OpenType *Features*

OPENTYPE FONTS (.otf)

An intelligent font format introduced initially in 1995,

OpenType was a product of earlier experiments

by Apple and Adobe to develop a font format that was

capable of being used cross-platform on Windows

and Macintosh operating systems. This format allows

for advanced coding features to instruct

typeface behavior, and a large character set that can

accommodate all typographic needs in one file.

COMPARISON OF POPULAR FONT FORMATS

POSTSCRIPT (.ps)

- *256 glyphs per font*
- *Cubic Bézier curves*
- *Each file isolated to one operating system; Only compatible on Mac OS or Windows.*
- *Each font contains two files; a font suitcase for screen preview and a PostScript file for printer use.*

OPENTYPE (.otf)

- *65,535 glyphs per font*
- *Cubic Bézier curves*
- *Cross-platform; Works on both Mac OS & Windows.*
- *Everything is bundled into one font file.*
- *Universal font format*
- *Capable of advanced coding features and file construction to allow control of font behavior & to make use of the full unicode map.*

TRUETYPE (.ttf)

- *65,535 glyphs per font*
- *Quadratic Bézier curves; better for screen hinting.*
- *Cross-platform; Works on both Mac OS & Windows.*
- *Everything is bundled into one font file.*
- *Excels primarily in screen settings*

POSTSCRIPT EXPERT FONTS		OPEN TYPE PRO FONTS
Garamond Regular		
Garamond Expert Regular	→	**Garamond Regular Pro**
Garamond Alt Regular		

Prior to OpenType font technology, the dominant file format for the printing industry was the PostScript (.ps) file format. Due to this format being limited to a character set of only 256 glyphs, it required several files, often called expert fonts, in order to provide small caps, oldstyle figures, and mathematical forms.

LATIN PRO CHARACTER SET

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h
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G̃ 1 2 3 4 5 6 7 8 9 (1 2 3 4 5 6 7 8 9) 1 2 3 4 5 6 7 8 9 n Z Ω Z K Å ℮ e ∑
∏ √ µ ∞ ≈ ≠ ∫ ≤ ≥ 0 fl fi ch ck fb ff ffb ffh ffi ffj ffk ct ɑ ɐ ɾ ɯ k † …

Allows support for the 121 languages that use the latin script.

All typographic elements within one font file.

OPEN TYPE CODE

OpenType code is a simple coding language that is used primarily to instruct the usage of any given glyph inside the font as the font designer best sees fit. Common instances of OpenType code are character substitutions for ligatures or alternate characters such as small capitals and oldstyle figures. Some scripts such as Arabic require OpenType code in order for the language to be written properly.

```
feature locl {

    script latn;

        language NLD exclude_dflt;
            lookup DutchIJ {
                sub IJ by IJ.dutch;
            } DutchIJ;

} locl;
```

DISCRETIONARY LIGATURES

The Discretionary Ligatures feature quite literally means ligature forms that are implemented at the typographer's discretion. These tend to be ligatures that are more stylistic in nature than the standard ligatures and combine frequently occurring pairs into a single, graceful letterform design.

A DISCRETIONARY LIGATURE

c + t = ct

With discretionary ligatures turned on, if c is followed by t, the font will substitute with the special ct ligature.

