

Calligraphic tendencies in the development of sanserif types in the twentieth century

Dissertation submitted in partial fulfillment of the requirements for the Master of Arts in Typeface Design, University of Reading, 2002

Abstract

Sanserif typefaces are often perceived as something inextricably linked to ideals of Swiss modernism. They are also often thought of as something as far as one can get from calligraphic writing. Yet, throughout the twentieth century and especially in the past decade or so, the design of sanserif typefaces have been consistently inspired by calligraphic writing. This dissertation hence explores the relationship between calligraphic writing and the formal developments of sanserif typefaces in the twentieth century. Although type design is an inherently different discipline from writing, conventions of calligraphic writing did and still do impose certain important characteristics on the design of typefaces that modern readers expect. This paper traces and analyzes the formal developments of sanserif typefaces through the use of written forms. It gives a historical account of the development of sanserif typefaces by charting six distinct phases of sanserif designs that were in some ways informed by calligraphic writing:

- Humanist sanserifs: Britain 1900s
- Geometric sanserifs: 1920s–30s
- Contrast sanserifs: 1920s–50s
- Sanserif as a book type: 1960s–80s
- Neo-humanist sanserifs: 1990s

Three primary ways to create calligraphic writing, namely the broadnib pen, flexible pointed pen and monoline pen are studied and lineages drawn to how designers imitate or subvert the conventions of these tools. These studies are put into historical perspective and links made to the contexts of use. The focus of this dissertation is on typefaces that are generally known as ‘humanist sans’; grotesques and neo-grotesques are not included in the discussions.

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KEITH, 2 SEPTEMBER 2002

Colophon

Continuous text set in ITC Charter (designed by Matthew Carter) with captions in Bitstream Gothic 720. Typeset in Adobe InDesign 2.0 on the Macintosh.

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Introduction

There is perhaps no better typeface that epitomizes the notion of sanserifs than Helvetica. Designed by Max Miedinger in 1956 and released by the German foundry D. Stempel AG in 1961, Helvetica was made one of the most ubiquitous typefaces of the past half-century by the pervasive influence of Modernism, and in particular the Swiss 'International Style' of typography. Sanserifs, more specifically neo-grotesques such as Helvetica, became synonymous with modernity. Consequently, there exist a common misconception that sanserif letterforms are something as far as one can get from calligraphic writing, while it is widely known that the development of serified roman typefaces was greatly influenced by calligraphy. In fact, Neo-grotesques only afford a narrow view of the large diversity of sanserif typefaces that were inspired by a multitude of historical or ahistorical sources. Contrary to the common presumption that sanserif letterforms must evoke modernism, quite a number of sanserif typefaces designed in the past century were in fact also designed along calligraphic lines. In the past decade or so, sanserif typefaces inspired by calligraphic writing seem to be on the increase.

This dissertation will discuss the calligraphic tendencies of the development of sanserif typefaces. Inasmuch as typography is defined as 'mechanized writing', it must first be acknowledged that type design is an inherently different discipline from writing. Yet, the conventions of calligraphic writing did and still do impose certain important characteristics on the design of typefaces that modern readers expect. Hence this paper will trace and examine the formal developments of sanserif typefaces by describing and providing explanations for their forms through written forms. A chronological account of the development of sanserif typefaces – with an emphasis on the twentieth century developments – will form the basis of this dissertation. The principles of the three typical western writing tools – namely the broadnib pen, the flexible pointed pen and the monoline pen – will be explored. These studies will be put into historical perspective and links will be made to the contexts of use. The focus of this dissertation will be on typefaces that are generally known as 'humanist sans'; grotesques and neo-grotesques will not be dealt with here.

Sanserif defined

It seems desirable to first clarify what the term sanserif is meant and how sanserif typefaces are classified. As Ole Lund points out in his paper *Description and differentiation of sanserif typefaces*, the term ‘sanserif’ seems to imply something rather negative, something that is lacking, ‘as if the starting point necessarily has to be a letterform *with* serifs’.¹ Walter Tracy on the other hand finds merit in this term but still finds it somewhat problematic. ‘The term sans-serif, coined by Vincent Figgins in 1832, is at least accurate, even though it expresses a negative characteristic. “Lineal”, recently recommended in Britain, is a little more descriptive, but it has not become popular’.²

That brings us to the question of monolinearity. In his paper, Lund focuses solely on monolinear sanserif typefaces, while Walter Tracy also only classifies strictly monoline typefaces as sanserifs in *Letters of credit*. The term ‘sanserif’ might therefore be somewhat of a misnomer: it not only denotes letterforms that do not have serifs, but more importantly it also denotes typefaces that do not have apparent thick-thin modulations. This preoccupation with monolinearity was particularly strong in the early part of the twentieth century. Edward Johnston’s railway type is a classic example in this regard. Although Johnston was determined to make a ‘block’ alphabet based on the humanist calligraphic tradition, he did not attempt to replicate the thick-thin modulations of the broadnib calligraphic pen.

There are also grey areas in the categorization of sanserif typefaces. Faces such as Optima and Pascal might not be classified as sanserif typefaces according to certain classification systems, because they have small residual or ‘flare’ serifs.³ Lund also points out in his paper that ‘most classification systems for typefaces do not allow for differentiation among sanserif typefaces’.⁴

It can be seen that the term sanserif is rather problematic. Nonetheless the term sanserif will be adhered to for its literal as well as its generally accepted meaning – that is, the noticeable absence of serifs in the letterforms. This dissertation will thus include all forms of typefaces without serifs, whether monolinear or with thick and thin modulations. The priority is given to the absence of serifs here, not apparent monolinearity.

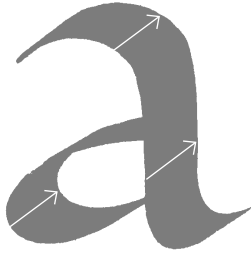
1 Lund: *Description and differentiation of sanserif typefaces* p.5

2 Tracy: *Letters of credit* p.85

3 For example, the British Standard 2961 system of 1967 did not classify Optima or Pascal as ‘Lineale’ (sanserif) typefaces, but were instead grouped into the ‘Glyphic’ category. Lund p.15

4 Lund p.12

Principles of written forms related to type design



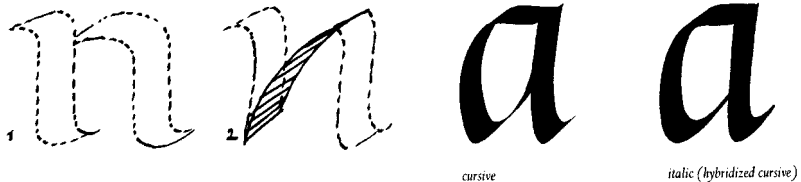
1 Translation contrast, broadnib pen held at a constant angle. Contrast governed by the width of the pen.

Calligraphic writing

It is obvious that writing naturally predates typography, or the mechanization of writing. Writing with a broadnib pen, which produces logical and somewhat mechanical lines with thick and thin transitions, forms the basis – as well as the mainstream – of western calligraphy **1**. Gerrit Noordzij, who has written extensively on the theory of calligraphy, uses the term ‘translation contrast’ to describe broad-pen writing in his book *The stroke of the pen*. Translation contrast formed the foundation for the development of oldstyle roman typefaces such as Garamond. These oldstyle roman typefaces were originally derived from humanistic roman and italic writing, though the italic underwent some changes when it was regularized to harmonize with the roman as an ancillary type. Italics are not simply characterized by the slopes, but by a variation on their essential forms. For example, the *a* and the *g* are often single-story and there are upstrokes – it is cursive **2**. Though the more formal italic hands do not have upstrokes – what Noordzij calls ‘hybrids’ **3**.

2 Comparison of Roman (only downstrokes) and italic (with upstroke)

3 Cursive and hybridized cursive italic forms

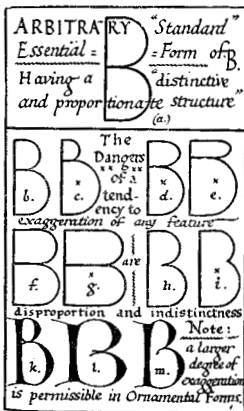
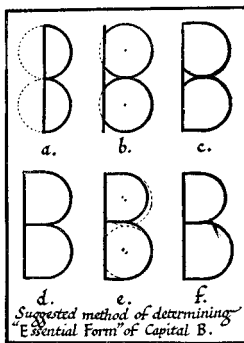


4 Expansion contrast, using a flexible, pointed nib. Thicks and thins produced by varying the pressure exerted on the pen.

Another stream of calligraphic writing, done with a flexible pointed pen, was first practiced by the Italian writing master G F Cresci during the sixteenth century as a variation on the chancery italic theme and later used as a commercial hand. Varying the pressure on the flexible pen nib produces the thick and thin transitions **4**. The upstrokes are thin while the downstrokes are thick. This is what Noordzij calls ‘expansion contrast’. The expansion principle then formed the theoretical base for transitional and subsequently the Modern romans such as the types by Firmin Didot.



5 Monoline lettering. No thick-thin transitions.



6 Edward Johnston's method of determining the essential form of a capital B and his demonstration of its different variations.

The most elemental form of writing is done with the simplest of tools. The conceptual idea behind all forms of calligraphic writing is their skeletal forms. This could be elaborated to mean monoline writing – writing done with a pen producing lines of consistent thickness, typified by the modern ‘ballpoint’ pen 5. It is therefore a neutral tool that gives the concept of the letters proportions, the ‘bare bones’ of the letterforms.

Skeletal forms of letters

Regardless of what tools we use to execute our letterforms, the skeletal forms are letters at their most basic. Before one commits pen to paper, a basic understanding of those letters as archetypal forms, or notional skeletal forms, must exist in the writer’s mind. Edward Johnston writes in his calligraphy manual *Writing & Illuminating, & Lettering*, ‘[t]he essential or structural forms [...] are the simplest forms which preserve the characteristic structure, distinctiveness, and proportions of each individual letter’.¹ He continues, ‘[t]he letter-craftsman must have a clear idea of the *skeletons* of his letters’.² He then follows with two illustrations demonstrating a method of determining the essential form of a capital B 6. Johnston stresses that distinctiveness and legibility will suffer if any features are exaggerated unnecessarily. But he also points out that it is quite permissible in ornamental letterforms. In order to keep within the bounds of typographic conventions and readers’ expectations when they read a text, it is essential to keep these notional skeletal forms in mind and not deviate too much from them. The novelty forms of the B in the illustration show letterforms that are frequently found in display typefaces, not typefaces for the setting of continuous text. The structure of humanistic writing forms the basis for the proportions of our typefaces:

[...] an underlying feature of the pen-written humanistic forms that seems even more basic than shading and serifs is the essential linear form of the letter. Imagine the forms traced out by a single point on the edge of the edged-pen (e.g., the midpoint). These are the essential forms of the given alphabet.³

Built-up letters

Built-up letters is what we have to contend with when designing type. But built-up letterforms existed long before printing type and were integral to the domain of lettering. Noordzij writes, ‘[i]n built-up letters there is no characteristic relationship between the tool and the shape of the letter’.⁴ Built-up letters have the ability to imitate and override the traditional conventions of calligraphic writing.

