The History of Linear, Sans Serif Types

By Adrian Frutiger

Much has been written about the evolution of type: how the forms of our letters took shape, from the roman capitals to the Carolingian minuscules, and how the Latin alphabet was then, essentially, finalized for eternity by the first printing presses of the Renaissance Age.

Looking back from where we stand now, we could say that the original forms of our uppercase letters are around 2,000 years old, while those of our lowercase letters would be over 1,000 years old. And in the last 500 years, neither case has changed in its basic forms. But what has constantly changed are the outlines of the letters, influenced by new inventions in reproduction but also by the unique spirit of each epoch.

Since the invention of sans serif typefaces over a century ago, many new stylistic forms have already emerged. In the following pages, we will attempt to explain the formal transformations which took place and provide a framework for understanding the development of this new form of type.

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The loss of the serifs Part 1

With the invention of the printing press, a longing for formal refinement began to awaken. First leaning on the bold and distinct typography of incunabula, styles gradually progressed to culminate in the decorative classical fonts of the 17th and 18th centuries. This growing preoccupation with ever greater refinement was also reflected in the architecture of the times, as well as in objects of daily use, especially furniture. But also the fashionable attire worn by the upper classes of each epoch paid tribute to this development accordingly.

The mutation

At the dawn of the 19th century, the newly established Republic of France was still groping to come to terms with its new identity – and as widespread industrialization set in, an intrinsic mutation began to take place in all external appearances. The search for a new look became a time-consuming quest eventually dragging into a decade-long struggle. This can be observed in the architecture of the early 19th century: on the one hand, there was a mixture of styles borrowing from numerous past eras, on the other hand, there was a clear will to find a new form of expression, inspired by the inventions of the time, like the railway and, later, the use of concrete as a building material (see Fig. 1a and b). This confusion was also reflected in typography, which commonly applied an incongruous melange of all previous typeface styles (see Fig. 1c).

The end of the line

In order to better understand the transition from typefaces with serifs to those without, it is necessary to consider the deeper impression left
behind by the appearance of a line. Every line which does not close in on itself has a beginning and an end. If such a line does not have fortified endings, the observer is left with the uneasy feeling that something is incomplete, the line could flow on forever. Just as an example, let’s have a look at a cross – as not to be influenced by the accustomed appearance of a letter. A cross without line endings is primarily perceived as an abstract symbol with two converging lines in the middle. The length of the lines is undefined, the lines appear to be able to continue on forever. However, as soon as the lines are given graphic boundaries, the symbol is suddenly perceived as complete entity (see Fig. 2). Such fortification of line endings has given rise to ever changing styles of decoration for ages, attributing to the cross a unique symbolism each time (see Fig. 3).

Looking at the evolution of the Latin alphabet, the first stroke endings can be found in the chiseling of Roman capitals. In calligraphy, the emphasis on the stroke beginning and ending is what characterized the stylistic appearance of the text (see Fig. 4).

Perhaps these stroke endings also had something to do with an unconscious searching for stability, as the lower serifs of incised fonts actually seem to be “standing” on an invisible line. With respect to architectural developments, characters marked with serifs at their endings could easily be compared with the columns of almost any stylistic period. In former times, a column was always decorated with a base at the bottom and a capital at the top (see Fig. 6 top). It was not until the birth of modernism that architects ventured to introduce a naked column, made of concrete. The fear that a line without boundaries might flow on forever gave way to a worldview defined by rationality – heralding the beginning of widespread use of sans serif typefaces (see Fig. 6 bottom).

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The loss of the serifs Part 2

The first sans serif font appeared in 1816 in a type sample book by William Caslon (see Fig. 7). This new typeface caught on quickly and began to appear all over Europe and the U.S. under the names "Grotesque" and "Sans Serif". Soon, bold and slender weights of this type could be found everywhere in newspaper headlines, on posters and brochures. The "Grotesque" became the instrument of a new found factuality in search of a more poignant form of expression. In their basic forms, the sans serif lowercase letters remained quite similar to those in roman type, the vertical strokes retaining a greater thickness compared to the oblique transitions and joins. The capital letters, on the other hand, were significantly altered: now all letters from A to Z had a similar width – previously narrow characters such as B, E, P and S were widened while letters like T, M and W were kept narrower (see Fig. 8).

