively shortly after the texts were written down, as none of the textual descendants of *Hrómundar saga Greipssonar* in AM 601 b 4to, which were all written before 1700, preserve the deleted readings, but they all reproduce the (first) corrections. The actor behind the deletion of 'Norway' in the commentary, however, remains unknown. Perhaps additional chemical analysis by means of XRF or Raman spectroscopy of the ink used in different sections of this manuscript would shed some more light on this matter, but it lies outside the scope of this paper.

The fascinating history of corrections attested in this manuscript clearly manifests the great interest in the name of the country over which King Ólafur ruled. This is especially significant in the context of the political situation in Scandinavia at the dawn of absolutism, where each region had its own political

interests. It can be easily imagined why Jón Eggertsson would delete Denmark from the text, as he potentially planned to sell his copies to the Swedes. At least in another manuscript of *Hrómundar saga Greipssonar*, Stockholm, Royal Library, Holm papp 67 fol (Gödel 1897b: 199), also written by Jón Eggertsson, the name of Denmark does not appear at all, neither does the postscript. In the postscript in AM 601 b 4to, he interestingly mentions place names and that they caused trouble. Accordingly, it seems plausible that he himself deleted 'Denmark' from AM 601 b 4to in all three places. It is, however, not clear why he would change it to 'Norway' on f. 6r but nowhere else, if he was responsible for that later change. Was it because of the *rímur*, in which Ólafur is clearly a king of Norway, not Denmark, and perhaps Jón realized that it was anachronistic to refer to Norway as Denmark? Was it because the commentary was providing the external learned information about the contents of the saga, so it should be corrected accordingly?

Bibliography

Aðalheiður Guðmundsdóttir, ed. (2001). *Úlfhams saga*. Reykjavík.

Andrews, Albert LeRoy (1911). "Studies in the fornaldarsǫgur Norðrlanda". *Modern Philology* 8: 527–44.

Bjarni Einarsson, ed. (1955). *Munnmælasögur 17. aldar*. Reykjavík.

Bjarni Einarsson (1984). "Om Jón Eggertsson, Antikvitetskollegiets islandske agent. Et trehundredeårsminde". *Gardar. Årsbok för Samfundet Sverige-Island* 15: 5–20.

Briquet, Charles Moïse (1907). *Les filigranes, dictionnaire historique des marques du papier dès leur apparition vers 1282 jusqu'en 1600*. Geneva.

Brown, Ursula (1946). "The saga of Hrómund Gripsson and Þorgilssaga". *Saga-Book* 13: 51–77.

Faulkes, Anthony (1993). *Magnúsarkver. The writings of Magnús Ólafsson of Laufás*. Reykjavík.

Finnur Jónsson, ed. (1905). *Rímnasafn: Samling af de ældste Islandske Rimer* 1–2. Copenhagen.

Gödel, Vilhelm (1892). *Katalog öfver Upsala Universitets Biblioteks fornisländska och fornnorska handskrifter*. Uppsala.

Gödel, Vilhelm (1897a). *Fornnorsk-isländsk litteratur i Sverige. 1, "Till Antikvitetskollegiets inrättande"*. Stockholm.

Gödel, Vilhelm (1897b). *Katalog öfver Kongl. bibliotekets fornisländska och fornnorska handskrifter*. Stockholm.

Heawood, Edward (1950). *Watermarks, mainly of the 17th and 18th centuries*. Hilversum.

Hooper, A.G. (1930). "Hrómundar saga Greipssonar". MA thesis. University of Leeds, Leeds.

Hooper, A.G. (1932a). "Bragða Ǫlvis saga and rímur". PhD thesis. University of Leeds, Leeds.

Hooper, A.G. (1932b). "*Bragða-Ǫlvis saga* now first edited". *Leeds Studies in English*, 1: 42–54.

Hooper, A.G. (1934). "Hrómundar saga Gripssonar and the Griplur". *Leeds Studies in English*, 3: 51–56.

Jesch, Judith (1984). "Hrómundr Gripsson revisited". *Skandinavistik* 14(2): 89–105.

Jón Helgason (1960). "Til Hauksbóks historie i det 17. århundrede". *Opuscula* 1: 1–48.