1 Johnston: *Writing & Illuminating, & Lettering* p.239

2 Ibid.

3 Stone: ‘Hans Eduard Meier’s Syntax-Antiqua’ p.22

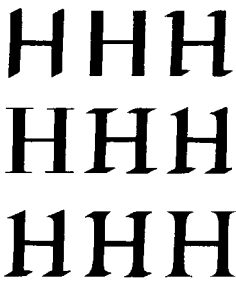
4 Noordzij: *The stroke of the pen* p.7

Two ways of making sanserif letterforms

There might be two ways of making sanserif letterforms at the beginning of their history. One useful way to understand the making of the sanserif letterforms is by writing the notional skeletal forms of the letters with a monoline tool. Since the skeletal forms of the letters are letterforms at their most basic, it was almost natural that the history of writing began that way. Ancient Greek writing was done with blunt reeds before it became more ‘sophisticated’ and written with a broadnib during Roman times. The monoline mode of writing is therefore arguably central to the beginning of the sanserif letterforms. Simple sanserif letterforms are created by adding even weighting to the skeletal forms.

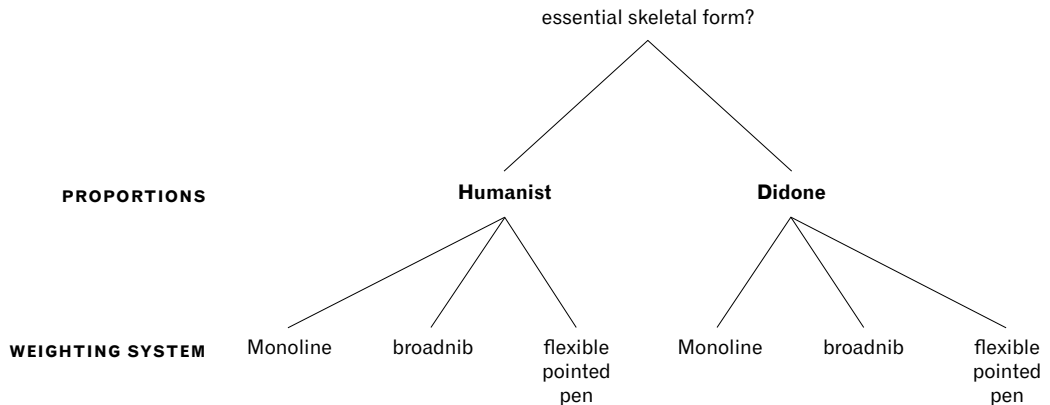
Another way of acquiring sanserif letterforms is by ‘knocking serifs off’, so to speak. Indeed, the very term ‘sanserif’ suggests this method. The first ‘grotesque’ letterforms were indeed derived from the ‘fat faces’ (a development from the idiom of writing with a flexible pointed pen), by their sheer proportions (the widths of the letters are more condensed and equalized). Serifed letterforms, typified by writing with a broadnib and later flexible pointed pen, seems to be a rather long-winded diversion to take to arrive at the sanserif letterforms. However, sanserif letters can also be created by directly using a broadnib pen – serifs are not a requirement when writing with a broad-nib pen. Figure 7 illustrates the degree to which the beginning and ending of the broadnib calligraphic stroke could be varied. It could be seen that the oblique cant of the broadnib pen could be exposed or hidden.

Some Serif Variations



7 Variations of stroke endings possible when writing with a broadnib pen.

The following diagram summarizes conceptually the decisions to take for the making of sanserif letterforms. However, we have complete freedom to mix and match when designing typefaces, and more often than not typefaces are hybrids of two or more elements, and it would be likely that the calligraphic notions we are describing here are subverted.



Criteria for assessing the influence of calligraphic writing

When assessing the calligraphic influence of sanserif typefaces, the following criteria are to be considered:

Proportions. Whether the capitals are constructed along Roman proportions or are similar widths, or a mix of both. Whether the lowercase are constructed in accordance with the proportions of calligraphic scripts – in particular the humanist bookhand – or condensed/expanded.

Whether the strokes are monoline (even width) or modulated (with thick-thin transitions). This can be explained in terms of what writing tool the designer was trying to imitate.

Angles of stress or axis of contrast. Whether the axis of contrast is oblique (reminiscent of humanistic writing), vertical (modern romans) or a mixture of both (transitional).

Accompanying italics. Whether the accompanying italics are suggestive of cursive forms (for example Chancery italic), simply skewed romans, or hybrids (semi-cursive).

Terminals. Whether the terminals are angled, orthogonal, horizontal/vertical, or a combination of these. The terminals might suggest the kind of writing tool that the designers are attempting to imitate or rid from.

Prologue: Nineteenth century sanserifs

Background

Although sanserif letterforms existed long before the invention of printing, the history of sanserif letterforms as printing types did not begin until the Industrial Revolution in England. At the dawn of nineteenth century, something quite unprecedented happened in the typographic world – something that came to be known as non-linear reading. The rapid growth of the manufacturing industry and the bustling economy was propelled by the Industrial Revolution that began in the latter part of the previous century. This facilitated the emergence of two new forms of typographic communication – the poster and the handbill. Traditional book typefaces such as Baskerville and Caslon were initially used for these, but were quickly proved to be inadequate to cope with the increasingly fierce competition. New forms of typefaces were clearly needed to grab the attention of viewers on the street. One obvious solution to this communication problem was to make the type as bold as possible. ‘[...] the need for bold type related to what might be described as the growth of non-linearity in graphic design’,¹ writes Michael Twyman. Three main varieties of display typefaces subsequently emerged during the first two decades of the nineteenth century. They were, in order of appearance the fat faces, sanserifs (more generally known as grotesques or antiques) and slab-serifs (widely known as egyptians or antiques). Of these three groups of display typefaces the sanserif, has been the most enduring, which eventually found its way to becoming the icon of Modernism in graphic design.

William Caslon iv: the first sanserif printing type

The first sanserif printing type was one that was confusingly known as ‘Egyptian’, appeared in an 1816 specimen of the English typefounder William Caslon iv 8. It was a font of medium weight capital letters that was only made in a single size of about twenty-eight point. This description seems contradictory to the growing needs of bold type described in the previous paragraph. ‘It is, in fact, a type of very little value to a jobbing printer’,² writes Tracy. It is not surprising that this type was not used by many. Both Mosley and Tracy speculate that it was made to a supplied design for a special order. Tracy adds that it was just ‘happened to be ahead of its time’.³ Many an author would like to have us believe

1 Twyman: ‘The bold idea’
p.112

2 Tracy p.86

3 Ibid.

8 William Caslon IV's Two Lines English Egyptian, appeared in 1816 along with other more decorative display type.

CANON ITALIC OPEN.

CUMBERLAND.

CANON ORNAMENTED.

TYPOGRAPHY.

TWO LINES ENGLISH EGYPTIAN.

W CASLON JUNR LETTERFOUNDER

TWO LINES ENGLISH OPEN.

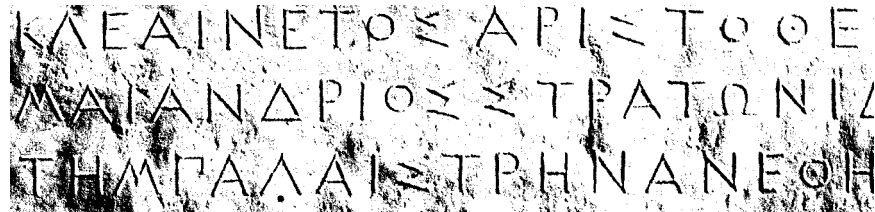
SALISBURY SQUARE.

that Caslon's first sanserif type was the immediate descendant of the next sanserif creation fourteen years later – Vincent Figgin's 'sans-serif' from c1830 10. However, it seems obvious that Caslon's 'Egyptian' bears no direct genealogical relationship to the later 'grotesques'.

Nevertheless, Caslon's sanserif was quite an innovation at the time for a printing type. It was the first *roman* printing type that was entirely monoline¹ and without serifs. These two distinguishing characteristics formed the mainstream of what sanserif typefaces came into being.

There are many speculations as to where this isolated example of sanserif type came from. One of which would be that it was derived from ancient Greek inscriptions 6. They both share similar proportions (the Roman

9 Ancient Greek inscription. A dedication of the Palaestra Naukratis, c3rd Century BC



1 According to Mosley, William Caslon cut a monoline, unserifed Etruscan type c1745 and a stressed but unserifed Greek was probably cut in the seventeenth century in England. pp.18–19

2 See Gray: *Sanserif and other experimental inscribed lettering of the early Renaissance*

3 Mosley: *The Nymph and the Grot* p.10

4 Mosley p.38

capitals were direct descendants of these) and are both monoline. Another speculation would be that it came from early nineteenth century experimental inscriptional lettering on medals,² or even signwriting. James Mosley points out in his *The Nymph and the Grot*, although the sanserif letter did not manifest itself as a printing type until 1816, sanserifs were already in wide use in the domain of lettering during the first decade of the nineteenth century,³ and that the term 'Egyptian' was a widely accepted term denoting sanserif letters in the signwriting trade.⁴

Industrial Grotesques: 1830 onwards

In 1930, Figgins released his first capitals-only sanserif type. This type bears no relationships to Caslon's 'Egyptian' and the lineage to antiquity was completely wiped out. It was clearly a type that had a rather different mission: a type destined to join force with the fat faces and the slab-serifs to grab attention. Unlike Caslon's type, Figgins sanserif had thicks and thins, and the most distinguishing feature is the widths of the letters – they follow the proportions of modern romans. Geoffrey Dowling writes, '[...] most of the early sans serifs were titlings, with letters of monotonously uniform width, this trait, of course, deriving from the "modern" face'.¹

10 Vincent Figgins's Two-line great primer Sans-serif, 1830.

TWO-LINE GREAT PRIMER SANS-SERIF.

**TO BE SOLD BY AUCTION,
WITHOUT RESERVE;
HOUSEHOLD FURNITURE,
PLATE, GLASS,
AND OTHER EFFECTS.
VINCENT FIGGINS.**

11 First sanserif lowercase, William Thorowgood, 1834.

Seven line Grotesque

MENINGHURNE
mountainous

However, A F Johnson claims that the sanserifs were created by knocking off the serifs from the Egyptians (slab-serifs).² When compared, it is not difficult to see that these early sanserifs were derived from the fat face, a direct descendent of the Modern roman face. Some of these sanserifs were very condensed 11, in order to fit as much information into a space as possible. As a result, circles became two vertical strokes with rounded tops and bottoms. Eric Gill criticized this approach and was demonstrating a more legible alternative in his *An essay on typography* 12.