The use of these new typefaces was limited almost exclusively to typesetting for titles and headlines. The body text remained intact, true to the classic form of roman type. This situation would endure for over 100 years. It wasn't until after World War II that sans serif fonts were to experience a true renaissance and revolutionize the world of text publishing.

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Fashion and typeface: a comparison

A consistent line of development can be identified in the over 150-year history of sans serif fonts. Just as classic roman typefaces went through numerous changes in appearance, sans serif types experienced many mutations as well. Instead of the perhaps more typical comparison of architecture and typography, what follows is an illustrative comparison between the forms of letters and men's fashion, covering a span of 250 years.

1750
As a reference point, we'll begin with the overtly elegant style of the 18th century. Extravagant refinement was evident in both the type and the clothes, clearly indicative of the end of an age (see Fig. 9a).

1825
Before the development of the sans serif types, as a reaction to the exaggerated elegance of the Didot serifs, the powerful slab serifs of the Egyptian style predominated. Men's fashion at the time also reflected this distinct change (see Fig. 9b).

1890
The emergence of the sans serif types took relatively little time. At the end of the 19th century, type foundries all over the world already had the means to produce sans serif types either with their own matrices or ones which they had acquired. Similar to the typefaces, men's clothing had also evolved in favor of austere, tight-fitting lines (see Fig. 9c).

1900
The turn of the century brought along art nouveau and with it a romantic influence which can hardly be ignored in either the typefaces or the fashions of the day (see Fig. 9d).

1925
The 1920s saw the rise of direct expression – and an objectivity influenced by science and technology. The first attempts were made to create typefaces with purely geometrical forms. Men's clothing lost every trace of adornment, beards disappeared completely and hairstyles were reduced to a minimum of simplicity (see Fig. 9e).

1955
As mentioned earlier, the years after World War II saw the rebirth of the grotesque types of the 19th century. They served as models for new alphabets with forms far removed from purely constructionist principles. The use of these more modular type forms seemed easier and better adapted to the spirit of modernity. At the same time as when the Beatles began to triumphantly take the world by storm, the fashion world also experienced a revolution. The "tight jacket" of the traditional suit was discarded for clothes made of burlap and leather. Then blue jeans came from America – a look which spread around the globe, breaking down barriers across every class of society, a fashion equally accessible to women and men (see Fig. 9f).
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The sans serif wave Part 1

To better understand the transformation of typeface forms, let's cast a look back at the 1920s. Paul Renner was making his first attempts to create an alphabet exclusively with circles and lines. But his experiments failed due to the unusual characters which his rigid concept of form produced (see Fig. 10). Later, when he developed Futura (1927), the stroke thickness was no longer consistent but a slight expansion and narrowing was allowed which helped the characters appear less peculiar. Only the letters a, g and t marked a clear departure from the classic forms. With regards to capital letters, the old style of applying different widths was reintroduced. It should be noted that the sans serif type designed by J. Erbar in 1922 already implemented a lowercase style (only in normal weights) from which Futura clearly drew inspiration. At about the same time as Futura, Rudolf Koch introduced Kabel (1927) which in its mode of expression for normal text passages could be considered the prototype of all sans serif types. The strokes are uncompromising in their consistent thickness and the curves are almost entirely purely circular in form. The stroke endings are strangely cropped, sometimes perpendicularly sometimes diagonally; a certain woodcutting style can be observed here which was quite typical of Koch.

