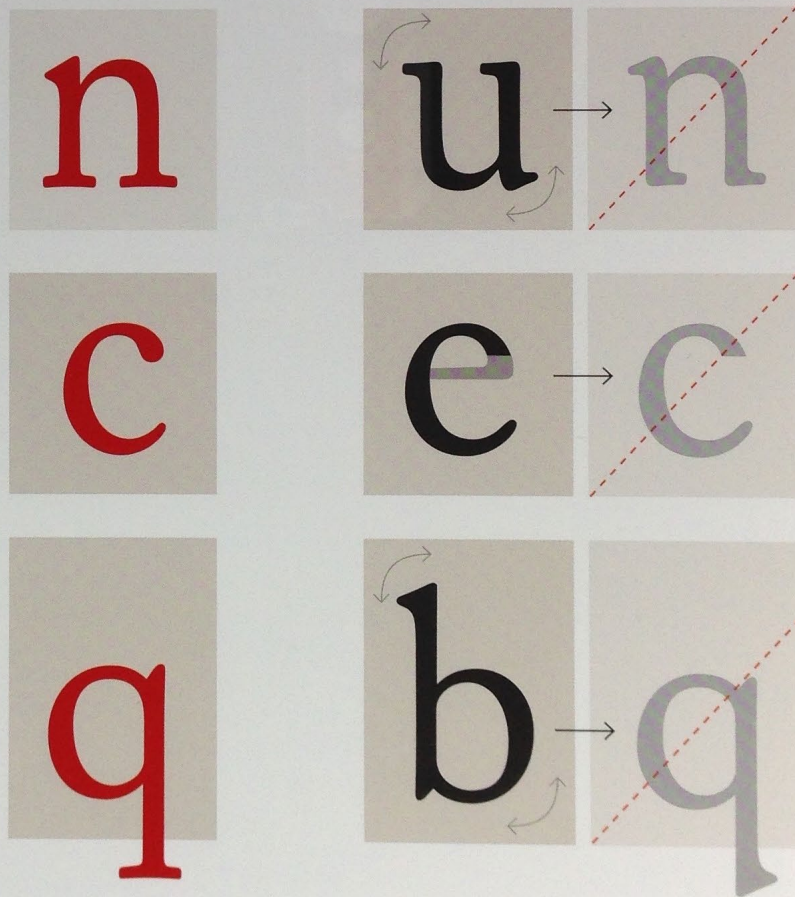


3

**Legibility  
in history**

Except for a number of printing houses famous for their exquisite work and craftsmanship, the main focus for most printers prior to the 20th century was on building a profitable business. The legibility of the type they applied was less essential. In the 1755 edition of *The Printer's Grammar*, the author John Smith described how printers living too far away from typefounders for a regular resupply could replace certain letters with others when the proper letters became broken. Listing these letters, Smith explains how the characters b-q, p-d and n-u may be rotated to replace one another; 'e' could be changed to 'c' by cutting out the central stroke; cutting the ascender off an 'h' could turn the character into an 'n', and cutting the 'n' part off the 'h' could make

→ Figure 3.1. A lack of respect for character shapes. If printers are short on certain sorts, author John Smith suggested in 1755 that they simply rotate or cut off elements of other letters. Illustrated with the revival Williams Caslon Text, created by William Berkson.

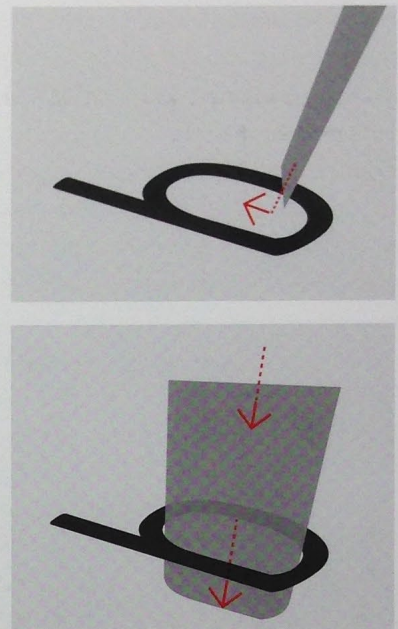


it function as an 'l'. At the time of Smith's writing, the Caslon Foundry was the most dominant in Britain; however, the serifs on the ascenders of 'd' and 'b' in these types are quite different from the serifs on the descenders of 'q' and 'p'; furthermore the 'u', unlike the 'n', has no serifs on the right side of the stems (Fig. 3.1). Based on this, Smith's ideas were most likely not something William Caslon himself would have approved of. Probably for the same reason, the 1787 edition of *The Printer's Grammar* no longer included the relevant paragraph.

