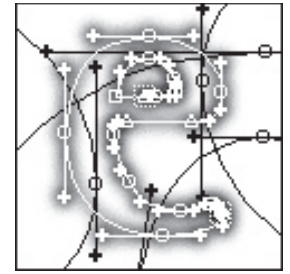


# *A Good Font is Hard to Find*



Or: Why some fonts are more expensive than others

*With the proliferation and ease-of-use of inexpensive software that anyone can use to create typefaces with, I hear many people ask, "Exactly what is it that makes a good typeface?" And also, "Why do some fonts cost so much?" I asked one of my favorite type designers, Garrett Boge, to elaborate on these questions. The following is his response (with my two bits thrown in here and there).*

## **Aesthetics of typeface**

Before we talk about the actual production of a typeface, let's talk about its design characteristics. After all, if a design isn't worth producing, why bother with the technical side of font production?

### 1) Design

The design of a typeface is an aesthetic judgment, and the range of opinions is wide and getting wider. But each type designer must ask the question, "Do I believe sufficiently in this design to spend the amount of time, effort, and resources (including money) to see it through to completion, which could take from three weeks to several years, depending upon the design and the parameters of its intended use?"

### 2) Character and Individuality

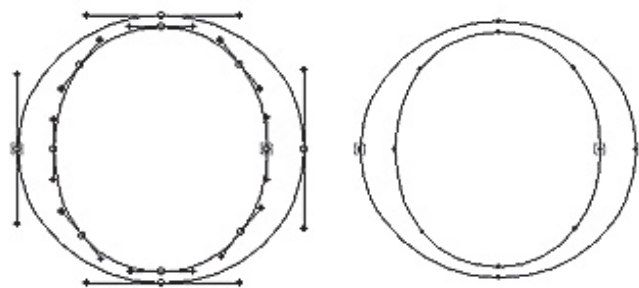
A type design is like a person: the type designer crafts the personality of the design by giving it a link to known archetypes (letters) and by infusing these forms with qualities of expression that make it unique and distinctive from the universe of type (otherwise, why bother?). This process (which might be termed "creativity") draws on many realms: historical anteced-

ents; the designer's own interests, biases, and values; and other influences that may be below the level of cognition. Successful designs find a good balance between form and originality, with good tension between readability and noticeability.

### 3) Integrity

Just as a person has an inner essence of purpose and indestructibility (a soul?) even though outwardly diverse and complex, a type design needs a unifying sense that reconciles its multitude of details. If the design grows out of the designer's own experience and a critical eye for relationships and variation, this unifying sense necessarily unfolds. But if the design is slapped together on a rush, dictated by a committee, or executed heartlessly as a work-for-hire it may be soul-less. [It is distressing how many designs lack this sense of wholeness.]

## **Technetics**



*This letter has anchors at the outermost edges, and the control points at these anchors are at right angles. This creates a clean character that will print quickly and easily.*

Assuming the aesthetic need is met, certain technical components are also key to "good

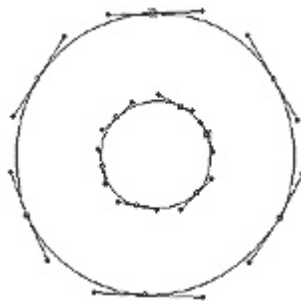
type" - which may be better termed "good fonts."

### 1) Digitizing

A computer "font" (as opposed to the typeface "design") is a mathematical formula that determines how the design is printed or displayed on the screen. Since this mathematical code will always be the source for the look of the typeface, it is imperative that the code be clean and efficient. The commercial and proprietary software available writes the font math code as the designer creates the typeface; any such software that is kept current and supported by the developer should be adequate to the task.



*Even such a ragged edge doesn't need this many points! More points means more data that has to be processed by the printer.*



*This letter is cleaner, but the anchor points are not at the outermost edges and they are not at right angles. It's not a big problem - it just indicates a less-than-professional job.*

The more critical component of quality - the actual digitizing of the letterforms - depends on the knowledge and skill of the person doing the digitizing. Autotracing, though an effective step in capturing artwork, is usually problematic in a font if the resulting outlines are not edited or redrawn for the purpose of final encoding. To optimize each character, outlines need to be digitized meticulously with a minimum of anchor points, and the points need to be placed

strategically.