The gray line

Before considering the further development of sans serif types, it is important to remember that with the outbreak of World War II all stylistic progression in this field was essentially brought to a halt in Germany. In Switzerland, however,
which was spared many of the horrors of the war, a creative fire continued to glimmer. During this period, there was a gradual departure from constructed typefaces like Futura and Erbar and a rediscovery of the old sans serif types from the end of the 19th century. Among other typefaces, typesetters dug up Standard Grotesk (1898) and gave it a thorough facelift. And in 1943, the Haas foundry took the Moderne Grotesk, originally designed by Ludwig Wagner in 1912, reintroducing the type as Normal Grotesk. These old fonts were then subject to an innovative phase of experimentation at the design schools in Basel and Zurich, marked by a clear tendency towards asymmetry. Lines of type were treated like building elements which were used to harmoniously structure a page, thereby also defining the surrounding blank spaces (see Fig. 11). The letters of a typeface, when placed in a row, were supposed to be able form a harmonious gray line which could be used as a typographical building element – something which was not possible with the irregularities of more constructed fonts.

At the beginning of the 1950s, when type foundries began to operate again, the actual work of creating new fonts in this style began. Folio was designed by K. F. Bauer and W. Baum. They could draw on the experience of almost 100 years of developments. One of their models, Breite Grotesk, was from the year 1867, while for the model of his Helvetica type family, Max Miedinger used the so-called Schelter Grotesk from the year 1880, whose matrices were sold at this time by Schelter & Giesecke to many foundries. Univers, by Adrian Frutiger, with its strongly emphasized thick-thin contrasts and somewhat angular ovals, had no typical models. The first designs of this kind of sans serif font family were created in 1950 at the Zurich School of Applied Arts (see Fig. 13). What certainly helped these 3 fonts become the international successes which they are today, is the fact that they were all made available to the three most important leadsetting systems of the time and were therefore all
widely used in the mass production of texts.

The grid
The discovery of the grid had a considerable impact on the development of this new form of typography – not only in the breakdown of the page into graphic units but also in the analysis of the individual characters of the alphabet. Such a system had already been used for centuries in Japanese architecture, where the unit of planning is the size of the tatami, a straw mat, which is used to map out the proportions of each room in a unified way. An illustration by Walter Käch shows the conception of a grid for a sans serif font (see Fig. 14), on which most lowercase letters can be designed. The difference to the way in which characters were previously drawn can be seen in the direct comparison of a constructed and a modular typeface (see Fig. 15). In our example, the upper line (Futura) has fill areas featuring eyes and intermediate spaces which fluctuate greatly in size and form; on the lower line (Univers), the fill areas are more similar. The curves are ovals which have been slightly stretched to one corner and there is a distinct thinning in the oblique transitions and joins, as can be seen in b and n, for instance. The interior and exterior white triangles at the oblique angles are also more similar to each other.

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The sans serif wave Part 2

The definition of "medium"
The thickness of a stroke is one of the most decisive factors in determining the basic structure of a typeface, especially with regards to what is considered "normal". A stroke thickness norm had already been established in the Carolingian minuscules and especially in the first humanistic roman types. It is the exact relationship between the black and white values which is responsible for lending the x-height strip of a text line a certain grayness. This grayness is what the reader perceives as normal. And these proportions are perceived by readers with astonishing sensitivity. All too often a type foundry came out with a font which later only had to be complemented with a "Book", a "Medium" or a "Heavy" in order to be accepted as legible or "normal". However, it is not easy to exactly define these norm values. The black values are influenced by the thickness of the oblique transitions (and the serifs in roman type). An average value could be defined as when the x-height is approximately 5 1/2 times the width of the stroke (see Fig. 16). The normal width of a sans serif typeface can be defined by the eye's width which should be approximately 3 times the width of the stroke and with a bearing value of one stroke thickness on each side. And if, in compensation for the oblique black value, 1/2 stroke thickness is subtracted from the x-height, a theoretical x-strip is created whose height is 5 times the thickness of the stroke. The gray value is composed of 2/7 black surface and 5/7 white space, i.e. a density of about 30%.

Optical corrections
Optical effects also have to be taken into consideration. The thickness of a stroke perceived by the eye is relative. From roman type, readers are accustomed to...
thin upstrokes and thick downstrokes, which is taken into account in the development of new typefaces (see Fig. 15). This example also demonstrates how the stroke thickness becomes more wedge-shaped as it approaches another stroke in order to avoid a conical effect towards the outside. Small eyes are widened from the inside through a thinning of the strokes (see Fig. 17).