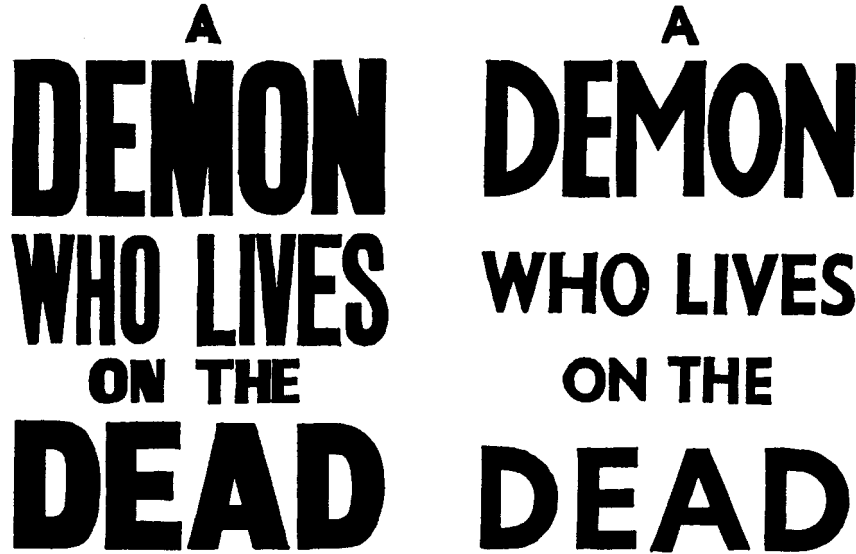
1 Dowling: *An introduction to the history of printing types* p.179

2 Johnson: *Type designs* p.159

12 Eric Gill's demonstration of how to make grotesques more legible.

Left 'a reduced copy of a "John Bull" poster. It shows how the desire to arrest attention by making the letters as black as possible defeats the object of the poster, i.e. quick legibility. For from a short distance the letters are indistinguishable.'

Right 'shows a poster letter designed to give the maximum blackness compatible with quick legibility and a rational differentiation between the letters, e.g. the D & O.'



This type of sanserifs dominated the market for the rest of the century. They fulfilled their function perfectly and eventually drove out the fat faces and the slab-serifs. However, they were nothing more than what they were intended to do – to attract viewers' (as opposed to readers) attentions at display sizes and to pack as much information as possible within a limited amount of space. This function, arguably, could only have been achieved by forsaking calligraphic conventions. Hence the development of the grotesques took a course of its own, and it is hence omitted here.

Humanist sanserifs: Britain, early 1900s

As discussed in the previous chapter, apart from the slight lineage of antiquated inscriptions in the first sanserif type and the rather negligible trace of flexible pointed pen calligraphy found in the subsequent grotesques, the force of calligraphic writing was virtually dormant on the development of printing types, sanserif or otherwise, for the rest of the nineteenth century. It wasn't until the advent of the twentieth century when humanist writing began to have any influence at all on the development of sanserif types.

At the dawn of the twentieth century, Britain saw the Arts and Crafts movement, headed by such figures as William Morris and John Ruskin. Living in a world rife with mass-produced goods and commercial vulgarity in twentieth century Britain, Morris and Ruskin yearned for the simplicity of life and immaculate craftsmanship of the Middle Ages. Kelmscott Press, set up by Morris five years before his death, printed beautifully decorated books with types designed by Morris, breathed an air of freshness over the what was considered by some declining aesthetic quality of commercial printing at the time.

Edward Johnston: Railway Sanserif

A master calligrapher who followed the idiom of the Arts and Crafts movement, Edward Johnston was responsible for the revival of calligraphy in Britain, and had raised its status from a craft to an art form. His influential instructional manual on the subject, *Writing & Illuminating, & Lettering*, first published in 1906 has served as a standard calligraphy textbook for over a century. In his book he advocates the 'qualities of good writing' including readableness, beauty and character.

Although not considered even by himself as a type designer and resisted the idea of mechanical production, he did cause a phenomenal effect on the development of printing type, notably the sanserif. He undertook Frank Pick's commission to design an 'alphabet' for the exclusive use of the London Underground system for its station nameplates and posters. Part of Pick's brief was to create a type that would be authentic and also 'belong unmistakably to the twentieth century'.¹ The final type fitted this brief completely no doubt, and its effect was profound; for it was Johnston who was responsible for popularizing the sanserif letterform in the twentieth century.² Johnston's design was in many ways a groundbreak-

1 Howes: *Johnston's Underground Type* p.26
A quote from Priscilla Johnston's *Edward Johnston* 1959.
2 Twyman: *Printing 1770-1970* p.75

ABCDEFGHIJKL
 MNOPQRSTUVWXYZ
 WWWXYZ&QU
 abcdefghijklmn
 opqrstuvwxyz
 £1234567890
 .,:;?!()''''!*/

13 William Caslon IV's 'Egyptian' and Johnston Sans's capitals compared.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ

ing one. Eric Gill was quoted in Colin Banks's book *London's Handwriting*, 'It was a revolutionary thing... it redeemed the whole business of sans serif from its nineteenth century corruption'.¹

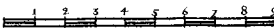
Johnston's capitals are remarkably similar to the first sanserif type by Caslon IV, although Johnston's are more refined. He based his capitals on classical Roman proportions. Johnston was advocating the use of the proportions of Roman capitals for calligraphy in his *Writing & illuminating, & lettering*:

The Roman Alphabet is the foundation of all our alphabets [...]. And since the full development of their monumental forms about 2000 years ago, the Roman Capitals have held the supreme place among letters for readability and beauty. They are the best forms for the grandest and most important inscriptions, and, in regard to lettering generally, a very good rule to follow is: *When in doubt, use Roman Capitals*.²

14 Alphabet from the Trajan Column inscription in Rome, c144 AD. Drawn from a photograph by Eric Gill.

A B C D E F
G I L M N O P
Q V R S T X




Inches 

1 Banks: *London's Handwriting* p.14

2 Johnston p.233

I.
 b c d f g h i l m n o p q r u x
(det. adds) (There is also in the original a hooked variety of m n & r)
 These 16 letters are practically identical with the forms of the originals, but are made LIGHTER in proportion: UPRIGHT (instead of slightly slanted); SHARP-HEADED* (instead of blunt) }
 LETTERS COPIED FROM A 10TH-CENTURY ENGLISH MS. { HARL. MS. 2904 Brit. Museum } SLIGHTLY Modified }
 a e s t forms suggested for modern use instead of { a e s t forms in 10th Century Original (survivals of Early Capital Character a e s t) } j k v w y z SIX additional letters made to match.

CONSTRUCTION OF "SLANTED-PEN" HANDS:

1. The position of the thick and thin strokes is approximately thus —  It may be varied for different hands, but in any one hand should be nearly constant.
2. The STRONG oblique stroke should generally be emphasized & dominate the curves; the WEAK oblique stroke should generally be suppressed and show only as a point.
3. The letters are practically uncoupled and their foot-hooks — as in the 10th. C. MSS. — are SMALL, HEAVY finishing-strokes (see *fet* of dhi &c.), except in T & L where the hooks are essential parts (cf. L.T. with their originals L.T.).

DEVELOPMENT OF "SLANTED-PEN" HANDS:

This writing of the 10th. Century is derived from the early Roman (and Half-Uncial) forms modified by the French 9th. Century "Caroline" hands * (to which it is closely related).

Et luminare minus: ut p̄-ēēē. nocti. estellas
EX. CAROLINE RIS. *

and it is representative of the ancestral type from which have been developed THREE distinct and important TYPES — (two of which may be regarded by us as permanent),

black letter (The early forms of this in Eng. & Ital. 12. C. MSS. are the best to study) and italic and "roman" small letters



II.
 a b c d e f g h i j k l m n o p q r s t u v x y z

AN ITALIC HAND directly derived from the Foundational hand (I.) above. The chief characteristics of the ITALIC HANDS are 1. lateral compression, 2. branching of the parts (n u &c.). Secondary characteristics are 1. Elongated Stems, 2. a slight SLOPE (This latter, probably the least essential, has been unduly exaggerated in modern use).

This example is made heavy to show the control of the pen (see General Note): Various characters can be developed from it by (a) making lighter (b) making rounder (c) lengthening stems (d) flourishing e.g. *bd h k sp* (semi-formal 16th. Century) (e) coupling the letters (in less formal varieties)

III.
 a b b c d e f g h i j k l l m n o p q &
 r s t u u v w x y z & 1 2 3 4 5 6 7 8 9
(made with a "slanted-pen", for any of these hands)

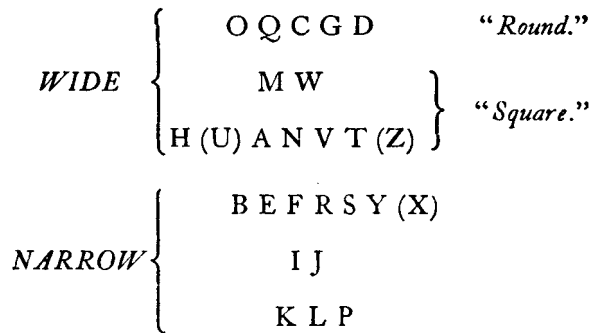
A ROMAN-SMALL-LETTER HAND derived from the Foundational hand (I.) above, and assimilated to the Italian Formal 15-16 Century MSS. Various characters may be developed from this example by varying the weight & direction of PEN (e.g. the roman in plate 14; qv, is a nearly straight-pen type).

GENERAL NOTE § A very broad nib strongly controls the letter & tends to give it a "gothic" character — due to the abrupt change from thick to thin —  A narrow nib is more under the control of the writer and its (gradually changing) stroke will give a more "roman" character to letters (the height being equal) 

15 'Slanted-pen' small-letters, by Edward Johnston
 I. Foundational Hand: an excellent formal hand for MS.
 II. Italic Hand: a rapid and practical hand for modern MSS.
 III. Roman-Small-Letter Hand: suitable for modern MSS.'

Johnston goes on to suggest his readers to study the Trajan Column inscription 14, and should ‘endeavour to embody its virtues in a *built-up pen form* for use in [manuscripts]’.¹ The proportions he proposes are summarized as follows:

16 Proportions of Roman capitals according to Edward Johnston



However, when he drew his sanserif type for the Underground, he chose to make the *E*, the *F* and the *L* – which should be narrow letters – slightly wider. This overriding of traditional calligraphic forms could be attributed to Johnston’s admiration of the Caslon Old face type 17. Harry Carter writes: ‘It [Johnston’s sanserif] is a member of the old-face family of types. Based on Roman inscriptional models, the essential form of the letters is the same as Jenson’s or Caslon’s: only the fashion of them has been dictated by function’.²

17 Capitals of Caslon Old face. ‘[C]ast from the original punches cut up William Caslon about 1720. This type is one of the best in modern use. *It should be remembered that the originals of all “lower case” forms of type were pen forms resembling the foundation hand [...].*’

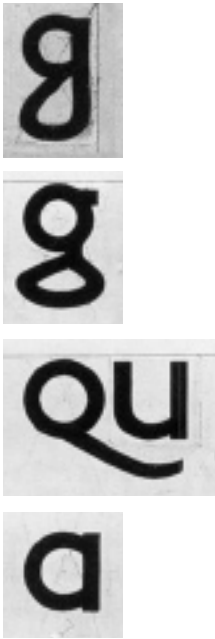
A B C D E F G H I J K L M N O P Q
R S T U V W X Y Z

For his lowercase, it was only natural that Johnston began from the humanist Bookhand that he had been studying and so fervently an advocate of 15. This point of departure was unique in the history of the sanserif.

