

# THE ESSENTIAL FORM

## THE W.A. DWIGGINS LECTURE 2007

*Text and illustrations from the 33rd annual W. A. Dwiggins lecture given by Sumner Stone at the Boston Public Library on April 25, 2007, with minor edits.*

Last year I received from Lance Hidy a volume titled *The SP Century* just published by the Society of Printers. In Lance's chapter, "The Mission and the Missionaries" I found a description of W.A. Dwiggins prophetic vision of society 500 years in the future along with these illustrations.



It caused me to look again at my own story about the future. In my case I chose a 2000 year leap. This is an illustration of *The Building*, a massive creature which contains most of humanity. The genetic code plays a large role in the story.



We are now going on a journey of five thousand years before the present to have a look at another code – human writing. But let us start with the present.



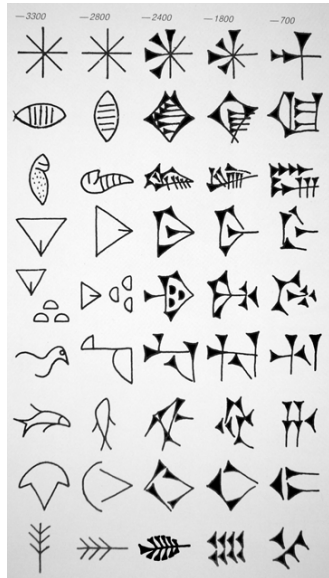
I would like to examine the reappearance and still rapidly increasing importance of the sans serif form. The range of use it enjoys continues to increase and in recent years this trend seems to have accelerated. If it continues, the monoline letter will become the dominant style of the roman script once again.

And this monoline style is not confined to Roman writing. There are Cyrillic and Greek sans serifs. The Western form has been enthusiastically adopted by both the Japanese and Chinese who use it in contexts which connote modernity, western influence, and industrialization. Sans serifs also exist for Indian and Arabic scripts and others.

Although the recent history of the sans begins only 200 years ago, its earliest appearances are in the simplified drawings which make up the Sumerian and Egyptian scripts of around 3100 BCE. The earliest known Sumerian pictographic characters were written with a reed stylus on wet clay.



The “sans serif” stage of Sumerian lasts for about 500 years, a length of time worth remembering since it is not only the time which Dwiggin chose for his vision of the future, but also the approximate life span of both the pre-serif Roman letter and of metal movable type in Europe.



The transition to the wedge-shaped stroke is the single most significant graphic event in the Mesopotamian writing now called cuneiform. The wedge, of course, has thick and thin parts. The transition from monoline to thick and thin occurred at a time when the writing system had become less dependent on the pictorial content of its signs. The internal graphic structure of the system became increasingly important, and the wedge played an important role in this process. The wedge was supplanted only when the writing system itself expired.

The story of the monoline form in Egyptian is somewhat more complex. The earliest monoline forms can be seen on the fragment of a vase from the pre-dynastic period also dated around 3100 BCE.

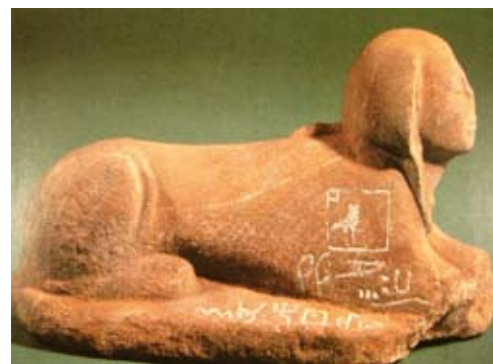


However, very sophisticated pictographic writing also occurs quite early in Egypt as exemplified in the famous Narmar palette and the magnificent inscription bearing the “characters” for the serpent king.



The thick and thin hieratic, written with an edged tool develops, like cuneiform, into a system in which the pictographic aspect becomes subordinate to the internal graphic system. However unlike Mesopotamia, Egypt retains not only a highly formal pictographic style, the hieroglyphic, but also a monoline hieroglyphic cursive. The simplified linear characters of the hieroglyphic cursive continue along with the hieratic and hieroglyphic.