STANDARD LIGATURES

ff fl fi ffl

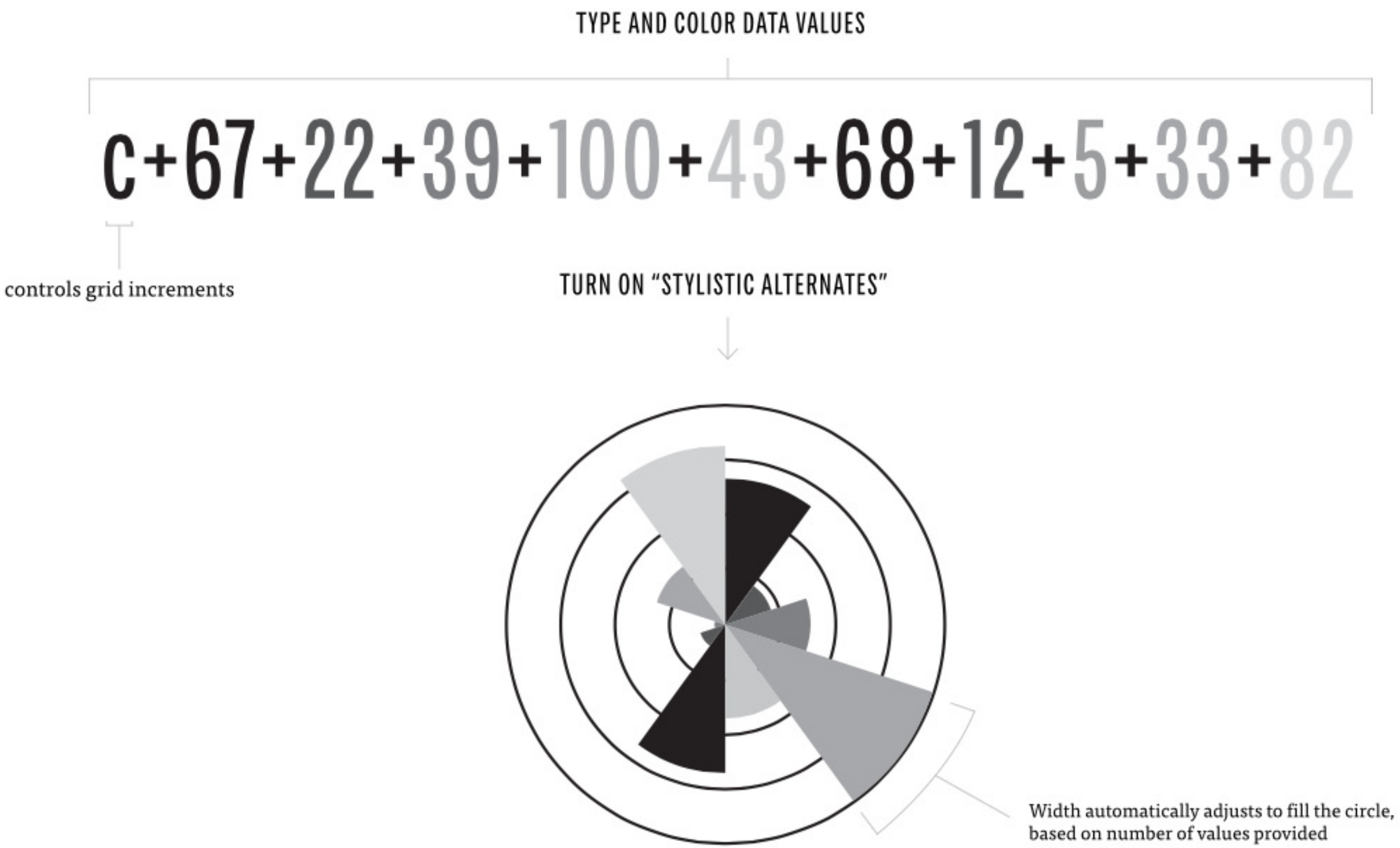
CONTEXTUAL ALTERNATES

The Contextual Alternates feature allows the font designer to instruct a font's behavior and how glyphs should respond to one another on their left, right, top, and bottom surfaces. This function is used for character substitutions, but is also essential to the writing of many language scripts such as Arabic.

مع الحب العميق

```
sub beh-ar by beh-ar.init;
sub teh-ar by teh-ar.init;
sub theh-ar by theh-ar.init;
sub jeem-ar by jeem-ar.init;
sub hah-ar by hah-ar.init;
sub khah-ar by khah-ar.init;
sub seen-ar by seen-ar.init;
```

مع الحب العميق



FF Chartwell, a typeface that utilizes OpenType contextual alternates to produce various graphs from data entered by the user.
https://vimeo.com/41772735

RANDOMIZATION

Some typeface designers utilize OpenType code to create fonts that randomly place alternative letterforms to create the appearance of a handwritten text. This means that if letter ‘a’ is typed four times in a sentence, the same ‘a’ will not occur twice. This type of feature is pre-determined by the type designer, and we have no control over its function. This is made possible by contextual alternates.

LetterMixer
Every ‘a’ has a different shape. Being the main ingredient of all features in Liza Text Pro, the LetterMixer takes care that letters appear in a different shape every time. Note that the differences between all alternates for each letter are not so extreme as in Liza Display Pro.

Liza Pro by Underware Fonts is a prime example of using contextual alternates to produce an intelligent randomization system within a script typeface.
http://www.underware.nl/fonts/liza/preface/

STYLISTIC SETS

Type designers can create several variations of their alphabet design and make them available for us to use through the creation of stylistic sets. This can be as simple as a font designer having designed a single-story ‘g’ and a double-story ‘g’, and wishing to offer both as an option to use. To save the time, a font designer will program each set to utilize certain forms on the keyboard by default.

Meganico

Stylistic Set One

Meganico

Stylistic Set Two

CAUTIONS

There are some technical cautions to be aware of when using OpenType fonts:

- Not all applications fully support OpenType features.

  These include Microsoft Word and PowerPoint.

- Use discretion when selecting swash and flourish characters. *Sometimes it is best to select these manually from the glyph palette to allow control of where swashes are placed.*

RECOMMENDED READING

- Dan Ratigan talks about OpenType fonts
  http://www.monotype.com/blog/articles/qa-dan-rhatigan-talks-fine-tuning-fonts/

- Underware case study: Randomness vs. Cleverness
  http://www.underware.nl/case-studies/random-vs-clever/