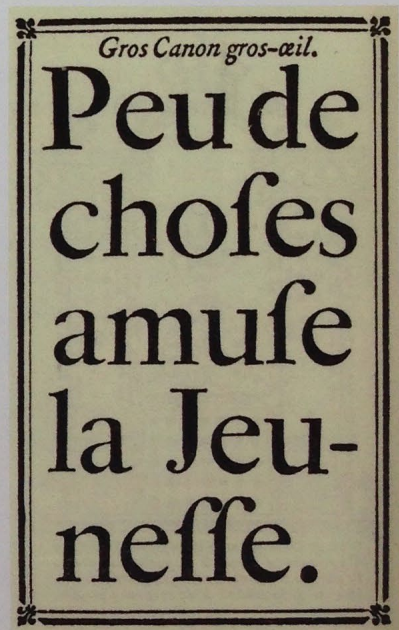
One of the most influential typefounders of his time, Pierre Simon Fournier (1712-1768), applied a commonly used practice of reusing the same counterpunch when creating the inner form of letter groups like 'b', 'd', 'p', 'q' and 'h', 'n', 'u'<sup>1</sup>. This method makes it a bit of a challenge to differentiate the individual characters. Fournier therefore had to find another solution, which he described in the preliminary note to his *Modèles des Caractères* of 1742: "I also have given the corners rather a squarer cut, and this I have done to some of the lower-case as well, and removed a certain roundness which was observable at the junction of vertical and horizontal strokes; this gives them an appearance of greater independence, separates the one from the other, and makes them more evidently distinct"<sup>2</sup>. By focusing on the overall features, Fournier managed to create letters of high individuality without undermining letter regularity.

The Didot family of printers and typefounders eventually became the leading figures in the French typography movement. As seen in the works of their contemporary typefounder and printer Giambattista Bodoni (1740-1813) in Italy, the Didot types evolved into designs with a high degree of internal similarity between letters. Although later criticised for their poor legibility, they were generally accepted by the public (see more in Chapter 14). One contemporary critic, however, was the Frenchman Sobre, who in 1800 explained his antipathy as follows: "The truth is that Garamond was careful to emphasise those parts of the shape of his types which distinguish them from one another—the ties for instance—while Didot emphasised those parts of the shapes of his types which are common to all". Sobre further theorised that in the 'u' and 'n' designed by Claude Garamond (d. 1561), the focus is on the top section of the 'n' and the

→ Figure 3.3. A large-size Fournier typeface. Note the difference between the aggressive diagonal shoulders of the characters 'h', 'm', and 'u', compared with the round, softer shapes of 'e', 'o' and 'e'.



↑ Figure 3.2. Counterpunch. There are two ways of creating the counters of letters in punchcutting. One is by digging the counter out with a graver (top); the other is by striking a counterpunch into the punch (bottom).



bottom section of the 'u', and therefore "you cannot for a moment be in doubt as to which it is"; he further argued that in the 'u' and 'n' of Didot's types, the connecting parts have such thin hairlines that "you have to use discernment to avoid confusing them"<sup>3</sup>.

In 1818, five years after the death of Giambattista Bodoni, Bodoni's widow finished and published his *Manuale Tipografico*, which showed specimens of his many typefaces. Here Bodoni discussed the regularity and harmony within the units of the letters and stated that "the standardisation of every thing which is not in itself distinctive, and the accentuation, so far as is possible, of the necessary marks of differentiation, will impart to all the letters a certain schematic regularity"<sup>4</sup>. Bodoni's later work did not demonstrate a high concern for letter differentiation, yet a look at his earlier typefaces reveals features that appear to some extent to bear out the statement above. In the example from 1789 shown in Figure 3.5, the difference in axis between the vertical 'o' and the diagonal 'c' and 'e' emphasises a distinction between these characters. Also, the top of the 'f' is rather heavy, which helps differentiate the letter from 't'.

↓ **Figure 3.4. Lack of differentiation in the Didot fonts.** A comparison between the Garamond 'n' and 'u' (left), and the Didot 'n' and 'u' (right) demonstrates the argument of Citizen Sobre that the characters of the Didot fonts add emphasis to similar features while downplaying features that are different. This is also evident in the letters 'c' and 'e', whose distinctiveness in the Didone faces relies solely on the hairline crossbar of the 'e'. Here demonstrated with Adobe's Garamond Premier Pro and H&FJ Didot.