The variants
A carefully planned proportional change of the basic grid is needed to be able to design harmonious variants such as narrow, wide, light and bold, without altering the overall impression of the style. Unlike the diagonal endings of old sans serif types, the consistent horizontal endings of the curves (see Fig. 18) improves the acceptance of such variants. The diversity offered by a font family had to be extended beyond the classic triptych of light, bold and italic to include a fully structured font set with many weights. For the first time, the typeface also takes on the character of the text itself (see Fig. 19).

Sans serif italics
The italic weights were also formally structured on a grid of their own. It was not a question of creating independent typefaces, as with roman type, but simply slanting the strokes into a more diagonal position and maintaining the same gray values. The precise angle applied is decisive for the expressiveness of an italic weight. Univers, which was designed right from the start for photosetting, was given a steep diagonal slant of 16°; the barriers between the letters imposed by leadsetting were no longer a consideration. To this day, this steep angle has continued to inspire typographers seeking to add a sense of motion to their print jobs (see Fig. 20).

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The sans serif wave Part 3

Capital letters
In comparison with lowercase letters, the uppercase was considerably reduced in size, also for the sake of the aesthetics of the gray line. The previously discussed standardization of width which was applied in the first sans serif fonts (see Fig. 8) was also quite conducive to this trend.

The spacing problem
The problem of text spacing deserves some explanation as well. In leadsetting, the serifs in roman type made it impossible to place letters too close to each other, as the serifs acted like buffers between train carriages. The arrangement of vertical bars in roman type can be compared with a classic row of columns with unified spacing (see Fig. 21a). But due to the absence of serifs in the new grotesque typefaces, a conscious reduction of the lateral bearing values was required to ensure the visual unity of each word. In this way, a two-phased rhythm was established (see Fig. 21b).

The new technology of photosetting, as well as scratch film letters, allowed for complete freedom in determining the spacing between characters. This trend led to an absurd crowding of the letters to the point where they practically seemed glued together (see Fig. 22).

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Several fonts should also be considered which, strictly speaking, do not clearly fit into the evolutionary line of sans serif type.

**Outsiders**

Several fonts should also be considered which, strictly speaking, do not clearly fit into the evolutionary line of sans serif type.

**Gill Sans**

One of the most unique sans serif styles is the font known as Gill Sans (1928). Eric Gill undoubtedly drew inspiration from the signage typeface developed by Edward Johnston in 1918 for the London Underground. The distinctive characteristics of the Gill Sans font are the classic forms of the a and g, the wide t, but also the old-fashioned roman capitals. The rounded c, e and s are the first examples of vertical stroke ends which create an optical effect of the stroke thinning towards the ending, alluding to roman type. On the whole, Gill Sans exudes a profound medieval spirit – which makes it all the more surprising it is essentially the only sans serif typeface without a modular use of strokes. The O is a perfect circle. Oblique and vertical strokes as well as upstrokes and downstrokes all have a consistent thickness. Only a, e and g have considerably thinner strokes at the openings of the small eyes. These aberrations from an otherwise consistent stroke thickness are the trademark characteristics of the “Gill” typeface; this can be seen even more clearly in the bold weights.

**Peignot**

This highly individualistic type family Peignot was designed by A. M. Cassandre and Charles Peignot, starting in 1936. The initial motivation was to design an alphabet based on Unziale in which upper and lowercase letters could be merged. Capitals were later added, however, as the customer was not receptive to the idea of a single alphabet for both cases. A similar concept led De Roos to create Simplex (1939).

What was also innovative about Peignot at the time was a sans serif typeface emphasizing bold downstrokes and fine transitions. Since then, numerous other fonts have been developed with a similar type ductus. They do not deserve mention here, however, as in most cases they were straightforward roman types, simply without serifs.

**Microgramma**

With the widespread distribution of television, a new form began to
imprint itself in subconscious of the masses, namely the visible part of the cathode tube. This form represented a merging of a rectangular and an oval form – at the time, an unusual combination. Consequently, it is not surprising that two fonts developed at this time by Aldo Novarese, Eurostile (1962) and Microgramma (1952), became international successes (see Fig. 23).

