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Authenticating the coat of arms in a Gruuthuse manuscript

Ladies and gentlemen, dear colleagues,

It is a real pleasure and a great honour for me to be standing here at Trinity College and have the opportunity to tell you more about a fascinating acquisition my library made and the research we undertook and made possible regarding this manuscript.

Let me take you back to 2004. In March of that year the keeper of medieval manuscripts, Anne Korteweg, now retired but at that time my nearest colleague, received a phone call from a go between person who asked her whether our library was interested in buying the Gruuthuse manuscript. You should know that this manuscript has an almost mythical status. In fact it is one of the most famous manuscripts containing Dutch medieval literature. [Slide 2] It is comparable with the Hulthem manuscript in the Royal Library in Brussels with among others the so called 'abele spelen' (noble plays) such as Esmoreit and Lanceloet of Denmark, [Slide 3] with the Comburg manuscript in the Württembergische Landesbibliothek in Stuttgart, containing an adaptation of the Roman de la Rose in Dutch, the journey of St. Brendan and the famous satire of Reynaert the Fox . And it is comparable with the Dyckse manuscript, that also keeps a version of the Reynaert. This Dyckse manuscript was acquired in 1991 by the Universitäts- und Landesbibliothek in Münster for the sum of one and a half million D-Mark.

[Slide 4] The Gruuthuse manuscript offered for sale was the last of these famous manuscripts still in private hands. It was owned by the baron of Caloen, residing on a small castle nearby Bruges in Belgium and it was hardly accessible for research. And yet it contains a treasure of Dutch medieval lyrics with a challenging music notation consisting of little strokes on note bars. Songs as Egidius waer bestu bliven and Alloette voghel clein are evergreens and only known from this Gruuthuse codex. [Slide 5]

You can imagine how excited we were after this phone call. Of course our library, the national library of the Netherlands, is a good home for this highlight of Dutch medieval literature. We keep, for instance, the famous The Hague Lieder manuscript and the only manuscript in Dutch of the adventures of King Arthur, or the renowned masterpieces by Jacob van Maerlant, his Spieghel Historiael and Der Nature Bloeme.

To make a long story short: The royal library succeeded in acquiring this manuscript for a lot of money brought together by the Friends of the Library, the Dutch government and many private funds. We launched a website with the digitized edition of the manuscript. And with all this we gained nationwide free publicity on the front pages of the Dutch newspapers, and the on the prime time tv-news. In all our communications on this acquisition we underlined the main reason for buying this codex. We bought it to make it public and accessible for researchers. We did not want to steal this important piece of cultural heritage from our Belgian neighbours, who also had their eye on it. The manuscript was once written in Bruges and had circulated there. The city library of Bruges and the Belgian national library, the royal library in Brussels could have acquired the book if the owner had so desired. But the Baron of Caloen had his reasons to do otherwise and in the end chose us.

Nevertheless in Belgium they were not amused, so to speak. [Slide 6] To show our intentions that we had only acquired the manuscript to return it to the Dutch speaking world, including Belgium, we organised a large exhibition around this manuscript in cooperation with the city museums in Bruges. In 2013 the manuscript came back to the city where it was written around 1400. It was exhibited in the Gruuthuse palace, the house of Lodewijk of Gruuthuse, Lord of Bruges, who once possessed this manuscript among many others.

With my apologies for this rather long introduction I will now tell you more about this bibliophile, the owner's marks he used in his manuscripts, the question that arose around the owner's mark in our Gruuthuse-manuscript and how we found the answer to it. This will be a story about cooperation and about the use of state of the art optical instruments: a quantitative hyper spectral imager and a macro x ray fluorescence reflection scanner.

[Slide 7] Lodewijk van Gruuthuse (ca. 1422-1492)

Lodewijk van Gruuthuse, also known as Louis de Bruges, was Lord of Bruges and an important courtier at the court of Philip le Bon. He was knighted in the prestigious Order of the Golden Fleece in 1461. In a manuscript with the ordinances of this Order from 1473 he is depicted in full length, with the chain of the order around his coat of arms. Like his master the Duke of Burgundy Louis de Bruges was a bibliophile too. He both ordered beautiful embellished manuscripts and bought second hand books. In all his manuscripts one or more owner's marks can be found, for instance [Slide 8] his coat of arms at the bottom of the first richly decorated page of the manuscript, or his motto [Slide 9] (Plus est en Vous, or Meer es in U, More is in you), often written on a banderole in the margin of the manuscript. Or, the third mark that reveals his ownership: [Slide 10] his personal emblem or impresse: a mortar firing a large ball (une bombarde). At the moment there are 146 manuscripts known from the library of Louis de Bruges. The greater part of them is now in the Bibliothèque nationale de France in Paris. After the death of Louis de Bruges in 1492 they were transferred into the possession of King Louis XIII of France. Here I show you some of these manuscripts with their owner's marks: [Slide 11]

(1) [Slide 12] His coat of arms. Often this shield is overpainted with the Royal French armorial bearings, the lily on a blue field of the House of Valois. In some cases, the margins reveal the original ownership of Louis de Bruges by the visible motto (2) [Slide 12] or the bombarde (3) [Slide 13].