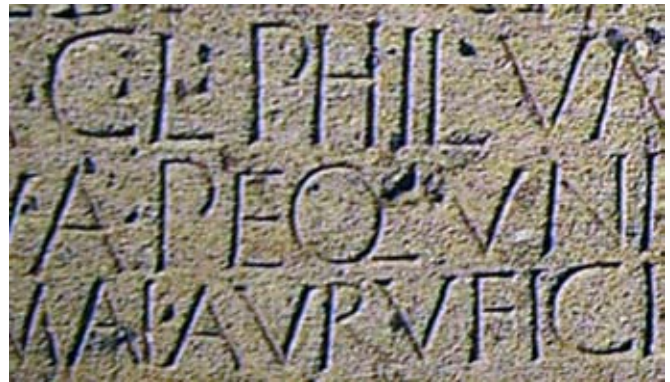
Evidently these simple linear forms of the hieroglyphic cursive were adopted by Western Semitic people in the first half of the second millennium BCE. We see them in the examples of what is thought to be early Semitic writing. The best known example is this sphinx from the Sinai dated about 1500 BCE or possibly earlier. The upper characters are written in a monoline hieroglyphic and the lower ones in the Semitic script.



One branch of the writing system tree that grew from this early Semitic writing is the Phoenician/Greek, Etruscan/Roman line of scripts. They were all monoline. The forum cippus from the 6th century BCE. Votive krater from the later 4th century BCE. Marble water basin 3rd century, first example of grooves for inlaid metal letters.



Some of the later examples like the Gaavia inscription from the first half of the first century BCE look remarkably modern to me, and have been an inspiration for my own work.



Lance Hidy's typeface Penumbra evokes the original transition from sans to seriffed forms. The first seriffed letters are Greek from the fourth century BCE and the serifs are tentative like Penumbra's Flare and Half Serif versions.

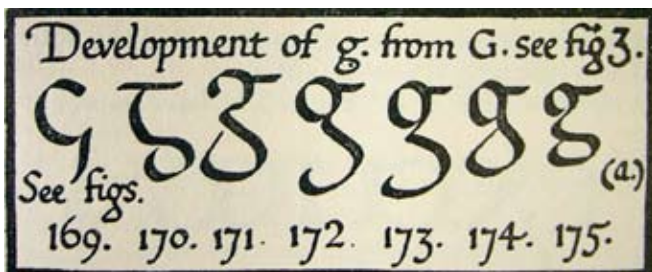


This cuneiform-like feature then became more prominent like the Full Serif version. During the third and second centuries BCE the Roman serif and sans serif forms co-existed, and like Penumbra the seriffed forms were of uniform weight. Penumbra was developed using a method known as interpolation. The Full Serif and the Sans Serif were drawn and digitized and the intermediate styles were created by computer program.

In the second half of the first century BCE, however, a monumental event occurred in the life of the roman letter. The forms became significantly more sophisticated, they were seriffed, and perhaps most importantly and mysteriously thick and thin. The 2000 year old monoline is expanded through the use of the edged writing tool. The inscription on the tomb of Cecilia Metella is an example from the early Augustan period.



How and why this transition happened is not known (although I think it is likely that cultural diffusion from Egypt played a role). In any case, the result for formal Roman writing was a complete victory for the thick and thin letter. The edged writing tool and its geometry dominated for the next 15 centuries.



This is a sequence from Edward Johnston's book, *Writing & Illuminating & Lettering* which, like the Society of Printers, enjoyed its hundredth anniversary last year. It begins with an edged-pen form, not a monoline one and shows series of changes which impart a flavor of the transitions from capital to minuscule forms.

The style of the physical form of writing is both conservative and ever changing. Raw materials for letterform change can be the result of the personalities of individual writers. These variations – in some cases it is legitimate to call them innovations – are most evident in cursive writing. If the culture

judges them favorably, they become incorporated into the usually gradual process of letterform transformation.

In the fifteenth century the introduction of printing from movable metal type brought about a drastic change in this process. The letterforms used for books started to be engraved on the end of a steel bar as the initial step in their manufacture. Punchcutting as it is called, is not writing nor is it stonecutting. Matthew Carter is shown cutting a punch.

