Codicology and Palaeography in the Digital Age 3

### Schriften des Instituts für Dokumentologie und Editorik

herausgegeben von:

Bernhard Assmann Oliver Duntze Christiane Fritze Malte Rehbein Torsten Schaßan Martina Semlak Georg Vogeler Alexander Czmiel Franz Fischer Ulrike Henny Patrick Sahle Markus Schnöpf Philipp Steinkrüger

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# Kodikologie und Paläographie im digitalen Zeitalter 3

# Codicology and Palaeography in the Digital Age 3

herausgegeben von | edited by Oliver Duntze, Torsten Schaßan, Georg Vogeler

unter Mitarbeit von | in collaboration with Bernhard Assmann, Johanna Puhl, Patrick Sahle

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### The development of a medieval scribe

Rombert Stapel

#### Abstract

Every individual has a set of traits unique for that person. These include biometric identifiers such as DNA, but the same principal applies to the notion of a scribal fingerprint or human stylome. In contrast to the innate nature of a real fingerprint, such features have been acquired over time and, by definition, are therefore subject to change. Knowledge of the (lack of) consistency of such linguistic or palaeographic identifiers over time is essential in constructing unique personal identifiers for scribes. The present article examines the case of one scribe, working as a secretary for the Teutonic Order in Utrecht and as notary public. His corpus of texts, which includes an important author's copy of the late fifteenth century Jüngere Hochmeisterchronik, covers a period of thirty years. By quantifying spelling preferences, character sizes, letter-forms and the use of abbreviations it is possible to monitor the development of his writing through time. It turns out that spelling preferences and the use of abbreviations show remarkably little consistency over a longer period. Only changing patterns in the use of certain letter-forms can be used to create a more stable timeline in Hendrik van Vianen's writings. Furthermore, abrupt changes in the patterns have been used to indicate a phased genesis of the manuscript of the Jüngere Hochmeisterchronik.

#### Zusammenfassung

Jedes Individuum hat ein eine Reihe von Eigenschaften, die einmalig für diese Person sind. Dazu gehören biometrische Merkmale wie die DNA. Die gleichen Prinzipien lassen sich auf die Idee des Fingerabdrucks eines Schreibers oder des menschlichen Stils anwenden. Im Gegensatz zur angeborenen Natur des eigentlichen Fingerabdrucks sind hier die Eigenschaften aber über die Zeit angeeignet und daher per definitionem Gegenstand der Veränderung. Das Wissen um (das Fehlen von) Beständigkeit solcher linguistischer oder paläographischer Eigenschaften ist wesentlich bei der Konstruktion eindeutiger persönlicher Identifikatoren für Schreiber. Der vorliegende Artikel untersucht den Fall eines Schreibers, der als Sekretär für den Deutschen Orden in Utrecht und als öffentlicher Notar tätig war. Sein Textkorpus, das eine wichtige Autorkopie der *Jüngeren Hochmeisterchronik* des späten 15. Jahrhunderts einschließt, umfasst einen Zeitraum von 30 Jahren. Durch die Quantifizierung von

Kodikologie und Paläographie im Digitalen Zeitalter 3 – Codicology and Palaeography in the Digital Age 3. Hrsg. Oliver Duntze, Torsten Schaßan, Georg Vogeler unter Mitarbeit von Bernhard Assmann, Johanna Puhl und Patrick Sahle. Schriften des Instituts für Dokumentologie und Editorik 10. Norderstedt: Books on Demand, 2015. 67–86. Präferenzen in der Rechtschreibung, von Buchstabengrößen und -formen und den Gebrauch von Abkürzungen ist es möglich, Entwicklungen in seinen Werken durch die Zeit zu beobachten. Es zeigt sich, dass Rechtschreibpräferenzen und der Gebrauch von Abkürzungen über einen längeren Zeitraum bemerkenswert geringe Konstanz aufweisen und daher nur wechselnde Muster im Gebrauch bestimmter Buchstabenformen genutzt werden können, um eine stabilere zeitliche Einordnung der Schriften Hendrik von Vianens zu erschaffen. Darüber hinaus wurden plötzliche Wechsel in den Mustern bisher genutzt, um die phasenweise Entstehung der *Jüngeren Hochmeisterchronik* zu kennzeichnen.

#### 1. Introduction

One of the aims of palaeographers has traditionally been the discrimination of scribes. Together with dating and localizing a hand it remains one of the key questions posed in the field. When identifying scribes, either manually or by computer, one automatically assumes the existence of a set of features that are unique for this person, this scribe. An almost limitless variety of these traits in medieval manuscripts can be quantified, such as letter angles, orthography, abbreviations, letter-forms and spacing (compare Stokes, particularly 313-314), and a wide variety of studies have approached these quantitative data in different ways (take for instance from the previous volumes: Stokes; Hofmeister, Hofmeister-Winter, and Thallinger; Aussems and Brink; Stutzmann). From a selection of these aspects, Mark Aussems developed a template for scribal discrimination that he dubbed the *scribal fingerprint* (Aussems). Just as with a human fingerprint, or DNA, there is the implication that we are dealing with a unique individual marker.

The same principle applies to the field of stylometry. Here too, there is a silent assumption that an individual employs a distinct – and therefore identifiable – "set of measurable traits of language products", referred to as the *human stylome* (Van Halteren et al.). Stylometry approaches the text primarily as a linguistic object, measuring linguistic features by means of statistical procedures. Applied to medieval texts, stylometry always faces the issue of the dynamic nature of these texts. Scribes often change the orthography or even the text itself, causing a strict distinction between scribe and author to be problematic. In the last couple of years however a number of studies using stylometric methods have tackled this challenge head-on, with promising results, also when distinguishing scribes in a text (Van Dalen-Oskam; Kestemont).