Jón Helgason (1980). "Athugarnir Árna Magnússonar um fornsögur". *Gripla* 4: 33–64.

Jucknies, Regina (2009). *Der Horizont eines Schreibers, Jón Eggertsson (1643–89) und seine Handschriften*. Frankfurt am Main.

Kapitan, Katarzyna Anna (2017). "A choice of relationship-revealing variants for a cladistic analysis of Old Norse texts: some methodological considerations". Koraljka Golub & Marcelo Milrad, eds. *Extended Papers of the International Symposium on Digital Humanities*. Växjö: 52–74.

Kapitan, Katarzyna Anna (2018). "Studies in transmission of *Hrómundar saga Greipssonar*". PhD thesis. University of Copenhagen, Copenhagen.

Klemming, G.E. (1868). *Ur en antecknares samlingar*. Stockholm.

Kölbing, Eugen (1876). *Beiträge zur vergleichenden Geschichte der romantischen Poesie und Prosa des Mittelalters*. Wroclaw.

Kålund, Kristian (1889–1894). *Katalog over den Arnamagnæanske Håndskriftsamling* 1–2. Copenhagen.

Kålund, Kristian, ed. (1920). *Arne Magnussons private brevveksling*. Copenhagen.

Már Jónsson. (2012). *Arnas Magnæus philologus (1663–1730)*. Odense.

Netz, R. et al., eds. (2011). *The Archimedes Palimpsest* 1–2. New York.

Ólafur Halldórsson (1978). *Grænland í miðaldaritum*. Reykjavík.

Páll Eggert Ólason (1948–1952). *Íslenzkar æviskrár frá landnámstímum til ársloka 1940*. 1–5. Reykjavík.

Springborg, Peter (2014). "Hvad man kan hitte paa". Silvia Hufnagel et al. eds. *Matthías saga digitalis 6.0: Festschrift for Matthew Driscoll on the occasion of his sixtieth birthday 15th May 2014*. Copenhagen: 91–105.

Stegmann, Beeke (2016). "Árni Magnússon's rearangement of paper manuscripts". PhD thesis. University of Copenhagen, Copenhagen.

Stegmann, Beeke (2018). "Collaborative Manuscript Production and the Case of Reykjabók: Paleographical and Multispecral Analysis". Emily Lethbridge & Svanhildur Óskarsdóttir eds. *New Studies in the Manuscript Tradition of Njáls saga: The* historia mutila *of Njála*. Kalamazoo: 29–54.

Videometer A/S (n.d.). Data Sheet. Retrieved from <www.videometer.com/Portals/0/Brochures/VideometerLab%202.pdf> (6 January 2019).

Resumé

Denne artikel præsenterer nye resultater fra en materiel-filologisk undersøgelse af AM 601 b 4to, et håndskrift fra 1600-tallet, der indeholder to sene oldtidssagaer: *Hrómundar saga Greipssonar* og *Bragða-Ölvis saga*. Fra det tekstvidenskabelige perspektiv bevarer AM 601 b 4to de bedste tekster af begge sagaer, hvorfor det er et vigtigt håndskrift i transmissionshistorien af disse sagaer. Udover de traditionelle metoder, herunder kodikologiske og palæografiske analyser, støtter undersøgelsen sig også til multispektralfotografering af håndskriftet for at forstå skriveprocessen og kronologien bag ændringerne i *Hrómundar saga*-teksten. Artiklen fokuserer på tekstanalysen af håndskriftet, dets hovedtekster såvel som paratekster, og undersøger de fysiske træk i håndskriftet med særlig fokus på papiret. Det giver mulighed for at revidere dateringen og at diskutere betingelserne for skrivningen. Artiklen diskuterer om papiret, der blev brugt i dette håndskrift, var genbrugt fra en ældre bog. Dette kunne tyde på, at håndskriftet blev skrevet, mens skriveren Jón Eggertsson havde begrænset adgang til ressourcer, da han sad fængslet i København i årene 1684–1687. Med hjælp af multispektralbillederne viser artiklen også, at de ældste ændringer i *Hrómundar saga Greipssonar*-teksten sandsynligvis går tilbage til Jón Eggertsson selv, og at han foretog disse rettelser, før teksten blev afskrevet i andre håndskrifter.