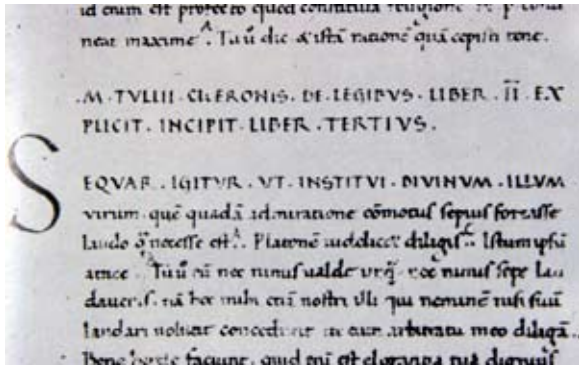


There is a significant difference in scale between engraving a punch and carving letters in stone. Stone-cut letters, before the late Roman period seem to be primarily a fixing of writing.

But the matter is actually more complex. There is also an inherent graphic tension between the Capital and minuscule letterforms which punchcutting inherited.



The capitals were laid out at on the stone with a flat brush before they were carved. These are some of the component strokes used in writing the imperial roman letter from Father Edward Catich's book *The Origin of the Serif*.



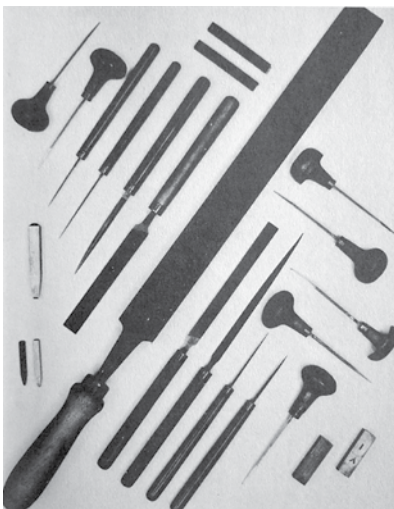
The minuscules were written with a quill pen on vellum, (or paper in the Renaissance) at relatively small size. This is an early fifteenth century manuscript by Poggio Bracciolini. ▾

These two scripts originally had quite different underlying structures. This is an explanation of edged pen geometry from Edward Johnston's *Formal Penmanship*.



The scripts were thrown together by eager humanist scribe/scholars like Bracciolini who were avid seekers of both late Carolingian manuscripts and Imperial Roman inscriptions.

The new craft of punchcutting meant a loss of contact with the underlying structure for letterforms which had been part of the scribal tradition. These are Rudolf Koch's punchcutting tools.



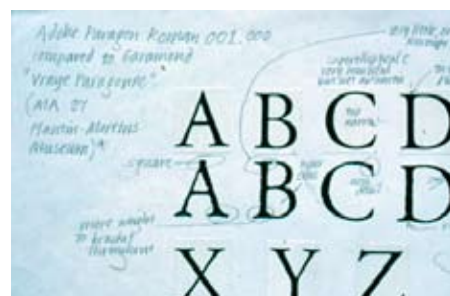
The structure of punch-cut letterforms did not benefit (or suffer depending on your point of view) from the underlying structure provided by the geometry of the tools which were used. The forms became, necessarily, more heavily influenced by mental process than by the physical qualities of the craft. The punchcutter could imitate the external characteristics of the edged pen, but he was dependent on the a graphic system for guidance rather than an underlying physical and physiological structure. To make edged-pen style letters he would have to hold them in his mind, not in his hand.

Very quickly typographic letterforms evolved away from the strict geometry of the edged pen. Punchcutters then copied the most successful typographic forms which were for a short time those of Aldus Manutius and Francesco Griffo, then for a long time those of Claude Garamond.

In making metal type it was necessary to cut a set of punches for each size. In digital type it is possible to set all sizes from a single version of the font. In my design of the Cycles type family I made different designs for some of the traditional metal sizes. The Five, Seven, Nine, and Eleven point are shown here.



The forms of Garamond were powerful enough that they have been copied up until the present day. These are early drawings for the Adobe Garamond by Robert Slimbach, critiqued by Stephen Harvard.



Stephen's cricket must be among the very first drawings made with Adobe Illustrator.



The seemingly endless copying of Garamond was finally disrupted at the end of the eighteenth century when Bodoni popularizes the rationalized letterforms of the Romain du Roi through his brilliant letter cutting and elegant typography.



The monoline letter quietly reappears on the scene at around this time. This is the well-known specimen of 1816 from the Caslon foundry.

