Legibility

The visual clarity of text, generally based on the size, typeface, contrast, text block, and spacing of the characters used.

Confusion regarding the research on legibility is as persistent as it is pervasive. The rapid growth and advancement of modern desktop publishing, Web-based publishing, and multimedia presentation continue to compound the confusion with increasing font and layout capabilities, display and print options, and the need to effectively integrate with other media. The following guidelines address common issues regarding text legibility.[1]

Size

For printed text, standard 9- to 12-point type is considered optimal. Smaller sizes are acceptable when limited to captions and notes. Use larger type for low-resolution displays and more senior audiences.[2]

Typeface

There is no performance difference between serif and sans serif typefaces, so select based on aesthetic preference. Sentence case text should be used for text blocks. On low-resolution displays, antialiasing the text may marginally improve legibility, but primarily serves as an aesthetic enhancement of the typeface.[3]

Contrast

Use dark text on a light background or vice versa. Performance is optimal when contrast levels between text and background exceed 70 percent. Foreground/background color combinations generally do not affect legibility as long as you observe the minimum contrast level, so select based on aesthetic preference. Patterned or textured backgrounds can dramatically reduce legibility, and should be avoided.[4]

Text Blocks

There is no performance difference between justified and unjustified text, so select based on aesthetic preference. For 9- to 12-point type, a line length of 3 to 5 inches (8 cm to 13 cm) is recommended, resulting in a maximum of about 10 to 12 words per line, or 35 to 55 characters per line.[5]

Spacing

For 9- to 12-point type, set leading (spacing between text lines, measured from baseline to baseline) to the type size plus 1 to 4 points. Proportionally spaced typefaces are preferred over monospaced.

See also Iconic Representation and Readability.

[1] The seminal empirical works on legibility for print are *Bases for Effective Reading*, University of Minnesota Press, 1963; and *Legibility of Print*, Iowa State University Press, 1965, both by Miles A. Tinker. A comprehensive and elegant contemporary reference from a typographic perspective is *The Elements of Typographic Style* by Robert Bringhurst, Hartley & Marks (2nd ed.), 1997.

[2] Legibility research on low-resolution computer displays continues to yield mixed results but generally supports Tinker's original findings. However, be conservative to account for lower-resolution displays.

[3] On lower-resolution displays and for type smaller than 12 point, use sans serif typefaces without antialiasing. Serifs and antialiasing blur the characters of smaller type and, therefore, compromise legibility.

[4] Dark text on light backgrounds is preferred. High-contrast, inverse text can "visually bleed" to the background and dramatically reduce legibility. Factors other than legibility should be considered when selecting foreground/background color combinations (e.g., color blindness and fatigue), so select carefully and test atypical combinations.

[5] The speed with which text can be visually processed is greatest on long text lines (80 characters or more). However, readers prefer short text lines (35 to 55 characters). Unless visual processing speed is critical to the design task, shorter text lines are recommended. See, for example, "The Effects of Line Length and Method of Movement on Patterns of Reading from Screen," by Mary C. Dyson and Gary J. Kipping, *Visible Language*, 1998, vol. 32(2), p. 150–181.

Size

This is 9-point Trade Gothic This is 10-point Trade Gothic This is 12-point Trade Gothic

Typeface

Serif vs. San Serif

Serif typefaces have small “feet” at the ends of the letters.

Serif
Sans Serif

Uppercase vs. Mixed Case

People recognize words by letter groups and shapes. Uppercase text is more difficult to read than sentence case and title case because the shapes of uppercase words are all rectangular.

Antialiased vs. Aliased Text

Antialiased text looks smooth because of pixels added to smooth the transition between the text color and the background color. Aliased text looks jagged because it does not contain these transition pixels.

Text Cases

This is sentence case
This is Title Case
this is lowercase
THIS IS UPPERCASE

Alice's Adventures in Wonderland
ALICE'S ADVENTURES IN WONDERLAND

Contrast

The Mad Hatter The Mad Hatter The Mad Hatter

Textblocks

Aligned Left, Ragged Right Text

Soon her eye fell on a little glass box that was lying under the table: she opened it, and found in it a very small cake, on which the words “EAT ME” were beautifully marked in currants.

Justified Text

Soon her eye fell on a little glass box that was lying under the table: she opened it, and found in it a very small cake, on which the words “EAT ME” were beautifully marked in currants.

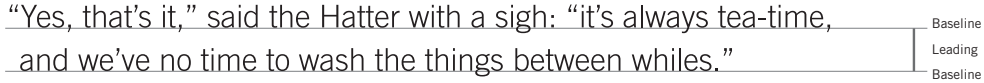
Aligned Right, Ragged Left Text

Soon her eye fell on a little glass box that was lying under the table: she opened it, and found in it a very small cake, on which the words “EAT ME” were beautifully marked in currants.

Spacing

Leading

Leading (rhymes with sledding) is the amount of vertical space from the baseline of one line of text to the baseline of the next line of text. Below, the type size is 12 points and the leading is 18 points.



Monospaced vs. Proportionally Spaced Typefaces

In monospaced typefaces, all characters assume the same amount of horizontal space. In proportionally spaced typefaces, characters assume variable amounts of horizontal space, depending on the width of the actual character and the relationships among groups of characters.

"Off with her head!" the Queen shouted. monospaced typeface
"Off with her head!" the Queen shouted. proportionally spaced typeface