It is interesting to note that fonts with such extraordinary basic structures are practically never used for longer texts. This is because readers are receptive to unusual type patterns in large print but find them too disruptive for the reading of longer texts.

**Antique Olive**

One typeface which stands out from the direct development line of the sans serifs is Antique Olive which was developed by Roger Excoffon, in 1962. The hand of a painter can clearly be sensed in this font, especially in the unique formation of the curves and the concentration of weight in the top of each letter. Nevertheless, this font is strictly based on the classic skeleton of roman type which has, in turn, led to its increasingly successful application in text passages.

**Deviations**

In the 1970s new phenomena appeared, especially large cab typesetting, which gave typography an unexpected new boost. New technological developments made magnetic (and later optical) recognition of coded graphic elements possible. The challenge for technicians was to reshape letters so they could also integrate their digital codes. As a result, the OCR-technique was developed which allowed typefaces to be recognized both by the human eye and optical scanners. In the early phases, this development led to the shocking mutilation of the letters of the alphabet in their familiar forms. At the same time, clocks and pocket calculators began to appear which utilized completely new, 7-segment digital characters like Quartz and LCD (see Fig. 24 top). With the emergence of these typefaces, which became known as computer typefaces, there was a drastic break with the century-long, steady development in the form of everything written. It could be said that these types led to a certain desecration of what, up until then, had been the sacred right of readers to aesthetic and legible texts. The limits of accessibility had clearly been crossed. During the same period of time, a new generation of youths emerged who continuously strove to challenge the establishment, also crossing the limits of acceptability with their asocial behavior, aggressive clothing and eccentric make-up and hairstyles (see Fig. 24 bottom).

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Further development is possible

As previously discussed, postwar sans serif fonts like Helvetica, Univers, etc. became so enormously successful and widespread that they soon permeated all forms of typographic use with the exception of books and newspapers. Even today, they are still among the most widespread fonts in daily use. In the 1970s, it seemed the development of sans serif fonts had come to a climax. It was widely assumed that the considerable number of sans serif fonts which had been developed since the beginning of the century had led to a saturation of the style and thereby all gaps had been filled for these sorts of typefaces. Looking back from our present vantage point, this assumption must be considered false.

The previous age of gloss

The typical appearance of the gray line was most indicative of the period spanning the 1950s and 1960s where there was a tendency towards glossy surfaces. Buildings were erected whose "skin" was comprised of glass and mirrors. Other typical elements of this period included highly polished furniture, opulent use of chrome on automobiles, the shiny gloss of plastic articles and nylon clothing, not to mention the glossy style of art printing paper. The sans serif types created in the course of this modernistic age were also characterized by a similar "glossy" feel.

A more tactile structure

As environmental awareness began to grow, the desire for glossy surfaces was gradually replaced by a longing for the more natural appearance of matte surfaces. The preference for an artificial shine was replaced by a love of natural materials. The rough, original appearance of materials was left unfinished and unpolished, giving a new expression to modern objects of daily use.

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Cars and typefaces: a comparison

In certain areas, our perception of forms is constantly being refined. For instance, the eyes of car lovers (and there are plenty of them around) have continuously been trained to react to barely noticeable changes in the shapes of car bodies. Each year, the basic silhouette of any given car only changes very slightly – but after three years already, it is considered out-of-date. For typography professionals a similar process takes place every year with typefaces. New trends are continuously emerging in which new fonts are created or old ones come back into use. Based on these considerations, we have put together a comparison between cars and typefaces with regards to the respective developments in form.

1925

We'll begin our comparison with a car from the year 1925. Several typical letters from sans serif typefaces developed at the same time can be seen beneath it. The mixture of purely circular and absolutely straight lines can be clearly identified in both examples – two distinct expressions of one and the same epoch (see Fig. 25a).