If a typeface is poorly digitized with too many anchor and control points or if the handles of the points overlap, the font often has trouble printing, especially to high-resolution output. This causes endless grief for you, the user. Most cheap fonts are not well digitized because they were either batch-processed (in the case of "500 fonts for \$19"), or were created by people having great fun with Fontographer (most shareware fonts), or were created quickly by someone who didn't really care about the face.

Test for good digitizing: Open the font file in a font editing program (e.g., Fontographer) or convert sample text to outlines in an illustration program (e.g., FreeHand or Illustrator). If the type is rendered smoothly with a minimum of points (preferably fewer than 20 per character) and there are right-angle points at the horizontal and vertical extremes of the characters, you can be assured that the font is well digitized.

### 2) Color & Spacing

It is impossible to speak of either color or spacing without the other. Color (the pattern of density of the character strokes, not "color" as in crayons) is invariably linked to the spacing of the character strokes, both internal (counters, the spaces inside the shapes) and external (character advance widths, or how far it is to the next character).

The classic standard is for a smooth, even "color" of a mass of text type. Today, our reading habits are in flux, and a range or variation in text "color" is more acceptable. As you've surely noticed, expressive display type may break this rule entirely. But both designer and fontographer must carefully consider the overall impression of a block of text, and digitize accordingly.

### 3) Character Set

A "good font" has characters in all of the character slots. A casual user may not notice if a yen

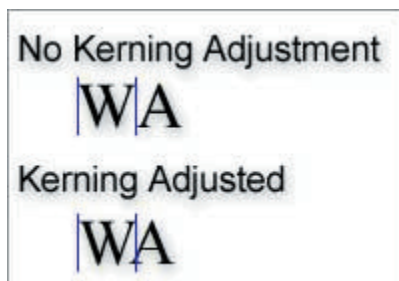
or paragraph symbol is missing, and, in fact, some of the symbols are marginally useful at best. But their appearance in the font is a good indication that the type designer/font team intended the typeface for serious, professional use, which also indicates they were probably conscientious with other less-noticeable details.

Test for full character set: Try setting the paragraph mark, copyright symbol, and the German double-s. If these all show up, chances are the font's character set is complete.

- ¶ Mac: Option-7 / Windows: Alt 0182
- © Mac: Option-G / Windows: Alt 0169
- ß Mac: Option-S / Windows: Alt 0223

#### 4) Kerning pairs

To prevent awkward spacing between certain pairs of letters, such as "To," a type designer can create "kerning pairs." This is code built into the font that tells your page layout software to use the special built-in spacing (kerning) between those two letters instead of the regular spacing. (Most word processors don't read the kerning pairs, which is why type generally looks better when set in a page layout application. No web browser at the moment can read kerning pairs.)



Though attention given to the number of kerning pairs built into a font is often overstated, the presence of a kerning table in a font is an indication of quality, if simply because it implies hand-work on the part of the font technician [Fontographer's dreadful auto-kerning routine notwithstanding!). All fonts will benefit from the addition of some kern pairs. But don't be snowed by the claim that a font has "over a thousand" or more kern pairs; ironically, fonts

with the best global spacing (determined by the digitizer) require the smallest number of kern pairs - often as few as 150-200.

Test for kerning pairs: Set the words "Tip Top AVATAR" and the contractions "don't" and "she'll." If you see awkward gaps between letters or if some characters collide, the font probably lacks any kern pairs.

#### 4) Hinting

Hinting (also known as an "instruction set") is the component of the font code that makes the type look and printer better at small sizes or low resolution. [Type output to a high-resolution printer or used on the screen in a large size doesn't need hinting because the shapes can be drawn accurately.]