[Slide 14] Our Gruuthuse manuscript only has his coat of arms as an ex libris. It survived the nineteenth century cut when the codex was rebound. The loss must be at least 2 centimeters around the page. Only folium 2r escaped the binders knife; the parchment with the coat of arms is folded in and is still there.

[Slide 15] The text around the coat of arms, written in a late eighteenth or early nineteenth century hand, reads: Messire Loys de Bruges Seig.^r de la Gruythuyse / Prince de Wincestre fust eslué Ch[eva][ie[r] 1461 / en la Ville .S. Omer avec Don Ian Roy / d'Arragon. Nauare etc. / Plus est en Vous. Meer is in V

(In translation: Sir Louis de Bruges, Lord of Gruuthuse, Prince of Winchester was elected Knight 1461 in the city of Saint Omer with Don Juan King of Aragon and Navarre etc. Plus est en Vous, More is in you.) By the way: Louis de Bruges never was Prince of Winchester, this title doesn't exist at all. He

was created Earl of Winchester by King Edward VI as early as 1472. It was an exceptional honour in return for the hospitality that Gruuthuse, as the stadtholder for the Duke of Burgundy living in The Hague at that moment, had given the king when he had to fled England during the Wars of the Roses.

In several other places in the manuscript the same hand has written the motto and name of Gruuthuse or his wife Margaretha van Borselen and the year 1461 or 1462. This later owner or user of the manuscript seems to indicate that this codex must have been written in 1461 and 1462 in commission or as a gift for Louis de Bruges at the occasion of his honourable entrance in the Order of the Golden Fleece. These handwritten additions however don't point to the original date of the manuscript. There are too many indications that show that the songs, prayers and poems must have been written at least half a century before, around 1405 -1410. It looks as if a later owner of the manuscript has tried to upgrade the provenance of the codex by writing the name of the Lord of Bruges in several places in the manuscript. Who this person was, is still unknown.

The handwriting around the coat of arms in a fantasy script must date from the late eighteenth or early nineteenth century. This fact made some historians think that the coat of arms itself was a later addition too. [Slide 16] In their eyes the coat of arms in the manuscript apparently differs from the official escutcheon visible in the Gruuthuse palace, or in his portrait, or on the enamel painted clasps of a Gruuthuse manuscript in Brussels. It has no silver crosses in the second and third quarter of the coat of arms.

In 2007, thanks to the initiatives of my now retired colleague, Henk Porck, conservation scientist in our library, we were able to start a research group with our colleagues in the National Archives and the firm Art Innovation on one hand, and the editor of a new edition of the Gruuthuse manuscript, Herman Brinkman of the Huygens Institute for Dutch History on the other. By using a Quantitative Hyper Spectral Image (QHSI) system we tried to get insight in the authenticity of the coat of arms. [Slide 17]

HSI is an optical , non-destructive method, by which a digital camera in a closed box, scans an object with different wavelengths along the whole spectre from ultraviolet to infrared. The taken scans show different views of the object because a specific wavelength results in a different reflection of the different materials at the scanned surface. [Slide 18] All pictures together can be assembled to a so called 'data cube', this cube can be played like a movie and one can choose a specific exposure with the best visible results. The results can be processed with a quantitative analysis into diagrams showing curves. [Slide 19] Similar curves prove a similar reflection and thus a similar entity on the photographed surface, e.g. an ink, or a pigment of colour in the paint used for an initial or in our case a coat of arms. By means of statistical analysis these results can also be turned into pictures in which relevant measurements are coloured: the false colour pictures.

I show you the results in the following slides:

1. [Slide 20] the scanned parts of fol. 2r
2. [Slide 21] the curves in the graphs
3. [Slide 22] the bottom part of fol. 2v with the coat of arms in false colour

Our conclusion was that the reflections prove that the ink of the motto around the coat of arms and of the title at the top of the page is the same. And, more striking, that in the coat of arms the same ink is used as in a correction in the left column of the text, an ink that differs strongly from the ink of the whole text. This indicates that the coat of arms was already present before the motto was written. The conclusion must be that the coat of arms is not an eighteenth or nineteenth century falsification.

These results were presented at a colloquium in 2007 in Ghent. In the discussions afterwards someone stated that our evidence wasn't strong enough. We had better use X-ray spectrometry to investigate the real chemical composition of the ink and the paint.