Although the structural forms of Johnston’s letters were based on humanistic proportions, he translated these forms into a monoline type with the aid of geometry. The basis for the lowercase is a perfectly circular *o*, with other letters using segments of this circle, for example the *c*, *n*, *m*, etc. One of the most distinct calligraphic derivations is the hooked lowercase *l*, which provides a clear distinction between the uppercase *I* and the numeral *1*.

1 Johnston p.233

2 Carter, Harry: ‘Sanserif types’ pp.41–42



18 Alternate forms Johnston explored for his railway sanserif type.

Johnston explored several alternative forms of letters in the early drawing stage of the typeface. He was attempting to translate his rather ornate calligraphic forms into monoline ‘block-letters’ 18. He also experimented with a single-storey *a*. However they did not survive in the final type, except the obviously calligraphic diamond-shaped dot above the *i* and the *j*, the full-point and the tapered comma.

Johnston’s method of calculating the weight-to-height proportions was quite unheard of in type design. As for his calligraphic work, he measured the x- and cap-heights of his typeface with the number of stem widths. The cap-height had a ratio of 1:7 while the x-height was 1:4, exactly the same as his Foundational hand.

The terminals were reduced to simply horizontals and verticals, in order to keep the counters open. This was an answer to Pick’s request in the brief for the type to be ‘clear and open’ so that it remains legible under dim lighting at the stations.

Although Johnston’s design won much acclaim, he worked in a craftsman-like fashion and failed to consider some essential aspects of type design. One of which was the direct translation of the ‘skeleton letters’ without compensating for optical illusion. Walter Tracy, who consulted on a new version of Johnston Sans in 1973 writes:

[...] he appears to have been unaware of some fundamental aspects of letters designed for type. One of these is particular to sans-serif types... the percept that in a “block letter” type the strokes should *appear* to be of an even thickness, but should actually be modulated in thickness so as to achieve proper balance between the parts of a letter and between one letter and the next. In the Johnston type, however, the strokes are of uniform thickness.¹

Tracy also criticized Johnston’s method of measuring the height for the type with the number of stem widths. He claims that while this method works well for calligraphic writing, it does not apply to type design. Johnston’s calligraphic mannerisms were further criticized by Harling: ‘Edward Johnston’s design, a breakaway from the nineteenth-century grotesques, was clean-cut but affected by one or two intrusive mannerisms, particularly the lower-case *l*, and the diamond-shaped dots over *i* and *j* were odd, to say the least’.²

Despite the shortcomings of Johnston Sans and its limited exposure as a private type, its innovations nonetheless provided a unique exemplar for the development of later sanserif types. Until the arrival of Johnston Sans, typographic critics and historians had often been quite disdainful

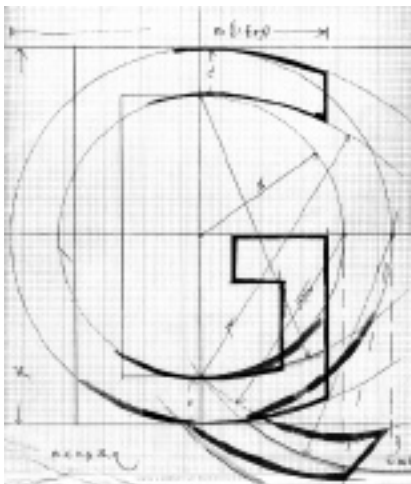
1 Banks: *London’s handwriting* p.30

2 Harling: *The letter forms and type designs of Eric Gill* p.36

to the nineteenth century grotesques. This was partly due to the almost obscene boldness and narrowness of these typefaces but mostly because of their disregard of the traditional proportions of roman letterforms. One of these critics was Stanley Morison. Following the successful experiment of Johnston's sanserif type for the Underground Morison saw merit in sanserif letters that are based on the proportions of humanist calligraphic writing. He was convinced that even the utilitarian sanserif could be made in a pleasing way, and consequently asked Eric Gill to design a sanserif typeface for the Monotype Corporation.

Eric Gill: Gill Sans

Eric Gill was a prolific craftsman and a student and friend of Johnston. His Gill Sans, designed for Monotype, owes much to Johnston Sans, but its influence in the design world was much greater than that of Johnston's. Unlike Johnston, who was clearly a craftsman, Gill was also interested in designing letters for machine reproduction – type design and typography. His book *An essay on typography* has been influential in the field of typography. In it, Gill acknowledges the historical precedence of Johnston Sans but writes that his own Gill Sans was an improvement upon Johnston Sans. Granted, he did rectified many problems found in Johnston Sans. He took a more sober and rational approach and tried to undo much of the calligraphic mannerism without losing the humanistic roots.



19 Eric Gill's drawing on graph paper showing the geometric construction of several capital letters.

Gill built on Johnston's established monoline forms but made some essential adjustments to them to make the type *appearing* to be monolinear instead of strictly monolinear. The joints where a curve meets a vertical stem were slightly modulated to prevent them from becoming too dark. This feature was also found in the nineteenth century grotesques. The diamond dots were replaced by the simpler round dots, eliminating the trace of the broadnib pen. Gill also experimented with a geometrical approach, drawing letters on a fine graph paper with compass and straight-edge **19**.

Gill originally had the idea of having obliquely cut terminals for the ascenders and descenders, an explicitly calligraphic feature attempting to show the cant of the broadnib pen. This idea was abandoned when the Monotype Corporation took over the drawings (comparison, **20** & **21**). His original drawing of the *a* was quite restrained and was rather similar to Johnston's, but the final version shows a much more calligraphic form: it has a finial. The *b*, *d*, *p* and *q* in his original drawings were unique in that the bowls join directly to the stems. This trait is indeed calligraphic, but the logic of the pen would only allow it to happen in the *b* in calli-



20 Eric Gill's original drawing of Gill Sans.

A B C D E F G H I J K
 L M N O P Q R S T W
 X Y Z a b c d e f g h i j k
 m n o p q r s t u v w x y

21 Monotype Gill Sans as released.

graphic writing. Gill was attempting to undo his calligraphic influence by overriding the conventions of the pen. He sought to standardize certain features of his letterforms by through a modular approach. However Monotype followed a more conventional route in the final version. Most digital cuts of Gill Sans have followed this version, but the recent release of Monotype Gill Sans has brought back many of Gill's original ideas.

Gill also drew an italic, which was the first sanserif italic that referred to humanist italic writing as a model ²². The forms of Gill's italic was nat-

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz

²² Monotype Gill Sans italic.

urally condensed, akin to its written counterpart: whereas the roman o is based on a perfect circle, the italic is based on an oval. The inclination is slight, with primarily semi-cursive forms. It is fairly apparent that Johnston's calligraphic influence is at work here. The joints in the letters *a b d h m n* and *q* do not show the upstrokes commonly found in cursive italic writing. The branching in *b h m* and *n* are high while the lower joints of *a*

II.
 abcdefghijklmnopqrstuvwxyz

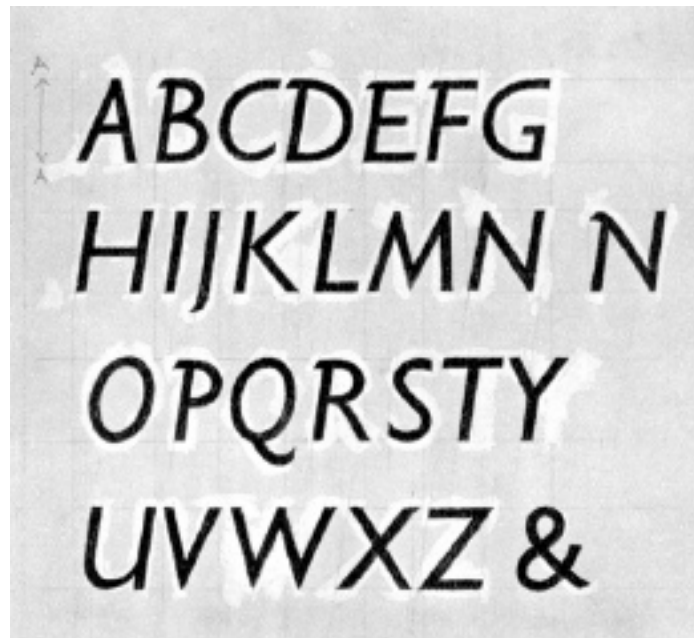
²³ An example of Edward Johnston's italic hand.

d and *q* are low. This reflects Johnston's rather formal italic hand without upstrokes which is less cursive ²³. Curiously, though, the *p* is excessively cursive. While the *a* is single-storey, closely following the conventional forms of the script, the *g* in the final version is double-storey. In the early stages of its development, Gill's italic showed more exuberance and some the capitals even had entry strokes protruding in the top left corners ²⁴. These were obviously eliminated in the final version.

The release of Gill Sans onto the market in 1929 was rather untimely. Futura, a geometric sanserif designed by Paul Renner and released by the German foundry Bauer, had already been on the market for two years and gained immense success on the continent. Harling writes, '[...] in its final form *Gill Sans* proved superior to all others available to printers

and typographers who might be interested in having a sans serif type that was not a dehumanized, wholly mechanistic alphabet'.¹ That was perhaps true in Britain, but regrettably the tastes of the continental and North American markets proved to be otherwise. The aesthetics of the machine was greatly revered at that time. The release of Renner's Futura, coupled with the release of Jan Tschichold's hugely successful book *Die neue typographie* (The new typography) in the following year, quickly ignited the spark of Modernism in typography, and had attracted many keen followers.

24 An early drawing of the capitals for Gill Sans italic.



Geometric Sanserifs: 1920s–30s

In his seminal *Die neue typographie*, published in 1928, Tschichold strongly advocated the use of sanserif typefaces: ‘[...] it must be laid down that sanserif is absolutely and always better’.¹ However, he was rather critical towards sanserifs that were inspired by humanist writing: ‘[t]here is no doubt that the sanserif types available today are not yet wholly satisfactory as all-purpose faces. The essential characteristics of this type have not been fully worked out: the lower-case letters especially are still too like their “humanistic” counterparts’.² This is clearly a condemnation of faces such as Gill Sans. He continues, ‘Paul Renner’s Futura makes a significant step in the right direction’.³ Nothing could have provided better publicity for the Futura type than the author of the handbook of the Modernist movement.

Renner certainly wasn’t the first designer to pursue the geometrical sanserif idea, but the effect of his Futura was indeed the most pervasive. The success of the humanistic sanserifs of Johnston and Gill in Britain prompted some German designers to explore new directions for their sanserif designs. By that time Germany already had the tradition of developing grotesk sanserifs for text use, most notably Akzidenz Grotesk, released by the Berthold Foundry in 1898. Instead of directly adopting the humanist sanserif idea, German designers were evidently more interested in the fact that both Johnston and Gill’s types were drawn by geometric means.⁴ Jakob Erbar’s Erbar (1922–1926) **25** and Rudolf Koch’s Kabel (1926–29), released by the Klingspor foundry as Cable) **26** are two examples.

