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ON THE ORIGIN OF PATTERNING IN MOVABLE LATIN TYPE

*Renaissance standardisation, systematisation, and unitisation
of textura and roman type*

Frank E. Blokland

In line with my predecessor and tutor at the Royal Academy of Art in The Hague, the Dutch type designer, calligrapher, and author on typography Gerrit Noordzij (1931), and his illustrious precursor, the British calligrapher and author on calligraphy Edward Johnston (1872–1944), I consider writing with broad nib, flat brush, and flexible-pointed pen a good starting point for exploring matters like construction, contrast, contrast sort, and contrast flow in type design. However, from my experience as lecturer I conclude that writing is not a prerequisite for designing type, nor for a thorough understanding of the basics of typography.

It is evident that handwritten models formed the basis for movable type, the quintessential difference between the two forms being that in movable type characters need to be positioned on distinct rectangles. That the fifteenth-century punchcutters translated handwritten models to these rectangles by eye (visually), both in the case of textura and roman type, has become the generally accepted view. However, although there was undeniably a direct relationship between roman type and its handwritten precursor, the Renaissance punchcutters had to deal with all kinds of technical aspects unknown to calligraphers. This raises the question of whether certain details in roman type are the result of technical aspects rather than of the interpretation of calligraphic models. Taking the technical requirements for the Renaissance type production –besides the calligraphic aspect– into account when investigating the details of roman type could provide more insight into the origins of the structure of roman type.

The question is: were the Renaissance archetypal models by Nicolas Jenson (ca.1404–1480), Francesco Griffo (1450–1518), Claude Garamont (ca.1510–1561), and Robert Granjon (1513–ca.1590), made with the use of patterns? And if this is the case, are harmonics and aesthetics in type, which are embedded in typographic conventions, not only the result of optical preferences predating the invention of movable type, but also of technically inspired standardisation in the Renaissance type production? These questions lead to the main hypothesis of my dissertation:

– *The creation of roman type was influenced at least as much by technical as by aesthetic considerations.*

In order to support this hypothesis, I investigate the following two sub-hypotheses:

- *Roman type is the result of the standardisation in the Renaissance of the Humanistic minuscule to the type production process. This is in analogy to the standardisation that took place when the already rather ‘unitised’ gothic hand was used as the basis for textura type.*
- *Aesthetic preferences in roman type continue to be conditioned by the early standardisation of roman type production.*

I hypothesise that roman type was in fact the result of the adaptation of the Humanistic minuscule to the existing type production process based on standardised rectangles. Because of the organic morphologic relationship between the handwritten origins of textura type and roman type, the production of the latter could be standardised in a similar manner as that of the former. This does not mean that I deny that manuscript models are at the basis of the production of roman type. What I try to argue is that the influence of the handwritten models is a matter of formal principles (morphology), while the details and final proportions owe more to the exigencies of the translation process to standardised rectangles.

To support my main hypothesis, I discuss the importance traditionally attributed to handwriting and the eye of the type designer in the production of roman type and I closely examine the flaws behind this line of thinking, highlighting the inherent differences between typography and calligraphy. This information is then used to examine the standardisation of handwriting for the production of roman type.

In support of the first sub-hypothesis, I examine the links between gothic and roman type, and between the latter and its handwritten origins. My aim is to prove that the regularity of the written textura quadrata made it relatively easy for the German printer and punchcutter Johann Gutenberg (ca.1398–1468) and consorts to standardise and systematise their movable gothic type, which was directly based on its written precursor. Once this was accomplished for textura type, it was natural to apply the same system to the new roman type (and decades later to italic type) due to the relationships between the gothic hand and the Humanistic minuscule, on which roman type was based.

I explore this relationship with the use of a geometric letter model, which I developed through the course of my research. The model maps the construction of letters written with a broad nib and supports the idea that handwritten letters contain an intrinsic standardisation. I also use this model to illustrate the differences between the Humanistic minuscule and roman type.

In an attempt to further support the second sub-hypothesis, I discuss the flaws in the generally accepted theory that roman type was largely the result of aesthetic considerations. I argue that what we find optically appealing in Latin type is –at least partly– the result of the standardisation process. My aim is to prove that our present-day eyes are conditioned by the outcomes of this standardisation, and due to this we unconsciously use the roman and italic types from the early days of typography as points of reference.

The lack of Renaissance documentation on the production of type implies that what has been written on this subject so far is not based on original sources, but merely on the projection of seventeenth- and eighteenth-century descriptions of earlier times. And if there is no documentation, the best course of action is to distil information from Renaissance artefacts –not unlike archaeologists do– and to compare this with the information from later dates. Subsequently I describe the technical details of the Renaissance type production, discussing first the general process and then focusing on the technical possibility for width standardisation of the matrices for simplified type casting.

The aforementioned geometric letter model, which I use to illustrate the morphologic relationship between textura handwriting and the Humanistic minuscule, formed the basis for software to digitally reproduce the standardisation of the handwritten textura and the Humanistic minuscule for type fitting. In addition, a unit-arrangement system that is at the root of Renaissance type, as I aim to prove, and that I distilled from examples of both textura and roman type is introduced. This unit-arrangement system formed the basis for software to distil, analyse, and reproduce the unitisation. This software is used then to illustrate the similarities in widths in gothic and Renaissance prints and further used to measure width standardisation related to this form of patterning. It is also used to parametrically space digital typefaces. Hence, the software directly connects the Renaissance archetypal standardisation and systematisation with today's type-design practice. The parametrical spacing method and its outcomes are compared with the traditional process of optically spacing type to illustrate the extent to which seemingly aesthetic preferences can be obtained

systematically. The application of archetypal patterning in digital type production is used to demonstrate how this allows greater control of the harmonic and rhythmic aspects in type design today.

After investigating horizontal standardisation, vertical proportions in Renaissance type are investigated in relation to the horizontal standardisation as the last piece of evidence to support my hypothesis that the Renaissance punchcutters made use of standardised handwriting in the production of roman type in a process analogous to the more obvious standardisation of textura handwriting for textura type. To this end, I present dynamic frameworks that may have been used in this process.

Finally I try to answer the question of why later roman type designs show a greater diversity in proportions and details than can be found in the archetypal models. I discuss the decline in the need for standardisation in the post-Renaissance type production process and I try to answer the question of whether it is possible that this decline caused later punchcutters to place a greater emphasis on the eye. The aim is to support my hypothesis that, contrary to the widely accepted belief that roman type was solely the result of aesthetic considerations, our aesthetic preferences were and continue to be conditioned by Jenson's roman type patterns, which are for a large part the result of the adaptation of the Humanistic minuscule to the Renaissance movable-type production process.

The oldest roman type that shows a clear standardisation of the rhythmic and harmonic patterns is Jenson's model. It was used by Griffo as the basis for his two roman types from 1495 and 1499 respectively. Based on the outcomes of my research I conclude that it is plausible that Griffo used Jenson's model because it nicely combined aesthetics with technical advantages due to its standardisation. French-Renaissance punchcutters, such as Garamont and Granjon, copied Griffo's model. Subsequently Jenson's patterning became dominant in the world of Latin type and hence determined the typographic conventions that are still used today.

Because Jenson's patterning was in part determined by prerequisites for the production of type, the typographic conventions are not purely the result of optical preferences predating the invention of movable type, but are also the result of the standardisation of characters in the Renaissance type production. By mapping the underlying harmonic and rhythmic aspects, we gain more insight

into what exactly the creative process in type design comprises, and what its constraints are. It also makes the parameterisation of digital type-design processes possible.