During the preparations for the large exhibition in Bruges in 2013 we had the opportunity to extend our research. We were lucky to have professor Joris Dik from Delft University and dr. Geert vander Snickt from Antwerp University cooperating with us. They operate a movable macro-x ray fluorescence reflection scanner in their research of paintings and were curious about possible results of doing research in manuscripts. In the meantime Herman Brinkman presented an overview of manuscripts once owned by Louis de Bruges with a similar coat of arms. One of these manuscripts from the collection of the Bibliothèque nationale de France has an undoubted provenance. [Slide 23] It is manuscript BnF fr.1001, Jacques de Gruytrode, *Miroir de l'âme pécheresse*, traduit du latin par Jean Miélot. On paper, dated in the colophon: 1474. It once was in the possession of Philippe de Béthune, as is shown by his coat of arms as a supra libris. And it bears almost the same Gruuthuse escutcheon as our manuscript. [Slide 24] After 1662 it ended up in the collection of Louis XIV. No one could have added text to this manuscript in the nineteenth century. Thanks to the friendly cooperation of the Bruges Museum and the Bibliothèque Nationale we could borrow this manuscript and investigate it together with our manuscript with the HIS- camera and the XFR-scanner at the same time and place under the same circumstances. We are really grateful to Charlotte Denoël of the Bnf who accompanied the manuscript from Paris to The Hague on a snowy day in January 2013. (talking about international cooperation, this is an excellent example.) At home I thank my colleagues of our department of collection care also from the bottom of my heart. They found a safe room for the x-ray and prepared the costly manuscripts for the research. [Slide 25] The pages with the coats of arms had to be positioned into a vertical position as you can see here. Without any damage to the medieval treasures the set was built and Geert vander Snickt could start the scanning. [Slide 26]

X-ray spectrometry differs from hyper spectral imaging. It sends out x-rays to the surface and analyses the reflection by comparing it with a standardized set of reflections that are unique for every chemical element. These reflections indicating chemical elements can be made visible in a kind of false colour pictures. You can follow the process and see almost immediately whether the object contains gold, silver or a specific pigment that was used in paint in medieval times, for instance lead or white-lead.

From both manuscripts surfaces of some 4 to 5 cm were exposed to the x-ray. I now show you the results of our research:

1 [Slide 26] gold. On the first and fourth quarter of the coat of arms, the chain around and the rams pelt underneath

2 [Slide 27]mercury. In the red paint in the second and third quarter of the shield and in the rope the shield is pending, the element mercury is present.

3 [Slide 28]copper and 4 [Slide 29]lead.

The little gems on the chain and the nail that holds the hole shield contain copper and lead. The painter might have used azurite, a blue copper carbonate mixed with white-lead.

5 [Slide 30]silver. This element is used for the St. Andrew's crosses. And also on the chain and the nail there are little silver dots visible. The painter applied some sparkling there.

6 [Slide 31]iron. These images show the use of iron in the inks.

7 [Slide 32]zinc. Zinc is visible in the inks. An explanation for this might be the recipe for the medieval ink. The zinc salts in it often contain polluted iron vitriol.

Without any doubt these images prove that both coats of arms are the same even in detail. And what is even more: when we combine the images made by the HSI camera with those by the XRF we can almost see how both escutcheons are built up, we can follow their creation step by step.

First step: the artist drew with iron gall ink the outlines of the shield, the rope and the chain.

Second: the quarters 1 and four, the chain and the fleece were applied in gold.

Third: the quarters 2 and 3 and the rope were painted red with a paint that contains lead.

Fourth: the gems on the chain and the nail were painted with a paint that contains a blend of copper and lead.

Fifth: The red painted quarters receive in silver an St. Andrew's cross. Also the gems and the nail are heightened by little silver dots.

[Slide 33]I conclude: the coat of arms in our Gruuthuse manuscript is authentic. It is the same as in ms. 1001 of the BnF. Materials and the way the artist applied these is similar. Because the French manuscript dates from 1474 the owner's mark of Louis de Bruges must have been painted in the book after 1474 and at the same time the similar coat of arms must have been added to our famous Gruuthuse manuscript. [Slide 34]

[The results of this research were published before in Dutch. See:

Henk Porck, Roberto Padoan, Geert van der Snickt, Ad Leerintveld en Marvin Klein, 'Het Gruuthusehandschrift nader belicht. Verificatie van de authenticiteit van het wapen van Gruuthuse', in: Frank Willaert, Jos Koldewij & Johan Oosterman (eds.), *Het Gruuthusehandschrift. Literatuur, muziek, devotie rond 1400.. Internationaal congres Brugge 25-27 april 2013*. Gent, Koninklijke Academie voor Nederlandse Taal- en letterkunde, 2015, p. 255-271. ISBN 9789072474957]