1955

In the following 30 years, the silhouette of the automobile underwent a complete transformation. One the hand, physical factors like an improved understanding of aerodynamics came into play, on the other hand, there was a general stylistic move towards the streamlined form. All right angles had disappeared, protruding elements like headlights and fenders were absorbed by the overall form. Everything functional was molded to conform to the aesthetic vision. In these years of unsurpassed economic prosperity, designers in all fields were
driven by an unquenchable thirst for modernism. The creation of typefaces was subject to the exact same drive and brought forth the typically modulated and rounded forms of the new sans serif families (see Fig. 25b). Only the strict rules of legibility kept type designers from streamlining the letters completely – so a few imperative details were able to be rescued. We’ll look at an example to illustrate this point. For the sake of aesthetics, there has always been a temptation to leave out the typical projections found in letters like b, d, m and n – projections which have their origin in calligraphy – in order to attain a “purer” outline which could be applied throughout the entire alphabet (see Fig. 26). Such conceptions are certainly acceptable in headlines, for longer text passages, however, this degree of deviation from the classic form would never be tolerated.

1975
The student revolts and general public tumult of 1968 managed to shake Europe out of its ideological and elitist reverie. Subsequently, the economic crisis of the 1970s brought about an overall repositioning of values. With regards to design, a new aesthetic was discovered in functional forms. The design or everyday articles was based more and more on rational and ergonomic considerations. For improved functioning and stability, cars were designed using angular shapes again and the use of chrome had all but vanished (see Fig. 25c). A fascination with raw materials was widespread, people rediscovered the comfort of cotton shirts and art printing paper was almost exclusively matte.

Vintage cars
A new formal attitude was taken towards the sans serif types in these years as well. It was recognized that some angular details in letters helped improve the immediate perception and readability of a word. As a result, old and often even somewhat jagged fonts came back into fashion, such as Franklin, News Gothic, Vectora and Venus. In addition, Gill Sans, which had never really completely been forgotten, was suddenly in great demand again. For expressly neutral messages, the constructed fonts from 1930 were
applied. So, just like with automobiles, a new passion was discovered for all things vintage.

**Grotesque hybrids**
The creation of truly innovative sans serif fonts was not really possible anymore in the 1970s as, for the most part, all stylistic gaps had already been filled and the formal possibilities had all been explored. For this reason, new typefaces could only really be created as variations of already existing typefaces or hybrids which drew on various styles.

**Syntax**
In 1969 Hans Eduard Meier created Syntax, a new font which was somewhat ahead of its time - not unusual for innovations. With slightly condensed spacing, it could be considered in the tradition of the Morris Fuller Benton font News Gothic (1909) which also made use of angular joins in the conception of the letters b, d, p, q, n, m and u (see Fig. 27). The diagonal endings of the angular strokes on the A, K, M, k, v, w etc. had already been seen before as well in Kabel (1928). Syntax had a refreshingly new and personal touch, primarily due to a complete reliance on roman type as a model, especially with regards to form and stroke use. Unfortunately, such a distinct reliance on form is almost always compromised as soon as other weights have to be drawn. A consistent design of the angular strokes was no longer possible in bold and extra bold, for instance. Today Hans Eduard Meier created a revised and extended Linotype Syntax family.

**Frutiger**
At the beginning of the 1960s, the idea of a sans serif hybrid was already beginning to take seed, as the matrix factory Sofratype in Paris was looking for a new sans serif look (Concorde 1965). Based on the same idea, in 1970 a signage typeface was developed for the Roissy airport navigation system which required optimal legibility. The entire structuring of the font and the solution of the final details could claim to have been 100 years in the making, drawing on the entire rich heritage of sans serif design. For Linotype, the typeface was later extended to a family with 11 weights. Here, as well, the degree of variation was
limited as, for instance, in the development of very wide or narrow styles. The only way to allow for infinite variants while maintaining consistent design was to ensure oblique endings of the curves, as in Univers (see Fig. 18). Bell Centennial (1938) could be considered the godfather of the Frutiger typeface family. To allow for best possible legibility in small sizes the type characters were reduced to a minimal, undecorated form. Details like the curve endings were kept very open and fortified with the addition of boldness. The figures in Bell (see Fig. 28) are a prime example of optimal readability. Today Adrian Frutiger and Linotype have improved Frutiger as a Platinum product which is called Frutiger Next.