In their respective fields, both the linguistic approach of a medieval text as well as the palaeographic or codicological studies – unfortunately as of yet without much interaction – are able to provide valuable insight into the workings of a medieval

writer. However, in order to distinguish scribes and/or authors from another, it is essential to know how consistent the expressions of scribes remain during their career. Writing in the Middle Ages remains an inherently 'human' process and it is therefore not surprising that the writing preferences of a medieval scribe vary. Note for instance how some scribes start their manuscripts using a formal script, that gradually degenerates and becomes more current towards the end (compare Parkes 21; McGillivray 55–56). One may also find examples of the opposite, with scribes slowly finding their rhythm in the opening stages of a manuscript before reaching consistency in their handwriting.

Indeed, quantitative case studies by Jacob Thaisen and John McGillivray have shown that the expressions of a single scribe could evolve significantly within a single manuscript (Thaisen, "Probabilistic Analysis"; Thaisen, "Overlooked Variants"; McGillivray). Both examine their manuscripts on a fairly granular level – that of the quire or tale - and also point at the need for more comparative material provided on a grander scale. Until then, it remains difficult to ascertain what parts of the writing of scribes is consistent and what parts could develop over time - both within the confinements of a single manuscript as well as during the career of a scribe. Whereas the material presented below is hardly the grand scale perhaps envisaged, it can showcase the possibilities of such an approach. Moreover, we have chosen to examine the text on a lower level – folio or chapter/paragraph – in order to examine the development of the writings more precisely. Using a unique corpus of writings by a single scribe the development of the scribe's hand can be followed over time. Furthermore, the quantified scribal features of his writings will be used to define the phased genesis of his most notable work, the oldest manuscript of the so-called Croniken van der Duytscher Oirden (Chronicle of the Teutonic Order) or Jüngere Hochmeisterchronik (e.g. Stapel and Vollmann-Profe).

#### 2. The corpus

The *Croniken van der Duytscher Oirden* concerns the history of the Teutonic Order, a military order that originated in the Holy Land during the Third Crusade. From the thirteenth century onwards the Order became increasingly active in the Baltic region. The *Croniken* was written originally in Middle Dutch, probably in the Utrecht bailiwick of the Teutonic Order. It is generally regarded as the last testimony of a long line of historiographical works produced by members of the Teutonic Order that include well-known works such as the *Livländische Reimchronik*, the chronicles by Peter von Dusburg and Nikolaus von Jeroschin and the *Ältere Hochmeisterchronik*. The *Croniken* became one of the most influential of these texts in the sixteenth century, not only within the Order, but also or perhaps even primarily in upcoming urban

circles in both Prussia and Livonia and beyond. Numerous manuscripts, translated into both Low German and High German were dispersed across Central and Northeast Europe.<sup>1</sup>

The oldest manuscript of the Croniken is now held in the Deutschordenszentralarchiv in Vienna (Hs. 392).<sup>2</sup> Watermark evidence suggests that the manuscript (in its present state containing 201 folios and 774 chapters)<sup>3</sup> was produced in at least three phases. In a first phase, the quires 3 to 9 (of 19) were assembled using paper dated around 1480. Around 1491 the second half of the chronicle, including a part at the end that described the history of the local Utrecht bailiwick and Land Commanders, was added (quire 10-19). The text on the final page, containing the life of Land Commander Johan van Drongelen (1469-1492), was finished later by the scribe of the manuscript. It suggests a *terminus ante quem* of the rest of the chronicle of 15 August 1492, the day Van Drongelen had died – which is mentioned in the text.<sup>4</sup> Using the same paper a table of content was placed in front of the chronicle (quire 2). Finally, three single bifolia that could, perhaps, be dated around 1496 can be found in three different places, among which quire 1. Only two of these bifolia contain medieval text, the other was originally left blank and now contains seventeenth century notes. All medieval text in the manuscript, thus including those two bifolia, is written in one single hand. And although the Vienna manuscript is in no sense a working copy, for one it has a neat and finished appearance, there is indeed evidence of editorial amendments that one could only associate with the author. The Vienna manuscript is therefore either an autograph, or an author's copy written in close collaboration with the author - the latter being the most probable for various reasons.<sup>5</sup>

The hand that wrote the *Croniken* manuscript belonged to a professional writer named Hendrik Gerardsz van Vianen. Van Vianen was probably secretary of the Land Commander of the Utrecht bailiwick Johan van Drongelen (1469-1492) and later in life became active as notary public. Between 1479 and 1509 he wrote, apart from

<sup>&</sup>lt;sup>1</sup> A complete list and description of all the extant manuscripts – including a detailed codicological and palaeographical examination of the Vienna manuscript discussed below – will be part of the dissertation in preparation by the author. The most recent manuscript description of the Vienna manuscript was published in 2000 (Lackner Kat.Nr. 62).

<sup>&</sup>lt;sup>2</sup> Hereafter manuscript We1 (the signature used in the dissertation) or simply the 'Vienna manuscript'.

<sup>&</sup>lt;sup>3</sup> The (modern) chapter numbers used in the new edition that is in preparation as part of the dissertation do not correspond to the ones added by Theodor Hirsch in his edition of the text printed in 1874 (Hirsch) or those present in the edition by Antonius Matthaeus from 1710 (Matthaeus 1–284; 343–360).

