Dimensional relationships in the composition of text

This publication has the aim of helping students to compare dimensional relationships in text composition.

To make comparison possible, the specimens are set in the form of a two-dimensional array.
The array is shown six times to introduce two type faces in three sizes of type.

Throughout the work the fixed factors are:

the literary content;
the number of lines per specimen;
the use of roman characters;
the space between words relative to type-size.

Word space is standardised at 4 units of set.

The dimensions chosen for comparison are:

columns with maximum possible line lengths of 27, 20 and 13 pica ems;
line feeds (base-line to base-line dimensions) of 8, 9, 10, 11 and 12 points.

The type faces and sizes chosen are:

Monotype Baskerville, series 169, 8-pt 8¼ set, 9-pt 9 set and 10-pt 10 set;
Monotype Gill Sans, series 262, 8-pt 8 set, 9-pt 9 set and 10-pt 9½ set.

Note:

Type-size is a vertical (y-axis) dimension.
Set, or set-width, is a horizontal (x-axis) dimension.
In the Monotype system of measurement, one unit of set is one-eighteenth part of the set value of a type face.
Set values are expressed in Anglo-American points.
  1 point = 0.0138 in.
12 points = 1 pica em.

PB

The text used for the specimens is taken from *Rational Typographic Design*,
a paper given by Maurice Goldring MSIA, Cert HfG (Ulm),
to the 1966 International Computer Typesetting Conference.

An extract from the paper is reproduced here with the kind permission of the author.

A rational approach is needed for the preparation of typographical format specifications and for program writing. The professional typographer who, in addition to his or her traditional concern for appearance and legibility, has an adequate knowledge of the editing, data-processing and economic factors involved in computer composition can help to achieve this.

Non-justification as a functional requirement

Much computer composition is wasteful and perpetuates poor typographic practice, such as arbitrary and excessive hyphenation, indentation and justification. The report of the proceedings of the first International Computer Typesetting Conference shows that many delegates became preoccupied with the problem of justification, to the exclusion of the setting of unjustified lines with a clear syntactic grouping, having equal spaces between words, as is traditional. Today more and more newspapers, periodicals, children's books, catalogues, directories, stationery, etc, are being set unjustified. Does one have to accept, as is still claimed, that by long tradition, the printed page must consist of justified lines with centred headings? It appears that neither on the grounds of economics nor of legibility is this likely to remain standard practice and that ranging left to functionally determined vertical axes will take its place, at least as far as European languages are concerned.

Those typographers who have formed the mainstream of functional and humanist thought in European typography during the last quarter of a century take the view that unjustified setting is desirable because it enables many practices such as uneven word spacing, word breaks, and widows (one-word lines at the ends of paragraphs) to be eliminated. Whether word breaks occur in justified or unjustified setting is a problem where hyphenation techniques apply with equal validity. A problem for unjustified setting only is that, instead of having to hyphenate individual words, attention needs to be paid to word-group breaks which must be related to the structure of the sentence rather than allowed to occur by chance.

As the computer line-printer can only printout with non-variable spacing, printout texts are unjustified, as with a normal type-writer. If the printout is acceptable in an unjustified form, why should the final printed product always need justification? The answer may lie in the house style of particular printing firms and in an all too ready acceptance in some composing rooms that only bilateral symmetry can be aesthetically pleasing. The concept of symmetry is fortunately not restricted to that of bilateral relationships. Translative symmetry (parallel displacement) is also of importance in those fields of typography where data requires tabulation as in the presentation of much scientific and technical information.

However, it should not be assumed that the author considers that unjustified setting should replace justification in all circumstances. Multi-column unjustified setting in newspapers, journals and books can be very effective, but can also present problems when the figure/ground effect takes place. This occurs when a white inter-column space is perceived as 'toothing' into the text to its left with a high degree of tonal contrast which can sometimes amount to glare. It is caused by a combination of factors, such as the visual weight of character image, set, word spacing and vertical spacing (inter-linear spacing), and can seriously prejudice legibility. But the same factors also arise in justified setting and can have an effect which is just as disturbing. Here the glare is to be found within the rectangular shape of the justified column alone. For example, after reading a few closely set paragraphs of text in some sanserif faces, the contrast is sufficient to create an after image in the eye when the blackness of the type will be perceived as grey, as will also the white inter-linear spaces. In situations of extreme glare coupled with eye fatigue, the result can be near illegibility. The writing of programs for computer composition should therefore always be such that the various items which make up the typographical format specifications do not produce the glare described above.

One often hears the argument that justification is necessary in order to save paper and keep costs down. But in traditional book printing practice, as much as 50 per cent of the page area may be left white as a consequence of using a system of proportioning to determine the position and size of the type area, which is in no way related to the needs of production or to those of the reader. The economies which justification can achieve may therefore not be all that real in traditional practice. Against this, the economies which are gained through less keyboard time being required for unjustified setting are well known.

Monotype Baskerville 169 ; 8-pt 8¼ set

Word space, 4 units of set

Maximum possible line length (measure) in pica ems
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Monotype Gill Sans 262; 9-pt 9 set

Word space, 4 units of set

Maximum possible line length (measure) in pica ems
27

Line feed, in points   8

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Word space, 4 units of set

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