**Eras**

In many respects, Eras (1976) by Albert Boton is a completely unique font, especially due to the wide, slightly diagonal layout and the maximal x-height. Another typical characteristic is the open loops on the a, P, R, 6 and 9 – a solution which suggests calligraphic influences. But despite these highly individual characteristics, the font design strictly adhered to a classic model, which is most certainly the reason why it was so quickly distributed around the world.

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A wide selection

The development of photosetting and then digital reproduction caused a substantial reduction in the costs of manufacturing type, i.e. through the introduction of electronic typefaces. The considerably enlarged memory capacities today mean that a wide selection of alphabets can be stored on a typesetting machine and are immediately available for use. Inspired by these factors, over the last decade, a variety of new creations have been introduced so today’s selection of fonts also includes a number of new sans serif styles.

Different strokes

A few sans serif types deserve at least brief mention here (see Fig. 29). In order to lighten up the sternness of the arrow straight lines, slightly bowed downstrokes were introduced. Morris Fuller Benton had already worked on this concept in his Clearface typeface family (1906). Recommendable modern versions include Mixage by Aldo Novarese and Bluejack by Phil Martin (Optima, Pascal etc. are often wrongfully classified in this group as they are clearly simply roman types without serifs).

Linear typefaces may also be lightened up with the addition of small serifs as, for instance, in Elan, Quorum, Serif Gothic and Newtext. In recent years, so-called rounded fonts have been created which feature characters with rounded off stroke ends, a somewhat purist approach to the abstraction of a line. Digital displays with their typical 7-segment characters inspired the use of diagonal stroke endings as can be seen in Quartz and Russel Square, for instance.

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An overview

As a summary, we provide a compilation of the most significant sans serif fonts on the market today (table 30). The alphabets are organized chronologically according to style. The old, classic weights come first, followed by the more contemporary ones afterwards.

1. Modulated Sans Serifs
   a. Old
      Basic Commercial™ Font Family

   Franklin Gothic Font Family

   Venus® Font Family

   b. American Gothic
      Bell Gothic™ Font Family

   News Gothic™ Font Family

   Trade Gothic™ Font Family

   Vectora™ Font Family

   c. Variants
      Antique Olive® Font Family

   Neuzeit S™ Font Family

   Univers™ Font Family

   Neulisk™ Font Family

   a. New
      Folio® Font Family

   Neue Helvetica™ Font Family

   Neuzeit S™ Font Family

   Univers™ Font Family
2. Art Nouveau
ITC Benguiat® Gothic Font Family

3. Constructed Sans Serifs
a. Old
Erbar™ Font Family

b. New
ITC Avant Garde Gothic® Font Family

4. New Sans Serif Hybrids
Linotype Aroma™ Font Family

ITC Eras® Font Family
Linotype Ergo™ Font Family
5. Stroke Variants
   a. Stretched
   Clearface Gothic™ Font Family
   ABCDEabcde12345$ 
   ITC Mixage® Font Family
   ABCDEabcde12345 
   b. Linear with serifs
   ITC Elan® Font Family
   ABCDEabcde1234
   Friz Quadrata™ Font Family
   ABCDEabcde123
   ITC Goudy Sans® Font Family
   ABCDEabcde12345$€
   ITC Newtext® Font Family
   ABCDEabcde 
   ITC Quorum® Font Family
   ABCDEabcde12345$
   ITC Serif Gothic® Font Family
   ABCDEabcde1234
   ITC Symbol® Font Family
   ABCDEabcde123
   c. Rounded
   Helvetica™ Rounded Black
   ABCDEabcde12
   VAG Font Family
   ABCDEabcde12345$
   Frankfurter™ Font Family
   ABCDEabcde12345
Elefont™ Font Family