<sup>&</sup>lt;sup>4</sup> In the Vienna manuscript the text stops abruptly in the middle of a sentence on the last folio. At least one folio is missing, as well as two sentences that can be reconstructed using the other manuscript copies of the *Croniken*. These two sentences also provide the date of Van Drongelen's death and strictly speaking therefore, the date is not part of the present state of the Vienna manuscript. There is little doubt that it would have been included in the original manuscript though.

<sup>&</sup>lt;sup>5</sup> For the argumentation, again, reference is made to the dissertation currently in preparation. A selection of arguments can also be found in Stapel 345.

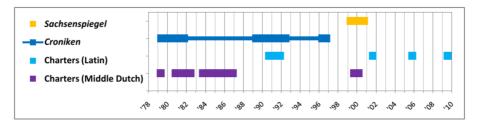


Figure 1. Writing activities of Hendrik van Vianen (1479-1509), as are presently known

the *Croniken* manuscript, a number of land charters. Most of them were written in Middle Dutch and intended for the Teutonic Order. In a couple of these land charters the name and notarial sign of Hendrik van Vianen is revealed. His hand can also be recognized in a manuscript copy of a Middle Dutch Sachsenspiegel (around 1499-1500) that contains owner marks of two sixteenth century Utrecht Land Commanders (The Hague, *Koninklijke Bibliotheek*, 133 H 4). All of his Middle Dutch writings have been transcribed in XML following the guidelines of the Text Encoding Initiative (P5). The corpus comprises more than 130.000 words. Using this corpus we can follow the development of a scribe's hand and scribal preferences.

#### 3. The analysis

With his extant writings ranging from 1479 to 1509, the opening stages of the Croniken, written on paper from around 1480, will have been written early on in Hendrik van Vianen's career. By 1491, the approximate date of the paper on which the second half of the Croniken is written. Van Vianen had written at the very least numerous charters and over seventy to eighty folios of the Croniken. In theory, Van Vianen will have become a more experienced scribe. In the first quire of the Croniken manuscript Van Vianen still showed signs of inexperience in his writing - or inconsistency at least. Here the picture emerges of a scribe that needed to get into gear and had not yet developed a persistent writing mode. To the naked eye, the characters appear smaller than elsewhere in the manuscript. This is clearly supported by the average width of the characters calculated for the entire manuscript (Figure 2). The numbers of characters on each line including spaces were extracted using a simple XSLT script. Lines that were not fully written were discarded. This was divided by the width of the text block (135 millimetres). An average was calculated for each folio or - in this particular case - chapter. It turns out that the average width of the characters in the first few folios is much lower (around 2.3 millimetres) than the average of the entire manuscript (2.5 millimetres). Around chapter 125, coinciding with the transition to

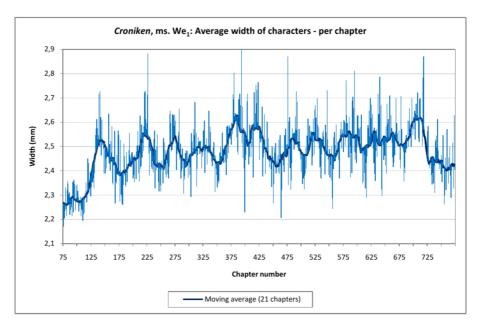


Figure 2. Croniken, ms. We1: Average width of characters, calculated per chapter. The table of content (c.1-74) is excluded.

the second quire, the width of the characters quickly increases to a size more in line with the rest of the manuscript. What is striking, is that the width of the characters increases for most of the manuscript. Apparently, Hendrik van Vianen is using more and more space for his characters – 0.1 millimetre more width equals roughly seventy to eighty less characters per page. Only in the so-called Utrecht bailiwick chronicle, placed separately from the rest of the *Croniken* at the end of the manuscript, Van Vianen uses a more compact script again.

Not only the size of the characters in the first few folios differs from the rest of the manuscript. Some of the letter-forms are also aberrant. This is especially the case with the letter w. It is the only letter-form that was quantified for Hendrik van Vianen's writings, for it is such a characteristic feature of his script. Three (or four) different graphic forms of the letter w can be distinguished throughout the writings of Hendrik van Vianen (Table 1). However, only on the first two folios the 'disjointed' form is predominant, not to return elsewhere in the manuscript (Figure 5; compare also ff. 1-4 of the *Sachsenspiegel* in Figure 11). In the remainder of the first quire (ff. 9-21) two other forms subsequently fight for dominance – at first the 'closed' w, then the 'open' variant. Only from the second quire onwards, some sort of – temporary –

Name	Description	Example
'Disjointed'	Two loose strokes of the pen, positioned diagonal alongside each other.	'want' (Figure 3)
'Closed'	Two connected and inward fac- ing, curl shaped pen strokes.	'wert' (Figure 3); 'wael', 'wt' (Figure 4)
'Open'	Two parts that open at the top, pointing away from each other, and slightly touch at the bot- tom.	'wijsen' (Figure 4)
'Mixtures'	Various intermediate forms, mixtures of the above cate- gories.	

Table 1. Letter-forms of 'w' used by Hendrik van Vianen.

balance is reached between the 'closed' and 'open' form. Judging from Figure 5 it is difficult to pinpoint a sudden shift in the writing process. Rather, it seems there is a smooth transition exchanging one letter-form for the other. The last instance of a long series of 'closed' w's can be found on f. 78v, followed by a few 'mixtures'. That is just before the last quire that consists of paper dated around 1480 (ff. 81-92). The use of the 'open' w becomes increasingly frequent, only to become the most dominant letter-form in the second half of the *Croniken*. In the table of content (ff. 3-6) too, the 'open' w is by far the most frequent – if not the only – form of the letter w.