**W CASLON JUNR LETTERFOUNDER**

By the end of the nineteenth century it has been considerably elaborated as can be seen in the specimen of American Typefounders' Philadelphia Lining Gothics from 1894.



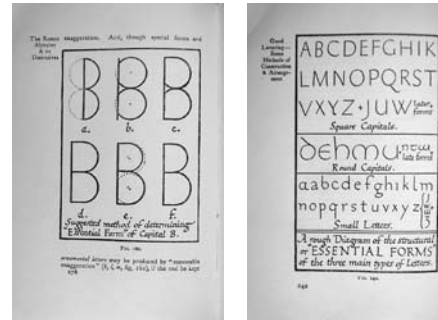
At the beginning of the twentieth century the serif and sans existed in separate realms, but there was some relationship. Hans Meier has pointed out that the structure of the

nineteenth century grotesques and their revivals like Helvetica and Univers were related to the nineteenth century seriffed forms in proportion and structure. In the twentieth century Renaissance and classical forms were revived through Edward Johnston's work and through the revival of Renaissance type designs such as Garamond and Aldus/Griffo.

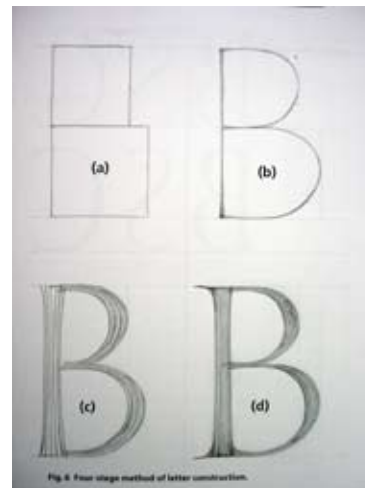
In *Writing & Illuminating & Lettering* Johnston presents his notion of the Essential Form. He says:

"The essential or structural forms are the simplest forms which preserve the characteristic structure, distinctiveness, and proportions of each individual letter. The letter craftsman must have a clear idea of the skeletons of his letters. While in each case the precise form which commends itself to him is a matter for his individual choice."

The Essential Form appears to have been rather influential as an idea. (Notice the "round capitals.")

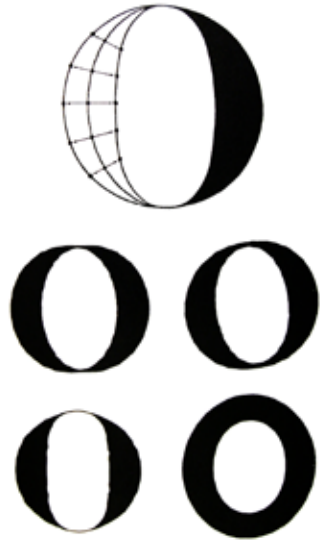


It became part of the British pedagogy for drawing Roman Capital letters as explained by Jon Gibbs in his recent article in the EJM Journal.



It was undoubtedly the source of a computer program I wrote in 1978 which was an attempt to find a general algorithm for adding weight to the Essential Forms in order to produce weighting schemes for the mainstream typographic

styles. These O's were all drawn by the program as expansions of a linear ellipse simply by entering a few parameters.



In 1913 Johnston was commissioned to design a typeface for the London Electric Railway Company. The resulting sans served as the basis for Gill Sans and a foundation for the tradition of what has come to be called the Humanistic Sans Serif.

Stone Sans, part of my first super family of typefaces, was certainly influenced by the Johnston/Gill Sans tradition. I have recently done modifications to Stone Sans which put firmly in the category. It is called Stone Humanist Sans.