**ABCDEFabcdef12345$**

d. Digital Segment
LCD™ Font Family

**ABCDEFabcdef12345$€**

Quartz Font Family

**ABCDEFabcdef12345$€**

Russell Square™ Font Family

**ABCDEFabcdef1234**

Linotype Atomic™ Font Family

**ABCDEFabcdef**

6. Experimental Sans Serifs
   a. Circular
   ITC Bauhaus® Font Family

**ABCDEFabcdef12345**

Blippo Font Family

**ABCDEFabcdef 1234**

Cirkulus™ Font Family

**abcdefabcdef12345$€**

Horatio Font Family

**ABCDEFabcdef12345$€**

b. Rectangular
   Eurostile™ Font Family

**ABCDEFabcdef123**

Microgramma Font Family

**ABCDEFabcdef1**

Serpentine™ Font Family

**ABCDEFabcdef123**

c. Others
   Amelia™ Font Family

**ABCDEFabcdef12345$€@**

ITC Machine® Font Family

**ABCDEFabcdef12345$€**

Peignot™ Font Family

**ABCDEFabcdef12345$**

Revue™ Font Family

**ABCDEFabcdef123**
Linotype Rezident™ Font Family

Sinaloa™ Font Family

Contacta™ Font Family

Countdown™ Font Family

7. Typewriter
OCR Font Family

Orator™ Font Family

ITC American Typewriter® Font Family

Ice Age Font Family

8. Capital Alphabets
Copperplate Gothic Font Family

Neuland™ Font Family

Stop™ Font Family

Check out our Keyword search to locate Linotype’s Sans Serif fonts.

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The History of Linear, Sans Serif Types

About legibility

It is difficult to evaluate the new sans serif types without the advantage of being able to look back on them through time. Legibility, however, is one criterion we can objectively assess today with considerable certainty. An alphabet which is widely accepted by readers, even when appearing in long passages and in a small point size, is almost guaranteed to become a lasting success. This is the same factor which has determined the selection of roman typefaces which have persisted over the centuries. And the same rules will certainly also apply to present-day sans serif types.

The process of reading can be explained as follows. Every reader has a so-called matrix of letter forms stored within their subconscious. When reading, the perceived characters are compared with those in this matrix and are either readily accepted or rejected as too foreign. As we are confronted with different styles of type everyday, gradually the matrix is expanded and the characters develop flexible contours, but only to a certain degree. Over the centuries, the limits of this range of readability have been rather clearly defined by the similar design elements of all roman type – elements which have reappeared again and again. Consequently, any new sans serif type which strives for optimal legibility will automatically fall into the same patterns (see Fig. 31).

Also here, a comparison with clothing can be very insightful. The inherent structure of a character could be compared with the naked human body which can be clothed in different styles of apparel (see Fig. 32).

Oversimplified basic patterns

As already indicated in illustration 26, new typefaces often try to press all the symbols used in the
alphabet into an oversimplified, usually highly geometric mold. Two typical experiments in this direction were Bauhaus and Serpentine. The first of these fonts attempted to use circles and circle segments as the main elements of character design, also forcing the highly important diagonal strokes to adhere to this principle. The latter font applied the rectangle as the basic design pattern; aside from the diagonals, all characters followed this pattern and the arc was completely banned from the inventory of forms.

**Without serifs**

The absence of serifs in general also has an influence on legibility. Often the serifs are the main elements of similarity between various forms of type. Since these elements always appear at the same points on a letter, they serve as an important recognition aid. For instance, the roman u is not simply an upside-down n as readers are not accustomed to seeing serifs protruding to the upper right on a lowercase letter (see Fig. 33 top). Exceptions to this rule can be found in lowercase letters which have maintained the forms of their capital counterparts either partially (k, y) or completely (v, w, x). Lacking these nuances, the more rudimentary sans serif characters require a more distinct and marked form. Serifs help connect individual letters to form a complete word; without them, a far more subtle and slightly condensed layout becomes necessary (see Fig. 33 below).

**The reading test**

In closing, it should once more be emphasized that all observations discussed here must be understood within the context of typeface and text. To demonstrate the discussed principles, 6 blocks of text written in various sans serif fonts have been placed next to each other for comparison (34). As a reader you are now invited to form your own opinion. As you read the individual texts take note of your readiness to continue reading but also any feelings of frustration. Human feelings are highly unpredictable. For this reason, longer passages of text should not appear too peculiar and thereby provoke a feeling of resistance in the reader – for the real purpose of a font is nothing more or less
than to be a quiet conveyor of human thoughts.

Adrian Frutiger