The preference for the 'open' w in both the table of content and the second half of the chronicle runs parallel with the choice of paper, dated around 1491, over a decade later than the paper used for the first part of the chronicle. The fact that this change of paper coincides with a change in writing strongly suggests that the manuscript was produced in several phases and – given the fact that the Vienna manuscript is an author's copy – so was the text. A scenario in which an old stash of paper was used by Hendrik van Vianen and combined with a more recent selection of paper can almost certainly be excluded: one would not expect a change of script at the same location of the change of paper.

The results achieved with the letter-forms triggered further quantitative analysis of other scribal features. Could it be possible to pinpoint an exact transition in the production of the manuscript? Or do other features strengthen the image of an on-going, sometimes bumpy development of a scribe that is ripening his skills and preferences? In fact, there is evidence of both. Some features appear to have already

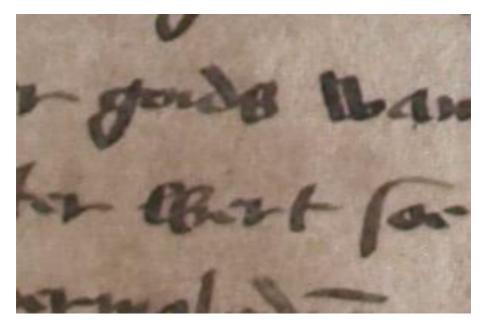


Figure 3. Croniken, ms. We1, f. 9r.

started developing during the first phase of the manuscript production, whereas others appear suddenly. If multiple changes align at a certain point, this might be a good indication that there is some sort of transition in the production process.

Truly abrupt changes can be found in the use of abbreviations in the *Croniken*. The most commonly used abbreviation by Hendrik van Vianen is the horizontal bar representing the letter n. Around twenty-five per cent of all the letters n in the *Croniken* are represented by an abbreviation (13.902 instances). However, the abbreviations are not evenly distributed as one can clearly see in Figure 6. The abbreviations in the first half of the manuscript are much more frequent than in the second. This is also the case for the –much less used– loop representing the letters -er-(126 instances; Figure 6), as well as the abbreviated form of the word 'ende' (English: and; 2.030 instances; Figure 7) or for instance the contraction that refers to the city of Jerusalem ('ihrlm'; not included here). 'Ende' is the most frequent word in the *Croniken* and in fact in most other Middle Dutch texts. The abbreviation consists of a horizontal bar above the letters en. Although the abbreviated form of the word 'ende' also shows a marked decline in popularity roughly between chapter 125 and 225 (immediately after the first quire up until an extensive part of the text that includes

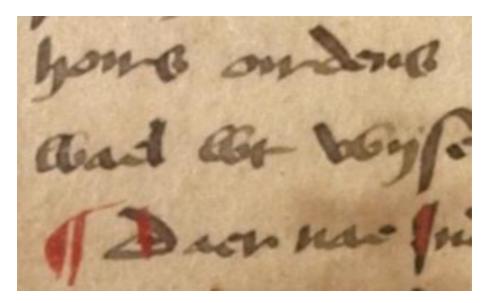


Figure 4. Croniken, ms. We1, f. 15v.

Latin privileges), most abbreviations show a change in their use at the same position halfway through the chronicle.

This transition is located at the beginning of the ninth quire – the last quire of paper dated around 1480 (ff. 81-92). A logical conclusion is that somewhere halfway in the ninth quire the writing process had haltered, leaving some of the remaining folios blank for further development. Perhaps we can pinpoint this moment around f. 83v: between chapter 379 and 380 the colour of the ink changes slightly, as does the overall appearance of the script. Compare for instance the larger than average width of the characters of the chapters immediately following this area of the Croniken (Figure 2). At the end of chapter 380 it is announced that the Livonian history will be left alone for now, to pursue the history in Prussia again. However, the chapters that follow continue to describe events in Livonia. One folio later - f. 84v (chapter 384) - a new set of sources is introduced to describe the Seventh Crusade. This also means that the chronology of the text is disturbed (chapter 383: 1258, chapter 384: 1245), which seldom occurs in the Croniken. Furthermore, all of a sudden stylized small cadels appear at the beginning of many of the chapters 381-393. Last but not least, the hierarchy of the initials adopts a new structure for the chronicle shortly hereafter, from chapter 416 onwards – the beginning of the tenth quire.