25 Erbar, by Jakob Erbar.

26 Klingspor Cable,
by Rudolf Koch.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz £1234567890

1 Tschichold: *The new typography* p.74

2 Ibid.

3 Ibid.

4 Some authors do classify Johnston Sans and Gill Sans as geometric sanserifs, for example Alexander Lawson.

Chrysler Motor Cars
WHITE STAR LINE

A B C D E F G H I J K L M N O
 P Q R S T U V W X Y Z a b c d
 e f g h i j k l m n o p q r f s t u v w x y z
 1 2 3 4 5 6 7 8 9 0 ff ck ß £ « » * § ! ()

27 Futura, as released by the Bauer foundry.

a a a a b b b b c c	A B C D E F G
d d e f g g h i j	H I J K L M N
k l m n o o o p p	O P Q R S T
q q r r f s t u v	U V W X Y Z
w x x y z	1 2 3 4 5 6 7 8 9 0
A ff ft ck ß	£ - » ! ? * § (, ,

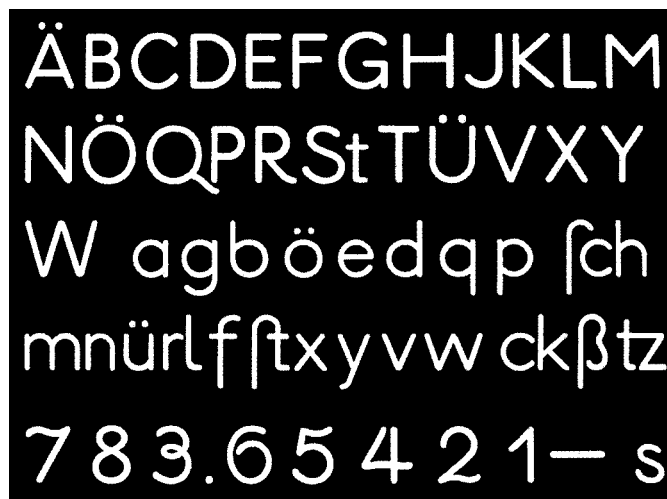
28 Early drawings of Paul Renner's Futura, showing some unconventional geometric letterforms and old style numerals.

Paul Renner: Futura

Renner was an advocate of the abolition of Fraktur in Germany when he was commissioned to design Futura. ‘Renner’s answer to the question “gothic or roman?” seemed to be a characteristically German yearning for a “third way” – a revitalization of grotesk (sanserif), to make it some kind of elemental, universal form of roman.’¹ Kinross writes, ‘to prefer roman over blackletter was to be modern, and, especially after 1918, to prefer sanserif roman letters to those with serifs was to be more modern still.’² Jakob Hegner, a publisher and printer who commissioned Futura, thought that only a painter who did not have the prejudice of a calligrapher could do the job.³ Renner was believed to be the perfect candidate for the task as he was a painter of modern landscapes.

Renner clearly followed the proportions of classical Roman inscriptions for his capitals. This was a resolute departure from the German ‘grotesk’ typefaces such as Akzidenz Grotesk. However, they were remarkably close to the capitals of Johnston Sans. Renner denied this and claimed that Johnston’s capitals were closer to the ‘grotesks’.⁴ Indeed, the Germans were impressed by the innovation of Johnston’s railway sanserif.⁵ Renner himself never visited London at that time and he claimed that he had never seen Johnston’s type. However, the German translation of Johnston’s book *Writing & illuminating, & lettering* was published in 1910 and his examples of skeleton letters already found their way into monoline handwriting models (the ‘print script’) for school children 29.⁶

29 ‘Sütterlin-Schrift, a model for children’s handwriting in use in Germany in the early 1920s.’



1 Burke: *Paul Renner* p.86

2 Kinross p.75

3 Paraphrased from Kinross p.86

4 Burke p.96

5 Carter, H: ‘Sanserif types’ p.42

6 Burke p.95

Contrary to what Renner did for his uppercase, Renner wanted to ‘start from zero’ for his lowercase.¹ He thought that the lowercase would bind better with the capitals if it shares the same static forms rather than dynamic,² despite the fact that he intended the type to be for text use. It is curious however to note that in 1931 he had thought of the opposite, that type designs should imitate the conventional tools, for instance the broadnib pen. He suggested that the tool used to produce the type must be subordinated to the broadnib pen.³

The task of the reproductive arts consists of rendering the ‘tool-language’ of the original as faithfully as possible: it must allow the contrast affected by the movement of the brush or pen to be perceived as logical...

But the production of entirely strange alphabets, in which the European writing tool, the broad pen, must inevitably be exchanged for another, is as useless an effect as inventing a new language, if this other tool is not subordinated to the broad pen as a means of reproduction.⁴

His view in the 1920s of rejecting pen-made forms was more in line with the ideals of Herbert Bayer’s typographic experiments at the Bauhaus. Renner’s rejection of pen-made forms seemed to have resulted in the lack of dynamic flow, but he himself thought that the geometric principles behind the construction of the letters would cohere them together: ‘It is not little marks, rather it is the “spiritual bond” that binds the many individual marks into a unity of form’.⁵ However, the results still resembled the monoline ‘print script’ shown earlier. Unlike Johnston Sans, Renner skillfully resolved the awkward darkness when a stem joins a bowl. He pointed out that two concentric circle would not join well with a vertical stem. He writes that ‘anyone who wants to create a constructive script for the human eye, cannot achieve it with elemental geometric construction 30.’⁶

Despite this view in 1913, Renner did ‘invent a new language’ so to speak during his design process for Futura. His strict application of geometry resulted in letterforms that were more novel than functional 28. Burke points out that the foundry probably opted for the more conventional forms so that the sales would not be affected.

30 A strictly geometric monoline *p* and a visually balanced, optically monolinear *p*.

1 Burke p.97

2 Ibid.

3 Ibid.

4 Quote from ‘Buchgewerbe und Bildende Kunst’ (1913) pp.72–4. From Burke p.97

5 Quote from ‘Futura: die Schrift unsrer Zeit’ (1928a) pp.4–5, from Burke p.98.

6 Quote from ‘Das Formproblem der Druckschrift’ (1930c) p.32, from Burke p.100.

Whereas Gill Sans enjoyed immense success in Britain, it did not do well on the continent or in the United States. ‘Gill Sans meant nothing to American typographers, and very little to European ones’.¹ Monotype was eventually forced to remedy this by providing ‘alternate’ versions of several letters of Gill Sans in order to satisfy the tastes of these overseas markets. The result was nothing more than a close imitation of Futura 31.

31 Monotype’s alternate version of Gill Sans.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 1234567890 1234567890

W A Dwiggin: Metro

After the arrival of the Modernist era in graphic design, the idea of a sanserif informed by humanist calligraphic writing had scarcely any place in the typographic world. William Addison Dwiggin, a type designer in the United States, had been persistently interested in designing a humanist sanserif for Linotype. Experimental No.63, as dubbed by Dwiggin, was to be a sanserif type with perceivable contrast of thicks

32 Drawing of Dwiggin’s unpublished Experimental No.63, a humanist sanserif with thick-thin contrast, 1929.

Binder rate bp fgh

and thins 32. It had a vertical axis, which reflected Dwiggin’s calligraphic lettering using a flexible pointed pen, but it also shows traits from broadnib pen writing. This idea was eventually shelved, but it did give a glimpse of the future possibilities of sanserifs – a type fit for continuous reading that is informed by the structural quality as well as stroke modulation of calligraphic writing. The trend of the market led him to design a geometric sanserif Metro (1929–30) instead 33. Although Metro is classified as a geometric sanserif, though it does show some of Dwiggin’s idiosyncrasies and his calligraphic tendencies. Sebastian Carter writes: ‘It is an interesting rather than a successful type, with a lower case which is too idiosyncratic for the generation of constructed sans-serifs to which it belonged, and not convincing enough to establish its own tradition’.² Indeed, it is a sanserif type that sits somewhere between a humanist and a geometric.

1 Tracy p.95

2 Carter, Sebastian: *Twentieth century type designers* p.67

Frederic Goudy: Goudy Sans

Although not at all a geometric, another American sanserif type worthy of note designed during this period is Goudy Sans. Designed by Frederic Goudy (1929–30), it was one of the earliest sanserif designs to break away from both the grotesque and the geometric model. It is based on the principles of written forms rather than constructed ones, contrary to even the most calligraphic Johnston Sans and Gill Sans in that era. Perhaps this is hardly surprising: Goudy was initially quite resistant towards the idea of making a sanserif but in the end reluctantly took on the job.

According to Robert Bringhurst, Goudy Sans is the ‘spiritual father’ of a few contemporary sanserifs, such as Erik Spiekermann’s Meta and Officina.¹ However, it is not a sanserif in the full sense – there are small residual serifs. It is a monoline design based on the proportions of the humanist bookhand, though instead of an *o* based on a perfect circle, an oval was used hence the letters are condensed overall. Oddly, the uppercase has a few very idiosyncratic and ornate characters, and italic capitals are even more exuberant. The italic lowercase is also distinctly cursive. There are exiting finials on the *a d h i j k l m n* and entry strokes on *m n p u v w* and *x*, fully exhibiting the cursive quality of the calligraphic forms. The terminals of Goudy Sans are horizontally cut at the baseline and oblique at the x-height and ascender line.

Although Goudy Sans has not been a popular typeface, it was nonetheless a milestone in the development of calligraphically informed sanserifs. However, other type designers did not pick up its ideas until the 1980s, as we shall see later.

A B C D E F G H I J K L M N O P Q R S T
U V W X Y & Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

*A B C D E F G H I J K L M N O P Q R S T
U V W X Y & Z*

a b c d e f g h i j k l m n o p q r s t u v w x y z

¹ Bringhurst p.242

The sanserifs that have been examined so far are all monolinear. Although most of them do have subtle modulations, they are nothing more than visual adjustments that made the letters to *appear* to be monoline. These thick-thin modulations have little to do with the logic of the broad-nib pen. Monolinearity was still considered a prerequisite of sanserif types. Meanwhile however, a number of designers also began to create sanserif types that more faithfully reflect broadnib or flexible-pen calligraphic writing, in both construction and stylistic terms. All of them were prolific and diverse designers, who were perhaps not bound by the dogmas of Modernistic design. Whether these were considered sanserifs at the time is debatable, and they were certainly geared towards advertising and display copy rather than for any extended amounts of text, with the exception of Optima. The term 'contrast sanserifs' is used here, following Gerrit Noordzij's classification in the Scangraphic type catalogues (1990).

