

**TYPOGRAPHY: LEGIBILITY
AND READABILITY**

Typographic clarity comes in two flavors: legibility and readability. Even though much of the typographic community treats them as such, they are not interchangeable terms. Different typefaces have varying degrees of legibility; while typography should be readable.

Legibility is generally considered to be the ability to distinguish one letter from another in a particular typeface design.

Readability, on the other hand, is the degree of ease with which typography can be read. As a result, it is possible to use a highly legible typeface and create unreadable typography. While carefully constructed, readable typography cannot restore missing legibility to a typeface design, it can enhance the message presented by a less than ideal typeface.

For practical purposes, the definitions are not all that important. It is, however, important to be aware of the factors that can affect typeface legibility, and the ways readability can be enhanced—or reduced—through typographic arrangement.

Studies and Reports

Most people in graphics have heard about legibility and readability studies and their re-

sulting reports. You know, the ones that typophiles refer to when they discuss legibility or readability, and supposedly answer all questions about these two tonics. Well. Referring to these reports and actually trying to use them can be two very different things. In fact, just trying to find them is difficult.

They are not in neatly bound volumes readily purchased at the local bookstore. Chances are the public library doesn't have them. Teachers of the communication arts do not often make them available to their students, and manufacturers of typesetting and printing equipment do not include them in their corporate libraries.

So what and where are these mythical studies? For the most part, they were published as articles in trade journals and scholarly magazines, where writing was the topic, not printing.

Some, in the interest of supplying related information, did begin, however, to address some typographic issues. The trouble is, the issues addressed offer little information in any depth. For example, many of the reports were published prior to the 1950s their coverage of legibility factors have little relevance to current

typeface designs. Often the typefaces surveyed are from a very narrow range of the typographic spectrum—newspaper faces were too frequently the topic of discussion.

It is not unfair to say that many of the reports and studies were (and still are) of little practical value; in a very real sense, they are unnecessary. The information needed to determine the legibility of typefaces, or to insure the readability of typography, is not complicated—mostly it's just a matter of common sense.

Typeface Legibility

Typeface legibility is not something over which individuals have any control. The degrees of legibility, or lack of it, are already established by the type designers when the faces are made available.

First, not all typefaces are created with legibility as a primary design function. Many are drawn for the purpose of creating a typographic personality, or providing a particular spirit or feeling to typeset communication. Unfortunately, to the degree that a typeface has personality, spirit, distinction, or “a feel,” it often suffers proportionally on the legibility scale. Like the movie sound track, most legible typefaces are those

ITC Bookman®
 Century Schoolbook
 Excelsior
 ITC Franklin Gothic®
 Univers

Fig 1—Highly legible typefaces

which tend to be transparent. They present the information in a clear, concise manner and call no attention to themselves. Highly legible typefaces are those like Century Schoolbook, Excelsior, ITC Beckman ITC Franklin Gothic or Universe. Many other faces fall into this category (Fig. 1), but the idea that these are not the Bomberes, or Calypsos (Fig. 2) of the typographic palette.



Fig 2—Typefaces of limited legibility

Not all typography should be invisible. There may be times when you wish to create a special feeling, or use a typeface that will add a distinctive quality or spirit to the typography. If you know what to look for in typeface design you can choose faces with the assurance that the ultimate goals of your graphics will be met.

Generally, the most legible typefaces are those which offer big features and have restrained design characteristics. While these attributes may seem contradictory, actually

they are not. “Big features” refers to things like large, open counters, ample lowercase x-heights, and character shapes that are obvious and easy to recognize (Fig. 3).

Legibility

Fig 3—Open counters and easy to recognize character shapes

The most legible typefaces are also restrained, in that they are not excessively light or bold; there is moderate



Fig 4—large x-height improves legibility

contrast in stroke thickness; their weight changes within characters are subtle; and if serifs are present, they are not overly elongated, very thin, nor extremely heavy.

Open counters help to define character; it is believed that the additional white space within certain letters such as the “o,” “e,” “c,” etc., helps to influence their recognition. A byproduct of such open counters is usually a large x-height. As long as it’s not excessively large this can also tend to improve typeface legibility (Fig. 4).