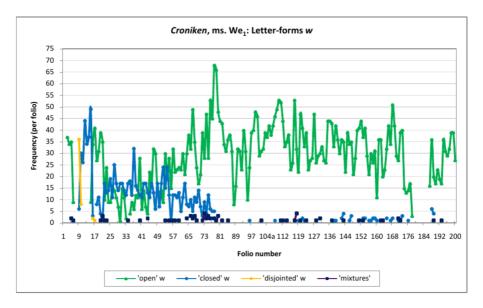


Figure 5. Croniken, ms. We1: Letter-forms w

The ninth quire also shows shifts in spelling preferences. However, most of the time these do not correspond completely with the abbreviations. All types of abbreviations in the Croniken show a marked fall in their use between chapter 379 and 380. The spelling preferences show either a gradual shift that starts somewhere in the first half of the Croniken, or show a more abrupt change elsewhere in or at the end of the ninth quire. A gradual shift is detected in the use of '-ge-' in comparison to '-ghe-' (Figure 8) but also in the earlier mentioned forms of the letter w (Figure 5). A marked change can be observed in the word 'meister' (English: master) in comparison to 'meyster' (or any other word that contains the diphthong '-ei-' or '-ey-') (Figure 9). Here, the shift is located at chapter 416 at the beginning of the tenth quire and the start of the description of a new Grand Master of the Teutonic Order, Poppo von Osterna (1252-1256). Another example is provided by the interchangeable forms of the long vowel '-ae-' and '-ai-' (compare 'daer' (615 instances) and 'dair' (432 instances), English: there). Parallel to the transition from chapter 398 and 400 (chapter 399 is in Latin) the use of the form '-ai-' increases from between ten to twenty per cent to a range of thirty to forty per cent. The surrounding chapters 393 to 415 all contain privileges, but starting from chapter 400 the chronology is rearranged.

It appears that almost all of these script related shifts in the ninth quire can be linked to the content of the *Croniken*. The fact that changes in both script and content

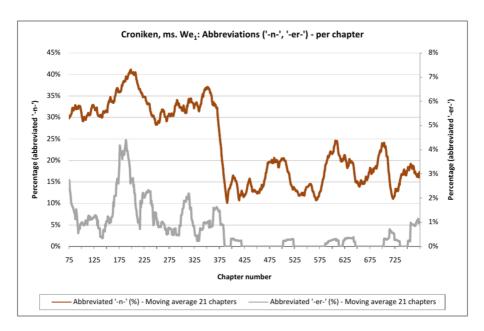


Figure 6. Croniken, ms. We1: Abbreviations ('n', 'er')

are aligned, points at delays in the production process of the manuscript. These delays, perhaps short at first, eventually resulted in a ten year period before new paper was added and work on the rest of the chronicle continued. Perhaps one could blame the political situation in the Low Countries for this delay. The struggle for power that started after the death of Duke Charles the Bold of Burgundy in 1477 seriously destabilized the region. In 1483 Emperor Maximilian besieged the city of Utrecht, also damaging the Utrecht commandry of the Teutonic Order situated next to the city walls. From May 1482 to September 1483, Land Commander Johan van Drongelen, the employer of Hendrik van Vianen, even had to leave the convent in Utrecht since it was not safe for him to stay. This is of importance especially because Van Drongelen is known to have enjoyed the company of historiographers in the Low Countries and in all likelihood had at least an active role in the creation of the Croniken. Another factor that could have triggered a phased genesis was the collection of relevant sources. The number of sources for the Croniken were extensive and evidence shows that they were often collected from various parts of Europe. Such an effort must have taken much time.

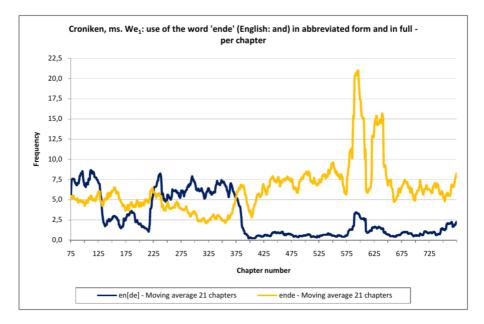


Figure 7. Croniken, ms. We1: Abbreviated form of 'ende' and in full (English: and).

#### 4. Development of a scribe

Having outlined the main phases of production of the Vienna manuscript of the *Croniken*, resulting in a first tentative attempt to determine the correct context in which the text was written, it is time to turn our eyes back at the scribe, Hendrik van Vianen. In itself, the *Croniken* is a substantial piece of text written by one scribe that stretches over at least one decade. Some of the scribal features changed gradually within the timeframe of this single text, whereas other changes appeared more suddenly, usually somewhere in or directly after the ninth quire. To determine the consistency of such features during the lifetime of a scribe, we should take a look at the rest of the corpus by Van Vianen.

The first thing that becomes clear is that not all changes in scribal preferences appearing in the *Croniken* remain so during Hendrik van Vianen's career. Note for instance the spelling of the interchangeable combination '-ge-' and '-ghe-'. In the *Croniken* (Figure 8) the dominant form '-ge-' gradually loses terrain to '-ghe-' only to reach a balance in the second half of the manuscript. Throughout the *Sachsenspiegel* (around 1499-1500), too, both combinations appear in roughly equal numbers. In the land charters however, also those written long after the *Croniken*, the combination '-

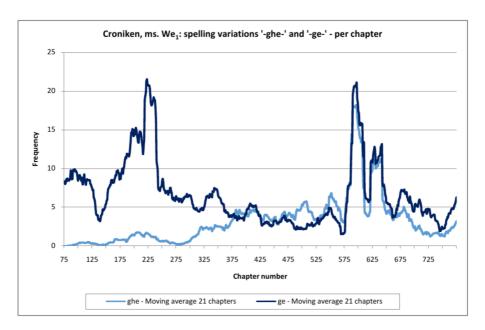


Figure 8. Croniken, ms. We1: spelling variations '-ghe-' and '-ge-'.

ghe-' is hardly present, whereas '-ge-' appears regularly, comparable to the beginning of the *Croniken*. For the diphthong '-ei-' or '-ey-', too, changing preferences that were revealed in the *Croniken* (Figure 9) do not correspond to other writings of Hendrik van Vianen. In both the *Sachsenspiegel* as well as all land charters the combination '-ei-' remained the dominant form. Furthermore, the degree of dominance of the non-abbreviated form of the word 'ende' (consistently around 90 per cent in the second half of the *Croniken*) is never equaled in the other writings by Van Vianen. Many of these new scribal preferences that developed during the production of the Vienna manuscript appear to have been short lived or confined to a specific piece of text.