Contrast sanserifs: 1920s–50s

WEIN
KARTE

35 Feder-Grotesk,
by Jakob Erbar.

Jakob Erbar's Feder-Grotesk (1919) was perhaps the first sanserif design to incorporate perceivable thick and thin transitions **35**.¹ Erbar did practice calligraphy, and attended a course taught by one of Johnston's pupils, Anna Simons. Feder-Grotesk was clearly a type informed by calligraphy, but not calligraphy in the broadnib tradition as Walter Tracy claims.² It is a type with a high stroke contrast and its axis is clearly vertical – following the principle of 'expansion contrast'. The type was only available in capitals and was not widely used. Another capitals-only contrast sanserif at the time was Offenbach designed by the German calligrapher Rudolf Koch, who was a contemporary of Edward Johnston. It was designed for use with Koch's Gothic lowercase.

36 Robert Hunter
Middleton's Steller.

RENDERS THE LUDLOW
system particularly worthy of the
FEW PARTICULAR POINTS
of utility and adaptability

The first twentieth-century sanserif designed in the United States was Steller **36**, designed by a Scottish-born American designer Robert Hunter Middleton in 1929. It was one of the first sanserifs to incorporate the thick-thin transitions found in calligraphy. While Steller might seem a simple calligraphic typeface, it in fact incorporates qualities from a few sources. Steller is a typeface with moderate thick and thin contrast and a vertical stress. All the strokes are tapered towards the middle and slightly swelled at their endings. All of the vertical stems for the descenders and at the baseline are cut horizontally. Although the type has a vertical stress, which is derived from the logics of the flexible pointed pen, the terminals in *i j m n p* and *r* are evocative of broadnib calligraphy – they are oblique. The dots on the *i* and the *j* are also derived from the broadnib pen. The *k v w x* and *y* on the other hand are reminiscent of monoline lapidary letters from antiquity – the diagonal have terminals that are at right angles with the strokes.

¹ Tracy p.95

² Tracy writes: 'Its main and secondary strokes were visibly different in thickness, because the type was meant to reflect the action of a broad-pen...' p.92

American designer Warren Chappell designed Lydian in 1938 **39**, which was an immense success in the field of advertising typography. Lydian is a contrast sanserif with an oblique stress. The contrast is high, with explicitly pen-made forms. The italic of Lydian is a cursive that is almost vertical, but there is also a bold cursive version, which is script-like, but it could hardly be called a sanserif. Lydian's curves are slightly angular, giving a hint of gothic influence, reminiscent of Rudolf Koch's calligraphy – Koch was Chappell's teacher.

37 Lydian, designed by Warren Chappell.

BRAZIL AND SOME COUNTR
It shows civilization at the time
BRAZIL AND SOME COUNTRIES
It shows civilízation at the time so
syncopation enjoyed

THE PRIMA
is that it sha

38 Colonia, 1938

Adverti
More

39 Radiant, 1940.

A number of other contrast sanserifs were also designed along the same line between the 1930s and 40s. But there is also a slightly different take on these contrast sanserifs – a unicase designed by A M Cassandre called Peignot in 1937 **40**. Peignot is a sanserif typeface with a vertical stress and high contrast. Although this is reminiscent of the 'expansion contrast' principle, it is a type that is far removed from the idiom of calligraphy. The lowercase, except *b d* and *f* are in fact small capitals, though some are with ascenders and descenders. However, its capitals are an 'attempt to revive the original form of the roman alphabet'.¹ Peignot's capitals are indeed quite inscriptional, though with some letters slightly widened. 'Cassandre believed he had drawn a purer form of the alphabet which bore the "essential character" of roman letters'.² This experiment was quite akin to Herbert Bayer's universal alphabet. Despite its eccentricities, Cassandre's intention was to make Peignot a text face. It was however not widely adopted for such use, and the foundry Deberny & Peignot later released a version called Touraine with a conventional lowercase **41**.

The 1950s saw the introduction of two immensely successful and influential neo-grotesque sanserif types – Helvetica (1956) and Univers (1958). They continued the tradition of the nineteenth century industrial grotesques but were severely rationalized and were made into large type systems. Their lineage with calligraphic writing is rather remote as they are

¹ Berry et.al.: *The encyclopedia of type faces* p.224

² Blackwell: *20th century type: remix* p.64

primarily static, symmetrical designs without thick and thin contrast and lack humanistic proportions. Therefore they do not warrant an account here. Despite the fact that these neo-grotesques virtually took over the type market from the 1950s, there was still room for other innovations in sanserif designs to take place in the mean time.

40 Peignot, designed by
A M Cassandre

RÉGIONS
industriel

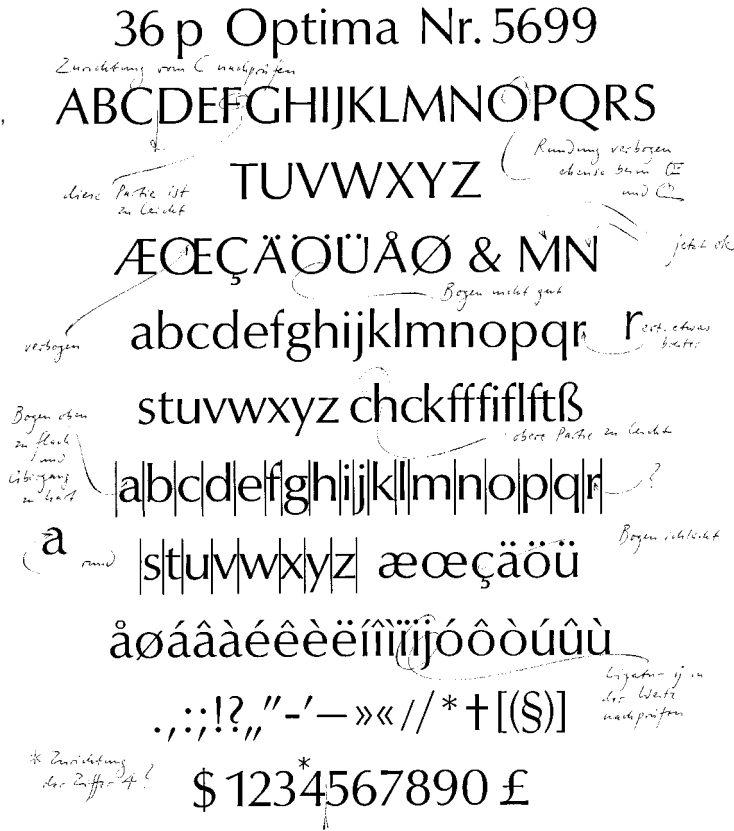
DEMANDER
INTERVENTION

41 Deberny & Peignot's
Touraine.

HERMINE
sûrement

PRÉCIEUSE
importation

42 'Optima Roman, The foundry proof sheet of the 36pt. with corrections and notes for the casting. S. Stempel AG, Frankfurt 1958'



The Museum of Modern Art
D. Stempel AG 8.11.1958

Zurückführung von M nachprüfen

12.11.1958

43 Optima and its oblique, from an undated specimen published by the D. Stempel AG Typefoundry.

The Inland Printer Swiss Watchmaker
Escolasticismo Oriental Prince
Publication Beneficiario
SERENADE MARINERS

Hermann Zapf: Optima, the new Roman

With the introduction of the Optima typeface designed by Hermann Zapf in 1958, another historical source is brought to the fore. The inspiration for Optima was drawn from the serifless lettering on a Florentine inscription when Zapf visited Italy. The fifteenth century was an ‘experimental’ period for roman inscriptional lettering according to Nicolette Gray. It was a transitional period between the Gothic and the Roman, and that period of exploration yielded many unique styles of letterforms. The inspiration for Optima might have well been one of these ⁴⁴. These inscriptions show essentially roman letterforms without serifs but with thick-thin transitions. The axis of contrast is clearly vertical, produced by either writing with a flat brush held at a 0° angle (i.e. completely horizontal) or built-up with a thin, pointed writing tool. These fifteenth century experimental letters did not have the ‘ideal’ proportions as found on Trajan Column.

⁴⁴ ‘Epitaph of the anti-pope John XXIII. Tomb by Donatello and Michelozzo (1422–7) in the Baptistry, Florence.’



Optima is a sanserif type that is exclusively based on the principles of the flexible pointed pen. The axis of contrast is vertical, and the contrast of thick and thin is very high. Yet the inherent proportions of the lowercase is unquestionably humanistic (based on the Golden Section), and the capitals closely follow the proportions of the Trajan Column inscriptions. Although Optima was designed as a text face and is obviously calligraphic, it is still an extremely static and rationalized face. Moreover, Optima’s italic is simply a sloped roman. Sebastian Carter writes: ‘A serifless italic defies imagination, so in common with most sans-serifs a sloped version was produced to accompany the roman’.¹ The terminals for the vertical stems are horizontal except the top of the *t*, and the curved strokes are cut at a slightly oblique angle. All strokes are subtly tapered and waisted. ‘The taper of the stroke derives from unserifed Greek inscriptions and the unserifed roman inscriptions of Renaissance Florence, but in other respects the architecture of Optima is Neoclassical’.¹ It was

¹ Carter, S p.152

said to be an extension of the development of transitional roman book types such as Baskerville, dispensing with the serifs without altering its essential characteristics.²

Optima was a typeface that defies standard type categorization. Zapf would have liked to name the typeface *Neu Antiqua*, meaning ‘new Roman’ due to the fact that the typeface closely resembles roman letterforms. Zapf also called it ‘serifless roman’ in order to distinguish it from other monoline sanserifs.³

Another contrast sanserif along a similar line to Zapf’s *Optima* was José Mendoza’s *Pascal*, designed in 1960 45. ‘It is a sort of country cousin to *Optima*’,⁴ writes Carter. Like *Optima*, it is a sanserif type with a high thick-thin contrast. It is a more condensed type compared to *Optima* and perhaps a little less refined. The widths of the capitals were made even. Unlike *Optima*, it has a humanist stress – its axis of contrast is oblique. The lowercase *g* is single-storey. An semi-cursive, almost chancery italic was also drawn but was never released.⁵

45 *Pascal*, designed by José Mendoza.

A B C D E F G H I J K
 L M N O P Q R S T U
 Æ V W X Y & Z Œ
 abcdefgghijklmn
 opqrstuvwxyz
 æ £1234567890 œ

1 Bringhurst p.246

2 Carter, S p.152

3 Carter, S p.151

4 Carter, S p.160

5 Mendoza’s original drawings for *Pascal* italic can be found at the University of Amsterdam library.

Sanserif as a book type 1960s–80s

There have always been attempts to design sanserif types that are suitable for the setting long texts. It wasn't until the arrival of Syntax, designed by Hans Eduard Meier in 1968, when the dynamic nature of humanist calligraphic writing – arguably the most important element in a type for continuous reading – is truly integrated into a monolinear sanserif type. Meier seriously rethought the nature of the sanserif as a type fit for comfortable continuous reading and formed an exemplary foundation for subsequent sanserif designs.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 abcdefghijklmnopqrstuvwxyz

46 Hans Eduard Meier's Syntax.

Hans Eduard Meier: Syntax, an 'oldstyle' sanserif

In 1970, Stempel's art director Erik Schulz-Anker wrote a detailed study of Meier's Syntax type. Schulz-Anker begins by acknowledging that there were two 'extreme poles of an organic development'. They were namely the Garaldes and the Didones. He states that most sanserif typefaces follow the Didone principle, which gives letterforms that are static in nature. On the other hand, Syntax follows the Garalde model – which is a direct descendant of humanistic writing – giving the type a dynamic flow, making it very legible. It is a type that is indicative of the motions of writing, which gives its dynamic character. However, the emphasis that Meier put on the making of Syntax was not the thick-thin transitions found in calligraphic writing, but the essential skeletal forms of the letters. The type 'synthesizes the linear structure and dynamic duct'.¹ Erik Schulz-Anker states that characteristics such as serifs and thick-thin transitions only have 'at best a subordinate stylistic function'.² The inward structure – in Syntax's case the essential humanist skeletal forms – is what really determines its style. Sumner Stone adds, 'it seems natural to expect that if one uses as essential forms the skeletons of written letters, e.g., humanistic ones, then the letterforms produced from them by whatever weighting system will retain some of the essential characteristics of the original letters'.³ While the strokes remain monoline and serifs absent, it unquestionably belongs to the grouping of Garalde typefaces in terms of its construction.