Global hinting parameters (such as regularized stem weights, vertical alignments, curve-fitting, and controlled diagonal stair-stepping) are generally adequate instruction sets for text type, especially if destined for print output. All current commercial software for creating fonts provides basic auto-hinting routines. For precise control over low resolution rendering (such as text intended for use on the screen and on the web), manual hinting with specialized font tools is the only solution. As with design work, it is the skill of the technician that determines the quality of a hand-hinted font, and in fact it could take as much time and effort to manually hint the font as it took to design the typeface to begin with. This area of attention to detail is one of the current benchmarks distinguishing technically superior fonts from the mass of "Fontographer-generated" fonts on the market.

Test for global hinting: On the screen, set some sample text at 13 point. If it is easy to read, the vertical stems are consistent in pixel width (probably, a single pixel), and there is no detectable bouncing along the tops and bottoms of characters, the font has decent global hinting.

For the grueling test for manual hinting: Change the text size to 7.5 point. If the type

turns to unreadable shchmutz, there is no hand-hinting; if it's easy to read and has a regular vertical pixel pattern, it is probably a hand-hinted TrueType font - this is where Microsoft's system fonts shine.

For a real-world test: Simply use the font at the size and on the device that you intend. If it's clear and clean and you don't experience problems recognizing important details, it is suitably hinted for your purpose.

### **More is not better**

When you see an offer for "500 fonts for \$19," you can be pretty well assured that the designers of those fonts are not being compensated for their work. Part of the price of a professional, well-designed typeface is a royalty for the person/team who did the work!! Duh. It takes a great deal of time and a great deal of skill and experience to create a beautiful, lasting typeface. Like anyone else, type designers are working for a living and like to get paid for their work. Please honor that.

### **Latest and greatest font formats**

Along with death and taxes, you can add "new-and-improved font formats" to that short list of things we can always count on.

#### OpenType

The digital world has just about assimilated the great schism between PostScript and TrueType, and now along comes "OpenType." Ostensibly a unifying format that will resolve user confusion over competing formats, this joint initiative of Adobe and Microsoft promises to "just make fonts work, on any computer, platform, or media." Also built into the format is the ability to add functionality, through database "libraries," such as contextual character substitution and on-the-fly spacing adjustments that have been pre-programmed into the font. Experience suggests that these new functionalities may challenge the stated goal of assuring that fonts "just always work." Nevertheless, enterprising font folks (besides, of course, Adobe and Microsoft)

are beginning to jump onto this wagon to be among the first to offer Open Type fonts. Time will tell if it will enjoy a better fate than Apple's once widely touted GX.

Test for OpenType: Well, you can't really check them out until the fonts are actually available and until applications are upgraded to support the format.

#### Unicode

The current system for coding letters and other symbols you see on your screen is called ASCII. With ASCII, we can create a maximum of 256 slots to create characters (or "glyphs," which means any letter, number, punctuation, dingbat, or other shape), as well as the tab, return, word space, etc. in a font. It's limited to 256 slots because ASCII is based on eight bits of information (one bit is one electronic pulse, those "ones" and "ohs" you hear about). There are only 256 different ways to rearrange a set of eight 1s and 0s, which isn't nearly enough to create the characters necessary for non-Roman languages like Japanese or Chinese.

Unicode, however, uses sixteen bits, so a font can contain over 65,000 different glyphs (you can rearrange sixteen 1s and 0s in over 65,000 different ways). Unicode is a world-wide initiative that's been around for years to ensure font encoding compliance for all major language systems. However, Unicode is now being earnestly adopted by computer systems vendors, text-rendering engines, world-wide-web consortiums, and font foundries as the way to assure compatibility into the future, as computing and the web become less of a "Western" phenomenon and more of a world-wide experience. Though most Western users of fonts won't notice or feel they need this feature, Unicode-compliance and extended language support will become an increasingly important feature and indication of a font's quality and functionality. It is unlikely that very many full-Unicode fonts will be developed because the specifications call for a potential of more than 65,000 glyphs to support all of its world scripts, but in fact

some are being developed. Fonts that are being revved for OpenType will be Unicode-compliant for their glyph range.

Test for unicode: If you're using an alternate-language version of a software program, especially Eastern European or Asian, glyphs should appear as specified by the unicode-compliant application.

## **Sources**

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