This seems hardly good news to those who wish to use such scribal features to identify scribes. If one individual could change his writing preferences back and forth during his lifetime, one that wishes to discriminate that individual from other scribes would have to overcome serious methodological objections. Admittedly, the cases provided above rely mainly on a few well-chosen examples that are preferably frequent, bear no change in connotation ('meister' vs. 'meyster') and whose results are directly visible. Perhaps a more encompassing, computational approach could

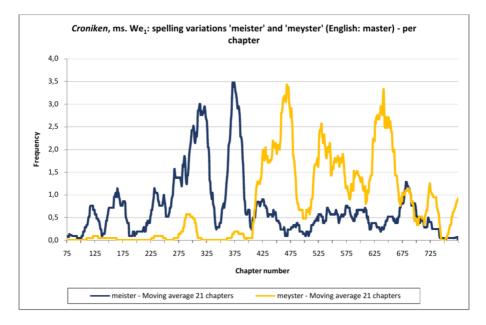


Figure 9. Croniken, ms. We1: spelling variations 'meister' and 'meyster' (English: master).

uncover other, less apparent patterns in the writings of Hendrik van Vianen. Some preliminary results from the field of stylometry are encouraging (Kestemont 54–55).

It turns out that the most useful feature to create a timeline of *all* the writings of Hendrik van Vianen is not spelling variation or the use of abbreviations but the letter-form w. In the *Croniken*, the 'open' w gradually becomes more and more dominant. In the second half of the manuscript, the other letter-forms are hardly existent (Figure 5). This is equally the case in the *Sachsenspiegel* written much later (Figure 11), as well as the three land charters that were written around the same time (1499-1500) (Figure 10). Almost all of the land charters that predate the second large phase of the *Croniken* (around 1491) show a clear preference for the 'closed' w that is also present in the first half of the *Croniken*. An important factor in the popularity of the 'closed' w in the charters is that, in contrast to the *littera hybrida* script of the Vienna manuscript and the *Sachsenspiegel*, a mixture was used between a *littera cursiva* (with loops, comparable to the 'closed' w) and a *littera hybrida* (without loops): the so-called *littera cursiva* (C/H).

There is only one marked exception in 1482, in which the 'open' w forms a majority. In the years immediately following, the 'open' w gradually withdraws again. It is

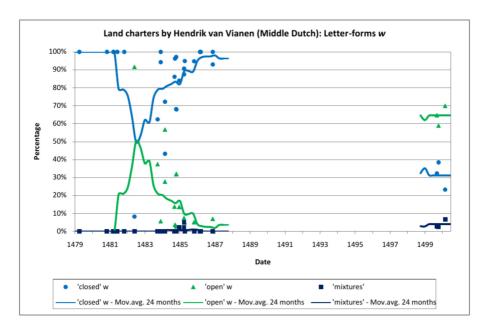


Figure 10. Land charters by Hendrik van Vianen (Middle Dutch): Letter-forms w.

tempting to attribute this practice to the aftereffects of writing the Vienna manuscript, during which process a preference for another letter-form of the w was developed (compare hypothesis 5 of McGillivray 58). After some time, the 'closed' w with its loops, a letter-form that better suits the chosen script of the land charters, would again gain ground. Only years later, in the 1490s, the 'open' letter-form would become and remain the dominant form in all of Hendrik van Vianen's writings.

One other factor strongly influences the consistency and preferences of scribes in their writing: The nature of their exemplar. This is not directly applicable to the Vienna manuscript of the *Croniken*, since it would have had no exemplar except perhaps notes or drafts. However, the characteristics of the text and manuscript of the exemplar could seriously affect the appearance of the scribe's copy (e.g. McGillivray 58). Surely a scribe will implement his own linguistic preferences in his manuscript copy, but he will also tend to take over features of the text as presented in his exemplar. Just recently, Tara Andrews and Caroline Macé have emphasized the importance of small, seemingly trivial textual variants when studying the interdependence of manuscripts and their stemma (Andrews and Macé; see also: Blake and Thaisen). Much though is still unclear in what way scribes were influenced by the appearance of

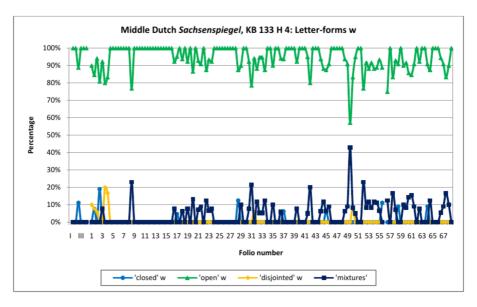


Figure 11. Middle Dutch Sachsenspiegel, Koninklijke Bibliotheek, ms. 133 H 4: Letter-forms w.

their exemplars, and to what extent and under which conditions they could implement their own personal writing preferences in the text.<sup>6</sup>

The availability of larger quantities of transcribed text is essential to study these phenomena. For the *Croniken* we not only have digital transcripts of the Vienna manuscript, but also of later Middle Dutch copies from Ghent (Ge), Utrecht (Ut1) and of an eighteenth century edition of an extant manuscript (Ma1). Again, we will turn to the two spelling variations of the word master, 'meister' and 'meyster' (Figures 12 and 13), as displayed earlier (Figure 9). What immediately becomes apparent from the graphs is that all three copies of the *Croniken* copy the orthography of the Vienna manuscript in the first half of the manuscript. However, when the spelling references of Hendrik van Vianen had changed dramatically, favouring the spelling 'meyster' over 'meister', most scribes continued the orthography associated with the first half of the Vienna manuscript Vienna as exemplar or indirectly. The form 'meister' remained the dominant form from beginning to end. Nevertheless, all three copies are also clearly influenced by the changes in spelling preference in the Vienna manuscript. The form 'meyster' was used significantly more in the second half of the text than before, especially in the Ghent manuscript that is

<sup>&</sup>lt;sup>6</sup> For a brief discussion of the influence of exemplars on scribes and relevant literature see Stokes 315–316.