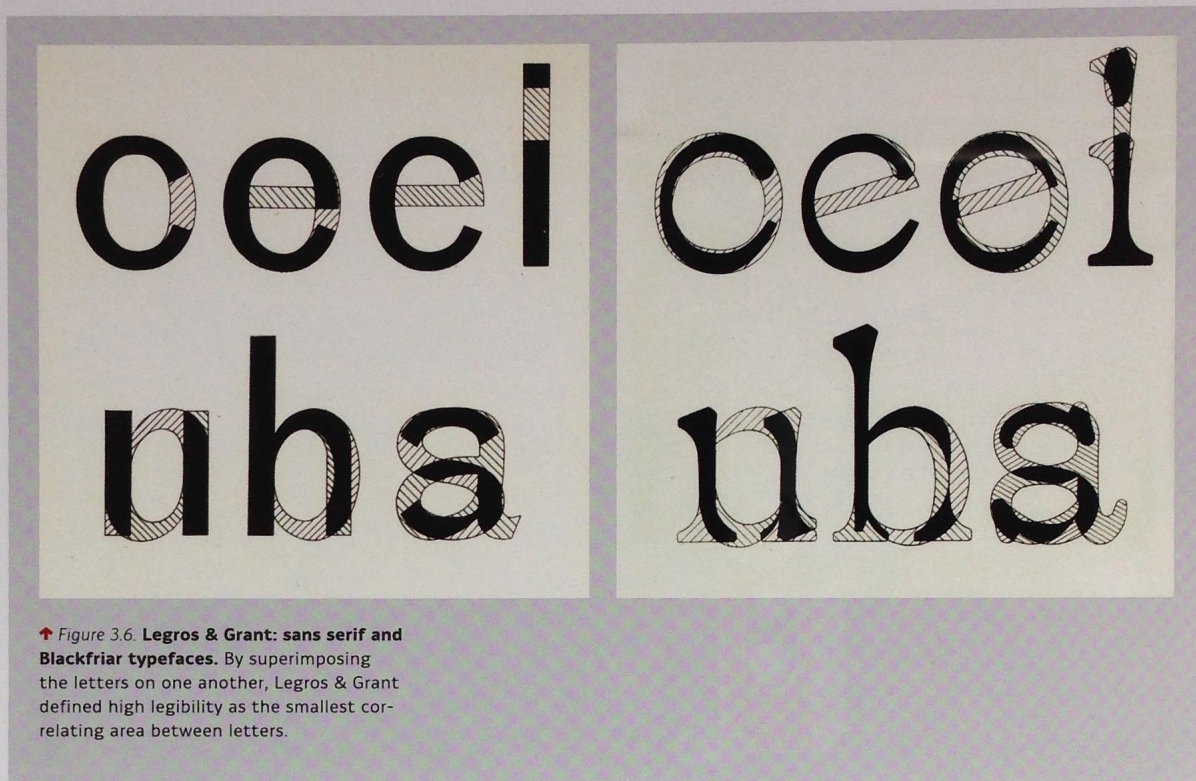


→ Figure 3.5. Early type by Bodoni. Showing the Transitional style features of 'c', 'e' and 'o'. Furthermore, the teardrop of 'f' is much heavier than any other teardrop, giving emphasis to the ascending parts that differentiate 'f' from 't'. Image from Bodoni's *Anacreontis Teii Odaria* of 1789.

inter Batavos Literatores. Quo  
no MDCCXXXII Traiecti ad  
num ANACREONTIS odaria, et  
menta a se castigata, notisque  
rimis aucta contradidit Guil  
KROON, ut graece, ac latine  
lo mandaret, quod artifex ill  
fecit forma, quae nuncupatur  
ta. Verum quo spectent o  
PAVVII consilia partite disp

Based on the assumption that legibility is defined by the smallest amount of correlation in the surface of the characters, Lucien Alphonse Legros and John Cameron Grant<sup>5</sup>, one an engineer and the other a writer, set out in 1916 to test the legibility of a range of typefaces (Fig. 3.6). The work was carried out by calculating the number of units (each one thousandth of an inch) in a square covering each character in a typeface. The theory was that high legibility would be equal to a low number of shared units across letters within the same design.

It is apparent that the repetition of shapes and low contrast, which is dominant in the applied sans serif, performs rather badly under the circumstances described above, whereas the more organic Blackfriars offers a much



↑ Figure 3.6. Legros & Grant: sans serif and Blackfriar typefaces. By superimposing the letters on one another, Legros & Grant defined high legibility as the smallest correlating area between letters.

better result. The authors recommended the kind of serif applied in Old Style typefaces, as they found that "a heavy serif adds considerably to the non-coincident areas of the *il*, *un*, and *bh* pairs of lowercase characters"<sup>6</sup>. This study is interesting in that it has a clear mathematical approach to the argument of enhancing the individuality of characters. However, it fails to elaborate on the central issue of cohesiveness within the characters of a font. Later research<sup>7</sup> has demonstrated that reading performance worsens when the letters come from a mix of two fonts of different typefaces, compared to when they come from a single font. A designer who followed the Legros & Grant approach blindly would obtain high scores in terms of creating a typeface with characters that have no features in common; that does not, however, mean that the typeface would perform well in a normal reading situation, where some level of uniformity must be expected.

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