1 Schulz-Anker: 'Syntax-Antiqua, a sans serif on a new basis' p.50

2 Ibid.

3 Stone: 'Hans Eduard Meier's Syntax-Antiqua' p.22

The terminals of Syntax are cut at right angles to the strokes, which help leading one letter to the next. Meier writes: ‘Static characters are designed on the basis of a geometrical system. The beginnings and ends of strokes lead back into the character itself and do not join up to the neighboring characters’.¹ Coupled with the slight forward slant of the letters, the type gives a strong horizontal flow that greatly facilitates the ease of reading.

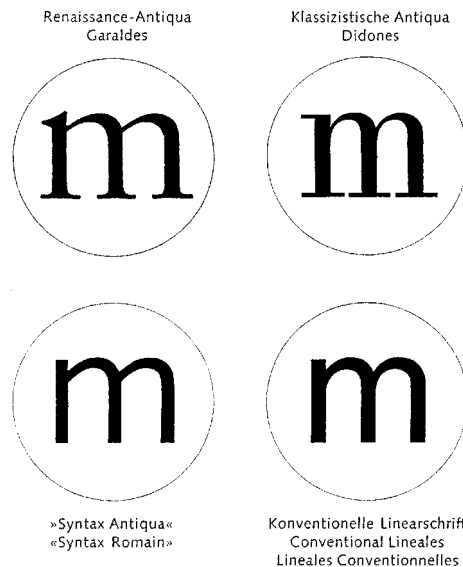
Schulz-Anker argues the letters in Syntax are easier to differentiate from each other than ‘static’ sanserifs like Helvetica, owing to the fact that Helvetica’s letters were deliberately made to resemble each other 47. ‘A distinct differentiation among the individual letters, on the other hand, is one of the main characteristics and determinants of a dynamic type face’.²

47 Clockwise from top left: Bodoni, Sabon, Helvetica and Syntax.

fasten fasten
fasten fasten

One of the most important details in the Syntax typeface is the construction of the arches and joints. Schulz-Anker compares the letter *m* in Bodoni, Helvetica, Sabon and Syntax 48. While the counters of both Bodoni and Helvetica are rounded and symmetrical, both Sabon and

48 Comparison of Garaldes and Didones and their respective sanserif forms.



1 Quoted by Sumner Stone, p.23

2 Schulz-Anker p.52

Syntax have arches that start at an obtuse angle and are asymmetrical. The joints for Sabon and Syntax are much more incisive and dynamic, showing the distinctive properties of calligraphic writing. Meier states:

In the old face and Syntax the arches start from the stems and form angles with them. They swing lightly upwards and after making a narrow-radius curve as they enter the second stem. The dynamism of a curve written with a pen is still perceptible. The arch is asymmetrical in form. In modern face and sans serif types an almost symmetrical arch is used to join the two uprights. The point where the arch leaves the stem is no longer emphasized. The motion of writing is no longer implicit.¹

Schulz-Anker writes that the capitals of Syntax were directly derived from early Roman lapidary letters that were purely linear in structure, without serifs and monolinear. This is apparent in the terminals that are at right angles to the main strokes. Similar to the Roman inscriptional letters, the widths of the capitals vary.

49 Capitals of Bodoni, Helvetica, Sabon and Syntax compared.

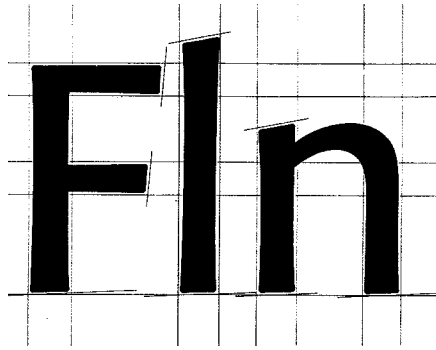
BCDEGJKMOPRS
 BCDEGJKMOPRS
 BCDEGJKMOPRS
 BCDEGJKMOPRS

Surprisingly, Syntax's italic is not a true italic. It is rather a hybrid that included only several cursive letters, namely the *b c d p* and *q*. The *a* retains the double-storey form even in the italic. Furthermore, only the regular weight is provided with an accompanying italic variant.

50 Digital URW Syntax italic.

*abcdefghijklmnopq
 rstuvwxyz*

1 Stone: 'The Stone family of typefaces' p137



Hamburgevo

Hamburgevo

51 Formata, designed by
Bernd Möllenstädt.

Bernd Möllenstädt: Formata

Formata, designed in 1980, is another sanserif designed as a text face. It is based on humanistic proportions and somewhat follows the thick-thin transitions of the broadnib pen, though its contrast is quite low. 'It was designed as a contrast to the usual linear, artificial rigidity and uniformity of Grotesque and to achieve an ideal reader-friendliness by its warm and flow'.¹ The typeface has no straight lines at all – all strokes are waisted with endings expanded and capped corners. Stroke endings are all cut at a slight angle, which is distinctly calligraphic. Formata's italic is not simply a sloped roman – it is a true italic, though it 'is a moderate italic which fits well with the rest of the family and in upright text'.²

Formata is perhaps reminiscent of one of Hermann Zapf's unpublished humanist sanserif, Magnus Sans, designed between 1956 and 1958 for English Linotype. A trial size was cut but was never manufactured. The project was cancelled in 1960 following the release of Univers.

52 Magnus Sans, an
unpublished design by
Hermann Zapf.

THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG
abcdefghijklmnopqrstuvwxyz æœiflffffiff

1 Klein, *et al*: *Type & typographers* p.76

2 Klein, *et al* p.77

Convergence of the sanserif and the serif

‘The idea of designing a serif and sans serif typeface as part of the same family seems to have originated with Jan Van Krimpen, who designed a sans serif version of Romulus in the 1920s’,¹ writes Sumner Stone. However, the work was stopped rather too prematurely to have made an impact.² Two years after Futura, the Stempel foundry issued a slab-serif by the name of Memphis. It was the first of the many twentieth century slab-serif revivals that adopted the geometric idiom based on a monolinear design. It was very much in the spirit of Renner’s Futura. In fact Alexander Lawson simply states that these revivals ‘consisted of the addition of serifs to the Futura model’.³ TTC Avant Garde, a geometric sanserif designed by Herb Lubalin in 1970 had an accompanying slab-serif Lubalin Graph by the same designer four years later. However, their overtly geometric constructions are devoid of any influence of calligraphic writing – they are wholly static in appearance. The convergence of the serified and sanserif types meant that the calligraphic roots of the serif types became more important as source material for the design of sanserif types.

53 Demos & Praxis, and Demos italic & Flora designed by Gerard Unger.

O Hambur
 O Hambur
O Hambur
 O Hambur

1 Stone: ‘The Stone family of typefaces’ p.137

2 ‘For the sans serif, punches were cut in the 12 point size and matrices struck in the Enschedé foundry, but specimen settings of the four weights make it clear that the work stopped at an early stage of development.’ Tracy: ‘The types of Jan van Krimpen’ p.37

3 Lawson p.318

Gerard Unger’s Demos and Praxis, designed in 1976 were designed to function as serified and sanserif members of a related family. It was the first attempt at integrating the traditionally two different ‘genres’ of types at the outset. Both Demos and Praxis share the same structure, which is loosely based on humanist proportions. Though the g is single-storey. While Demos is a modulated serif type appear to have been written with a shallow pen-angle, Praxis is visually monolinear. Demos’s italic variant is a semi-cursive and slightly condensed. In 1984, Unger designed Flora, either to be used on its own or as a companion to Praxis. It was possibly the first sanserif typeface to approximate chancery italic

writing.¹ 'In it the sans-serif form comes as close to a true cursive as is possible'.² However, it has a vertical axis of stress, and only has a slant of 2.5°. The branching in *h m n p* and *r* are very low, almost starting at the baseline, and *a* and *g* have the conventional, single-storey forms. The Demos/Praxis/Flora family of typefaces was designed to function well under the degradation of the CRT typesetting process.

54 Lucida Serif and Sans
with respective italics

Hamburgev
Hamburgev
Hamburgev
Hamburgev

Charles Bigelow and Kris Holmes designed the Lucida family of typefaces for Adobe in 1985. It was a family of type designed to withstand the low resolution output of the original 300 dpi Apple LaserWriters. It has a serif and a corresponding sanserif variant. Lucida Sans follow the structure of the serified version closely, though it has a lower contrast than the serified one. They are both based on humanist proportions. While the serified version has a double-storey *g*, the sanserif has a single-storey one. The thick-thin transitions closely follow the logics of the broadnib pen, except perhaps at the lower joints of the *b* and *p* and the upper joints of the *d g* and *q*. This is in fact quite common amongst sanserif faces – it is to standardize the joints with a single module instead of two. Robert Bringhurst highly praises Lucida Sans and dubbed it as 'one of the best sanserifs for ordinary text'.³ He also writes that Lucida Sans 'has a poise, simplicity and energy that many serified text faces lack.

1 Bringhurst p.240

2 Carter, S p.175

3 Bringhurst p.243

abcdefghijklmnopqrstuvwxyz

abcdefghijklmnopqrstuvwxyz

abcdefghijklmnopqrstuvwxyz

abcdefghijklmnopqrstuvwxyz

abcdefghijklmnopqrstuvwxyz

abcdefghijklmnopqrstuvwxyz

55 Sumner Stone's
Stone family: Serif, Sans
and Informal with their
respective italics.

As the type director for Adobe, Sumner Stone designed the Stone family, the first original Postscript typeface for Adobe in 1987. It is a type family that consists of three stylistic variants: a serif, a sanserif and an informal. The sanserif member of the Stone family, though its essential form is based on humanistic writing, has a variable axis of contrast. While the lowercase g is double-storey for the serif version, both Stone Sans and Stone Informal have single-storey ones. The capitals are based on Renaissance roman inscriptions. While most of the terminals are horizontally cut, some of them are at right angles to the stems, giving a rather lapidary quality reminiscent of Greek sanserif inscriptions. The italic is a semi-cursive but does not reflect the essential structure of the chancery italic form.