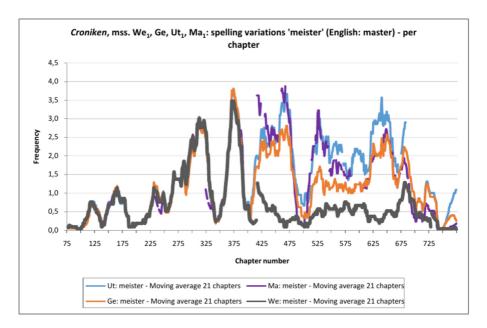


Figure 12. Variation 'meister' in three manuscripts and an edition of an extant manuscript of the Croniken.

closely related to the original Vienna manuscript. Did the scribes imitate the spelling preference of Hendrik van Vianen, but refused to imitate his sudden changes in the second half of the text? Or did the form 'meister' used originally by Van Vianen match the scribes' personal spelling preferences and did they continue to use their own personal preference in the rest of their manuscripts? The implications of these effects should be taken into account when drawing up linguistic and palaeographic profiles of medieval scribes.

#### 5. Conclusion

One of the original incentives for quantifying various scribal features of Hendrik van Vianen's writings was to get a grip on the Vienna manuscript's intriguing genesis. Both the manuscript's codicological composition and watermark evidence already pointed at the possibility that the manuscript may have been written in several phases. The investigations laid out above seem to strengthen this assumption. Moreover, the quantified scribal features proved invaluable to pinpoint the exact transitions in the text where the writing process had temporarily haltered. There was a sharp

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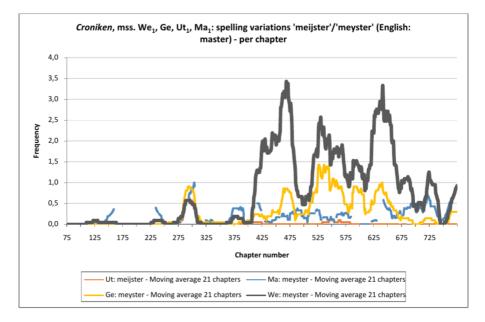


Figure 13. Spelling variation 'meyster' or 'meijster' in three manuscripts and an edition of an extant manuscript of the *Croniken*.

simultaneous decline of all abbreviations halfway through the last quire dated by watermarks around 1480, between chapter 379 and 380. However, changes in other scribal features such as variations in spelling did not correspond to this marked drop. In fact, several changes in spelling that we have examined occurred at various points in the manuscript, sometimes gradually, sometimes more abrupt. However, most abrupt changes befell on different points in or at the end of the last quire dated 1480. As almost every shift could also be linked to changes in textual context– for instance changes of subject, sources or chronology in the text – it is almost certain that these transitions coincided with several shorter or longer periods of inactivity in the manuscript production. Since the Vienna manuscript appears to be an author's copy, these periods of inactivity also apply to the writing process of the *Croniken van der Duytscher Oirden*, also known as the *Jüngere Hochmeisterchronik*.

The results presented above do have a wider importance. Various scholars have been engaged in drawing up linguistic or scribal profiles of individual scribes from quantitative data sets, for instance in order to distinguish scribes from another. The writings of Hendrik van Vianen show that there are some serious difficulties to overcome before a unique personal marker, a *scribal fingerprint* or *stylome*, can be constructed. Especially spelling preferences and the use of abbreviations showed remarkably little consistency over a longer period of time and spanning different types of writing. Furthermore, the influence of exemplars on a scribe's writing should never be ignored. The letter-form w appeared to be the most constructive feature to create a timeline in Hendrik van Vianen's writings. The 'open' w, without loops, became dominant later in his career even in the charters that were written in a script with looped letters. However, there is also the temporary popularity of the 'open' w earlier on in his career, perhaps following a period in which Van Vianen worked on the Vienna manuscript. Hopefully research on a much grander scale than presented above can help determine which features of Van Vianen's writings should be regarded idiosyncrasies, and what results have more universal implications. Using these data, we can improve the personal profiles of medieval scribes based on quantitative data, increasing their accuracy and avail for both scribal discrimination, dating and perhaps even localizing a hand.

#### Bibliography

- Andrews, T.L., and C. Macé. "Beyond the Tree of Texts: Building an Empirical Model of Scribal Variation through Graph Analysis of Texts and Stemmata." *Literary and Linguistic Computing* 28.4 (2013) 504-521.
- Aussems, J.F.A. "Christine de Pizan and the Scribal Fingerprint. A Quantitative Approach to Manuscript Studies." MA Thesis, Utrecht University.

<http://igitur-archive.library.uu.nl/student-theses/2006-0908-200407/UUindex.html>.