Over 95% of the letters we read are lowercase composition. Within sensible limits, the larger the proportions of the lowercase characters, the more legible the letters are. Taken to

“h” horn limit “n” norn limit

Fig 5—Characters begin to look too similar with excessively large x-heights.

the extreme, however, the opposite effect can result. Typefaces with an excessively large x-height suffer in legibility because their ascenders and descenders begin to lose their definition (Fig. 5) lowercase “h’s” begin to look like “n’s,” “d’s” or “q’s” like “a’s,” and “i’s” like “l’s.” Also the white space which surrounds a character and begins to define it is reduced as the x-height increases. In addition, when the various lowercase letters are combined into a word the ascenders, descenders, and x-height characters create an overall outline shape that is stored in the reader’s mind and serves as an identifier when the word is seen again. As the x-height of a typeface begins to increase beyond a reasonable point, the outline shapes of words set in it become less defined. Typefaces like Antique Olive, while popular (and just



Fig 6—More legible (l) and

within acceptable design limitations for display typography), are usually outside the realm of good text typography.

Individual letter shapes can also affect typeface legibility. Ideally, letters should be distinctive and easy to recognize. For example: the two storied “a,” like the one found in ITC Mixage,[™] is much more legible than the single storied “a” found in Futura[™] or Revue[™] (Fig. 6). The lowercase “g” based on roman letter shapes is more legible than the simpler ‘g’ found in Helvetica’s[™] or Rockwell[™] Letters of high legibility are the lowercase “d,” “m,” “p,” “q,” “w” and virtually all the capitals. Low legibility letters are the “c,” “e,” “i,” “n,” “1.” Sans serif typefaces generally tend to be slightly more legible than serif designs; their shapes are simpler. This is why many children’s “first books” are set in modified sans serif designs. In the early stages of learning to read, children read individual letters rather than the words, or groups of words, as does the proficient reader.

Too much contrast in

biped

Fig 7 — Fine hairlines and heavy strokes can cause confusion

stroke thickness, especially if the weight changes are abrupt, can detract from character legibility. Fine strokes (or hairlines) like those found in Bodoni or Walbaum have low levels of visibility, especially if they are overpowered by very heavy

contrasting strokes. The eye tends to see just the heavy strokes and letters can easily be confused with other similar letters. (Fig. 7). If the transition

ITC Bookman[®]
ITC Souvenir[®]
Times Roman

Fig 8—Good weights for

between hairlines and heavy strokes is gradual this condition is improved.

Typefaces that are very bold or exceptionally light tend to rate low on the legibility scale. In this regard, the results of various legibility studies seem to be valid and consistent. It has been found that optimal character stroke thickness is about 18% of the x-height letters. Typeface weights like the Light of ITC Bookman[®] and ITC Souvenir,[®] or the Medium of Times Roman[™] fall into this general cate-

fourth
lunar eclipse

Fig 9 — Fun to look at—

gory (Fig. 8). As to departures from the norm, lighter faces tend to be more legible than heavier weights of type. They enable full, open counters and unmodified character shapes. Many bold and black designs become only caricatures of the original design with very small



Fig 10—Less than ideal

counters and drastically modified letter shapes. Gill Sans Kayo is a perfect example: it is lots of fun and commands attention in a headline, but severely taxes our ability to differentiate character shapes (Fig. 9).

In serif typefaces, individual letter legibility begins to suffer as serifs take on exaggerated shapes. Very long serifs, or those which are exceptionally heavy, will detract from individual letter legibility; as do those which have unusual or highly modified shapes (Fig. 10).

Ideal serifs are somewhat short, slightly bracketed, are heavy enough to be obvious but not very obtrusive. ITC Novarese[®] or ITC Cheltenham[®] have perfect examples of serifs.

Italic letters are among our most beautiful typographic tools. They are beautiful, but unfortunately they are not always very legible. Words set in italics are not as easy to comprehend as those set in normal roman designs. As a result reading speed is reduced—by as much as 20 words per minute. Apparently, even average readers are aware of italics’ drawbacks, because a number of legibility studies indicate people do not prefer reading copy set in italic de-

signs. Italics can be analogous to rich or exotic food. They add variety to our basic menu and, at times, they might be the perfect choice. Too much, or indiscriminate use, however, can cause problems.

As a graphic communicator, you have no control over typeface legibility. But you do, in most cases, have control over the typefaces you use. By choosing faces that are legible, or at least provide an acceptable degree of legibility, you are creating a sturdier graphic foundation for all your work.