Ronald Arnholm designed the ITC Legacy family of type in 1992, and it was in many ways a unique sanserif design. While its serified version is clearly a relatively faithful reinterpretation of Nicholas Jenson's roman type in the fifteenth century, the sanserif version is an unserified version of it – a first attempt at making an unserified version of Jenson's type.¹ Like the serified version, the sanserif also has a distinctly oblique angle of stress, and the logics of the broadnib pen are dutifully replicated. It retains many dynamic features of the humanist hand and its calligraphic flow, and has a relatively high contrast compared to most sanserif types. Instead of following the Chancery model, the italic for Legacy Sans follows the form of the Garamond's *gros romain*.² It was clearly an effort to make a sanserif suitable for continuous text setting.

56 ITC Legacy Serif and
Sans, with respective italics.

Hamburgevo
Hamburgevon
Hamburgevons
Hamburgevons

1 Bringhurst p.243

2 Ibid.

Neo-humanist sanserifs: 1990s

The integration of the sanserif and the serif within a single family of type not only means that sanserif types are moving ever closer to their serified counterparts; it more importantly shows that both kinds of typefaces are in fact moving towards a middle ground. Many sanserif typefaces designed in the 1990s were attempts to marry the two in compromising but complimentary ways. While many sanserifs of the 1990s were obviously humanistic, there are also quite a few hybrids, combining proportions and forms derived from broadnib and flexible point calligraphy. Most of these type families designed in the 1990s also have oldstyle figures, small capitals and invariably true italics. Most of them are based on humanist proportions, and have a large range of weights, making them serviceable types for both text and display settings.

Handgloves 123 HANDGLOVES 456
Handgloves 78 HANDGLOVES 90
ABCDEFGHIJKLMNOPQRSTUVWXYZ
> abcdefghijklmnopqrstuvwxyzß
 <..... fi,ffi.1234567890 & 1234567890

57 Erik Spiekermann's Meta.

Erik Spiekermann: Meta

The FontFont series of original typefaces licensed by FontShop International has been a major proponent of contemporary sanserif types since its founding in 1990, many of which were inspired by humanistic calligraphic writing. One of the first and most successful was Meta, designed by Erik Spiekermann and released in 1991. It was an extremely popular type and was dubbed 'Helvetica of the nineties' by Spiekermann himself. Unlike Helvetica, its lowercase has a fundamentally humanistic construction, though all the letters are much condensed in order to make it more economical for space – it was originally intended for the setting of forms. Its proportions are extremely similar to that of Goudy Sans's. Most terminals on the main strokes are canted, reminiscent of the broadnib pen held at an oblique angle and are slightly curved, giving the impression of entry and exit strokes. The terminal on the ascender of the *d* however

is cut at a reversed angle. Akin to Johnston's railway sanserif type, the lowercase *l* has a tail, not merely reflecting humanistic writing, but also facilitating recognizability. The widths of the uppercase are drastically equalized however. Meta's italic is semi-cursive, which has no evidence of upstrokes.

58 Scala Sans with its italic, designed by Martin Majoor.

A B C D E F G H I J K L M N
a b c d e f g h i j k l m n o p q r s t u v w x
A B C D E F G H I J K L M N
a b c d e f g h i j k l m n o p q r s t u v w x y

Martin Majoor: Scala Sans

Another commercially successful neo-humanist sanserif designed in the nineties is Martin Majoor's Scala Sans (1994). It is another sanserif that was designed by closely following an existing serif, forming a hybrid family. While both Scala's serified and sanserif versions are based on explicitly humanistic proportions, Scala Sans is slightly narrower than its serified counterpart, in order to accommodate the change of rhythm when the serifs are absent.¹ The branching on the letters *h m n p* and *r* are low, akin to the structure of the italic. The italic on the other hand is not very condensed. These were ways to bring the forms of the two variants closer together. It has been used successfully as a text type.

59 Quadraat Sans with its italic by Fred Smeijers.

A B C D E F G H I J K L M N
a b c d e f g h i j k l m n o p q r s t u v w x
A B C D E F G H I J K L M N
a b c d e f g h i j k l m n o p q r s t u v w x y z

Fred Smeijers: Quadraat Sans

Quadraat Sans (1997–98), designed by Dutch type designer Fred Smeijers is perhaps one of the most calligraphically informed sanserif designs. Like many sanserifs designed in the 1990s, Quadraat Sans was designed as a companion to Smeijers Quadraat Serif. At first glance,

¹ Bringhurst p.248

Quadraat Sans is an extremely uneven and unsettling typeface. This arguably sprang from the calligraphic influence of the typeface. Quadraat Sans has the qualities of a display typeface but at the same time suitable for the setting of longer texts. The terminals are mostly cut at an oblique angle, except those on the baseline. The face shows abrupt turns in the curves within some counters, emphasizing the oblique stress of the face and indicating the strokes of the broadnib pen. The letter-widths of the italic are markedly condensed, with particularly abrupt turns in the curves, which reflect conventional forms of the chancery italic hand.

Psychopharmaka
Sugar Crisp Proes
Entpolitisierungsprozess
Soundcheck: hallo, 1+/twothree
Multivitaminmehrfruchtsaft/00
Schema F Modalitäten Resource
 ABCDEFG
 OPQRSTU
 abcdefgh
 qrstuvwX
 789oABC
 defghijkl
 uvwxyz12

60 Thesis Sans and Thesis Antiqua, designed by Luc(as) de Groot.

Luc(as) de Groot: Thesis Sans

Although Thesis Sans (1994) is a design clearly based on humanistic broadnib calligraphy and its proportions, its arches are symmetrical and its counters rounded. This attributes to the introduction of italic characteristics in the roman letters.¹ Yet the type has a very subtle hint of a humanistic (oblique) axis of contrast – though Thesis Sans is a low contrast typeface. The logics of the thick and thin transitions are unquestionably humanistic – there is no evidence where the mechanics of the broadnib pen are compromised. The accompanying italic shares more or less the same characteristics as the roman, with very similar character widths, though it is still decisively based on Chancery italic forms. Most of the letters show the presence of upstrokes (rounded counters and low branching). The Thesis family comprises not only the sanserif, but also a slab-serif, a ‘semi-serif’ and an ‘antiqua’, and they were all designed with the same principles of construction in mind. It could be seen here that de Groot was attempting to unify not only the serif with the sanserif but also the roman and the italic forms.

¹ from Luc(as) de Groot’s web site www.lucasfonts.com

61 Via Sign, designed for the Danish Railway (DSB) by Bo Linnemann.

anp

Klampenborg

DORTMUND
WÜRZBURG
KUFSTEIN

62 The text version of Via.

starten i 1958 har Louisiana formidlet moderne kunst til børn og unge, og 1994 blev museets børnehus indviet. Her kan børn lege og male, og sidst på ugen er der værksteder der

Bo Linnemann: Via

In 1999, the Danish railway system (DSB) introduced a new corporate typeface, Via, designed by Bo Linnemann of the Danish design studio Kontrapunkt, used for the system's signage and printed literature. Via was designed as a successor of the modified version of Helvetica that was used previously. Legibility was improved over Helvetica by 'giving the letters longer up- and downstrokes, open forms, blunt angles and non-parallel lines'.¹ The most distinctive letter of the typeface is the lowercase *g*, which has an abruptly cut off lower bowl. There is a text version with a downplayed single-storey *g*, so that it does not disrupt the rhythm for continuous reading 62. This feature was found on the design prior to the Helvetica design (pre 1972). Via was an attempt to 'combine historical traditions from the old DSB signs with Danish typography culture'.² Interestingly, Linnemann writes that Futura and Gill Sans represented a 'Germanic and a British approach to functionalism' – 'constructionalistic' and 'humanistic' respectively, and during the 70s 'the Brits and the Danes both renounced their humanistic traditions. With Via, we now feel that we have made amends'.³

Via's lowercase is based on the proportions of the humanistic bookhand, while its capitals were derived from Renaissance roman inscriptions. The overall stress of Via is oblique, but its vertical at times, for example in the *o*. The thick-thin transitions of Via clearly follow the logics of the broadnib pen, except for the *o*.

The most clearly calligraphic feature of Via is the arches of the *h m n p* and *r* and the joints. The joints at the bottom right of the *a* and the top left of the *m n p* and *r* reflect the entry strokes (exit stroke for the *a*) when these letters are written with a broadnib pen. These 'entry strokes' are almost gothic like. When curves approach these joints, the thick-thin transitions are very obviously calligraphic. These curves have a very dynamic calligraphic flow. It is an extremely lively and highly legible typeface.

1 Linnemann: *Design Denmark*
p.12

2 Linnemann p.13

3 Ibid.

Conclusion

This dissertation has examined the calligraphic tendencies in the development of a branch of type that was purported to be a deviation from the norm – display typography. The sanserif began its life as almost the opposite of book typography and for some, of good taste. After over a century's development, the sanserif has now been partially assimilated into mainstream typography, even for the setting of extended amounts of text. The influence of calligraphy arguably promoted this evolution. It is perhaps seen in this dissertation that one tool does not drive out another so easily, not even after five hundred years. Yet the flexibility in our current tools for making type – the computer and the bezier curves – offer us immense flexibility to either imitate or override or combine freely all the tools that we have had in the past. Calligraphic writing, whether done with a broadnib pen or flexible pointed pen, can offer type designers new possibilities: the characteristic strokes that they produce could be reinterpreted and renewed by our new tools in numerous kinds of ways. Moreover, calligraphy, when used as a basis for designing new types gives grounding to the letterforms so that they do not deviate too much from the readers' expectations, hindering the objective communication of textual information.

In the twentieth century, designers have generally eschewed the broad-edged pen for doing their preliminary drawings, preferring instead pencil, pointed brush, ballpoint pen, felt-tip pens, ruling pens, and other tools. (Designers like Rudolf Koch, Frederic Warde, F.H.E. Schneidler, Hermann Zapf, and G.G. Lange, who have drawn typefaces that are closely based on penwritten forms, may be exceptions to this rule.) Yet all the departures of the past five hundred years have produced relatively small changes, at least for text typefaces. The remnants of the underlying rhythmical structure of written letterforms are still with us in modern letterform design, fundamentally influencing the personality of alphabet styles.¹

Should we imitate or to defy calligraphic tradition? Type designers have been asking this question ever since the beginning of typography, and it is still as germane as it was over five hundred years ago. Gerrit Noordzij's approach to typography from a graphological point of view might seem a laudable attempt to bring typeface design closer to its historical predecessor – writing. But it is perhaps seen in this dissertation

¹ Stone: 'Hans Eduard Meier's Syntax-Antiqua' p.14

that no matter how much evidence of calligraphic forms exists in a typeface, there are undoubtedly many other features of calligraphy that would have to be disposed of in order to make it work as a typeface. A certain degree of standardization has to be exercised. The question perhaps is not whether to imitate or to defy the calligraphic tradition, but one that asks how be rational without sacrificing rhythm and humanity. The key, it seems, is to maintain a tension between the two choices in order to address new challenges in type design.

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