- Aussems, J.F.A., and A. Brink. "Digital Palaeography." Kodikologie und Paläographie im Digitalen Zeitalter 1 / Codicology and Palaeography in the Digital Age 1. Ed. M. Rehbein, P. Sahle, & T. Schaßan. Norderstedt: Books on Demand, 2009. 293–308. Print. Schriften des Instituts für Dokumentologie und Editorik 2.
- Blake, N., and J. Thaisen. "Spelling's Significance for Textual Studies." Nordic Journal of English Studies 3.1 (2004): 93-108. Print.
- Hirsch, Th. "Die Jüngere Hochmeisterchronik." Scriptores Rerum Prussicarum. Die Geschichtsquellen Der Preussischen Vorzeit Bis Zum Untergange Der Ordensherrschaft. Ed. Th. Hirsch, E. Strehlke, & M. Töppen. V. Leipzig, 1874. 1–172. Print.
- Hofmeister, W., A. Hofmeister-Winter, and G. Thallinger. "Forschung Am Rande Des Paläographischen Zweifels: Die EDV-basierte Erfassung Individueller Schriftzüge Im Projekt DAmalS." Kodikologie Und Paläographie Im Digitalen Zeitalter 1 / Codicology and Palaeography in the Digital Age 1. Ed. M. Rehbein, P. Sahle, & T. Schaßan. Norderstedt: Books on Demand, 2009. 261–292. Print. Schriften des Instituts Für Dokumentologie und Editorik 2.
- Kestemont, M. "What Can Stylometry Learn From Its Application to Middle Dutch Literature?" *Journal of Dutch Literature* 2.2 (2011): 46–65. Print.
- Kestemont, M., and K.H. van Dalen-Oskam. "Predicting the Past: Memory Based Copyist and Author Discrimination in Medieval Epics." Proceedings of the 21st Benelux Conference

on Artificial Intelligence. Ed. T. Calders, K. Tuyls, & M. Pechenizkiy. Eindhoven, 2009. 121-128.

- Lackner, F. Katalog Der Streubestände in Wien Und Niederösterreich. Nichtarchivalische Mittelalterliche Handschriften Und Fragmente in Korneuburg, Mistelbach, Retz, St. Pölten, Tulln, Waidhofen an Der Thaya, Weitra, Wien, Wiener Neustadt Und Aus Privatbesitz. I. II. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2000. Web. 17 Oct. 2011. Veröffentlichungen Der Kommission Für Schrift- Und Buchwesen Des Mittelalters, Reihe II, Verzeichnisse Der Handschriften Österreichischer Bibliotheken 5/1.
- Matthaeus, A. Veteris Ævi Analecta, Seu Vetera Aliquot Monumenta, Quæ Hactenus Nondum Visa. 1st ed. X. Leiden, 1710. Print.
- McGillivray, M. "Statistical Analysis of Digital Paleographic Data: What Can It Tell Us?" *TEXT Technology* 14.1 (2005): 47–60. Print.
- Parkes, M.B. *English Cursive Book Hands, 1250-1500.* 3rd ed. Berkeley/Los Angeles/London: University of California Press, 1980. Print.
- Stapel, R.J. "Layer on Layer. 'Computational Archaeology' in 15th-century Middle Dutch Historiography." *Literary and Linguistic Computing* 28.2 (2013): 344–358. Print.
- Stapel, R.J., and G. Vollmann-Profe. "Cronike van der Duytscher Oirden (Chronicle of the Teutonic Order) [Jüngere Hochmeisterchronik (Younger Chronicle of the Grand Masters)]." Ed. G. Dunphy. Encyclopedia of the Medieval Chronicle 2010: 328–329. Print.
- Stokes, P.A. "Computer-Aided Palaeography, Present and Future." Kodikologie Und Paläographie Im Digitalen Zeitalter 1 / Codicology and Palaeography in the Digital Age 1. Ed. M. Rehbein, P. Sahle, & T. Schaßan. Norderstedt: Books on Demand, 2009. 309–338. Print. Schriften des Instituts Für Dokumentologie Und Editorik 2.
- Stutzmann, D. "Paléographie Statistique Pour Décrire, Identifier, Dater... Normaliser Pour Coopérer et Aller Plus Loin ?" Kodikologie Und Paläographie Im Digitalen Zeitalter 2 / Codicology and Palaeography in the Digital Age 2. Ed. F. Fischer, C. Fritze, & G. Vogeler. Norderstedt : Books on Demand, 2010. 247–277. Print. Schriften des Instituts Für Dokumentologie Und Editorik 3.
- Thaisen, J. "A Probabilistic Analysis of a Middle English Text." Digitizing Medieval and Early Modern Material Culture. Ed. B. Nelson & M. Terras. Arizona: Iter / Arizona Center for Medieval and Renaissance Studies, 2012. 171–200. Print. New Technologies in Medieval and Renaissance Studies Series 1.
- -. "Overlooked Variants in the Orthography of British Library, Additional MS 35286." Ed. M.W. Driver. *Journal of the Early Book Society: for the study of manuscripts and printing history* 11 (2008): 121–143. Print.
- Van Dalen-Oskam, K.H. "The Secret Life of Scribes. Exploring Fifteen Manuscripts of Jacob van Maerlant's Scolastica (1271)." *Literary and Linguistic Computing* 27.4 (2012): 355–372. Print.
- Van Dalen-Oskam, K.H., and J.J. van Zundert. "Delta for Middle Dutch. Author and Copyist Distinction in Walewein." *Literary and Linguistic Computing* 22.3 (2007): 345–362. Print.
- Van Halteren, H. et al. "New Machine Learning Methods Demonstrate the Existence of a Human Stylome." *Journal of Quantitative Linguistics* 12.1 (2005): 65–77. Print.