Amanita Babylon Cliche  
 Darmstadt Elletricità Falafel  
 Gefüge Hyacinthus Infidel  
 Jipijapa Knockebröt Lullaby  
 Matrimonio Nibelung  
 Oolong Philosophy  
 Queequeg Ricordo  
 Saucisson Schuss Tenet  
 Übung Vivacious Warsaw  
 Yeomanry Xerxes Yoyo &  
 Zanzibar

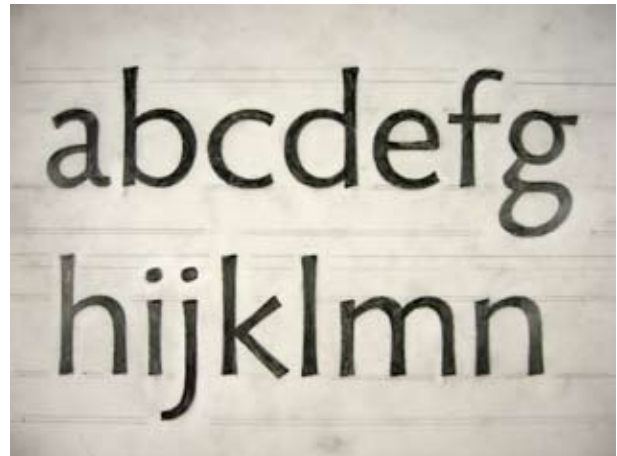
Basalt, which I designed in the early 90's is also in this tradition.



We are now experiencing a very active time in the life of the sans serif letter. Many new designs have been produced in the past few years and many more are no doubt in the works. Will Helvetica, which is now the subject of an eponymous movie, become the Garamond of the sans serifs? I doubt it, and so do many others.

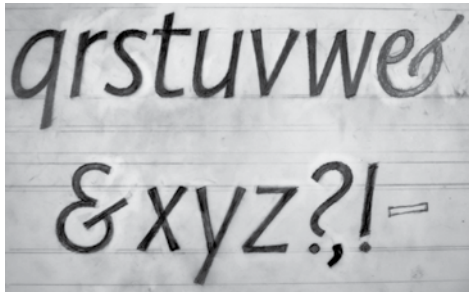
Basalt was the result of a conscious effort to create a model. Its first use was for signage at the Stanford Library. It has two sets of capitals together in a single font – normal and condensed widths. LIBRARY is in the normal version and BIBLIOTHECA is in the condensed version.

Magma is a typeface based on Basalt. These lower case drawings were the critical next step.



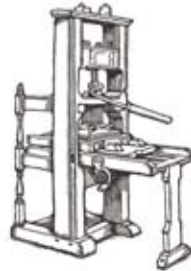
Initial cuts for the different weights of Magma, both lighter and heavier than the weight which I drew, were generated by something called "make bold" in Fontographer which is a different process than the interpolation used in designing Penumbra.

These are drawings for the italic.



This is an invitation from the Society of Printers set in Magma. It was designed by Lance Hidy and printed by Michael Russum at the Kat Ran Press.

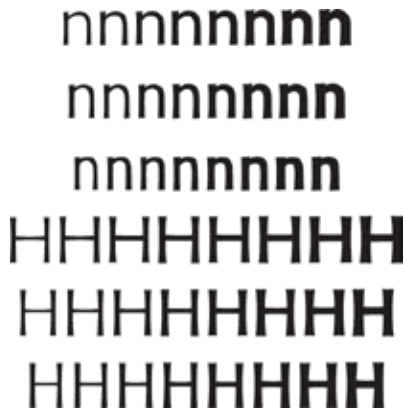
A TALK BY  
GREGORY PRINCE  
**BOOK ARTS AND  
THE LIBERAL ARTS**  
WHY BOOKS MATTER  
IN A DIGITAL WORLD  
*an explanation why  
individuals at Hampshire  
and in Five Colleges are  
interested in developing  
a cultural partnership with  
The Museum of Printing  
in the Pioneer Valley*



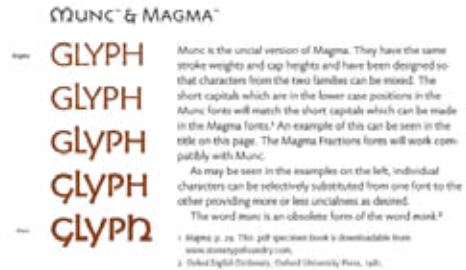
Magma Thin, yet to be released [now released].



Magma weights and condensations. The condensed and compact will be available soon [now released].



Munc is a companion to Magma. It is what Johnston called "the round forms". Magma and Munc are made so that the characters can be mixed together.



Every time I paint a sign I say it is the last time. Magma & Munc.



Leaves & Straw ornaments in use as proposals for an identity project undertaken by Michael McPherson at Corey McPherson Nash for the Concord Academy.

