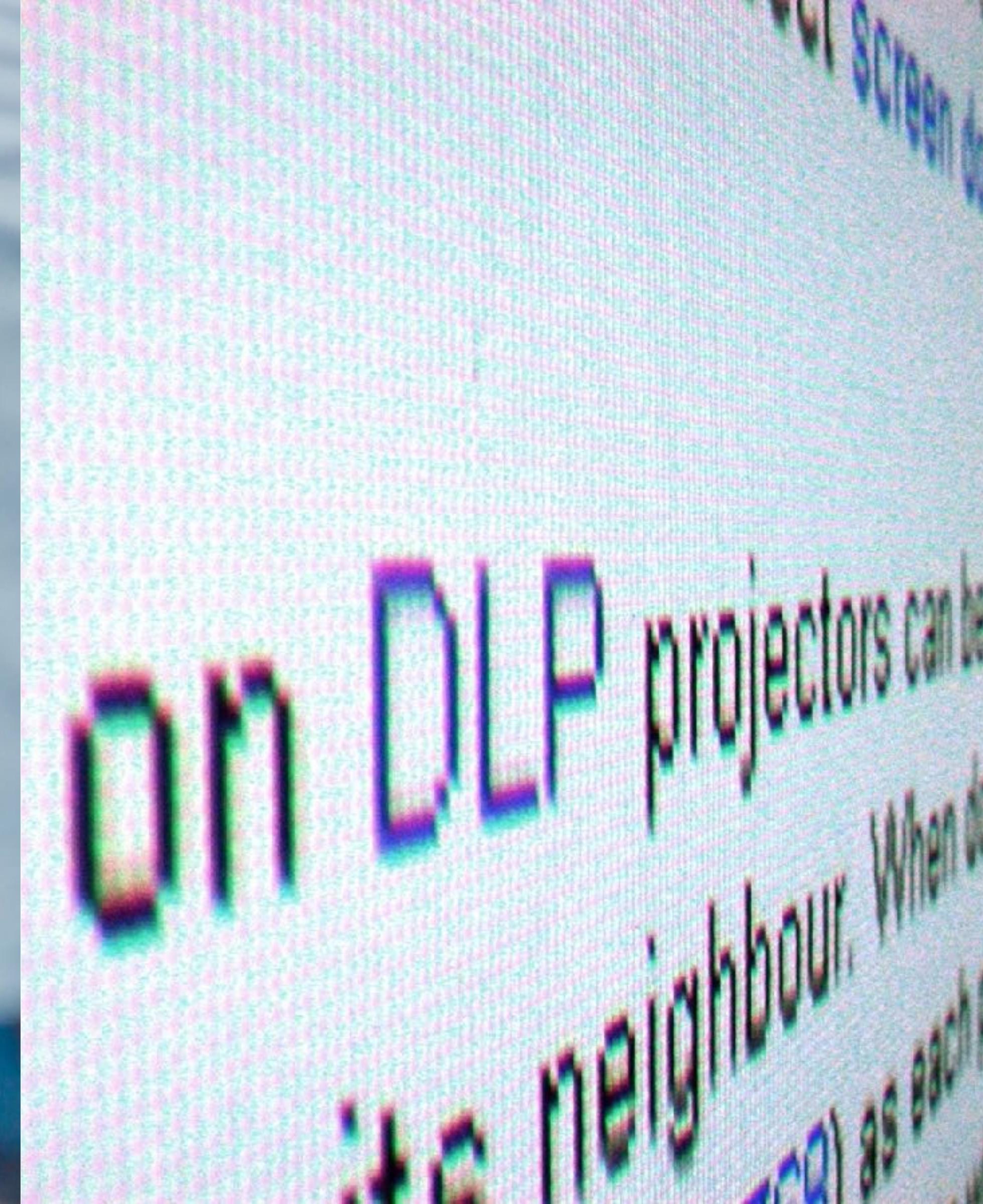
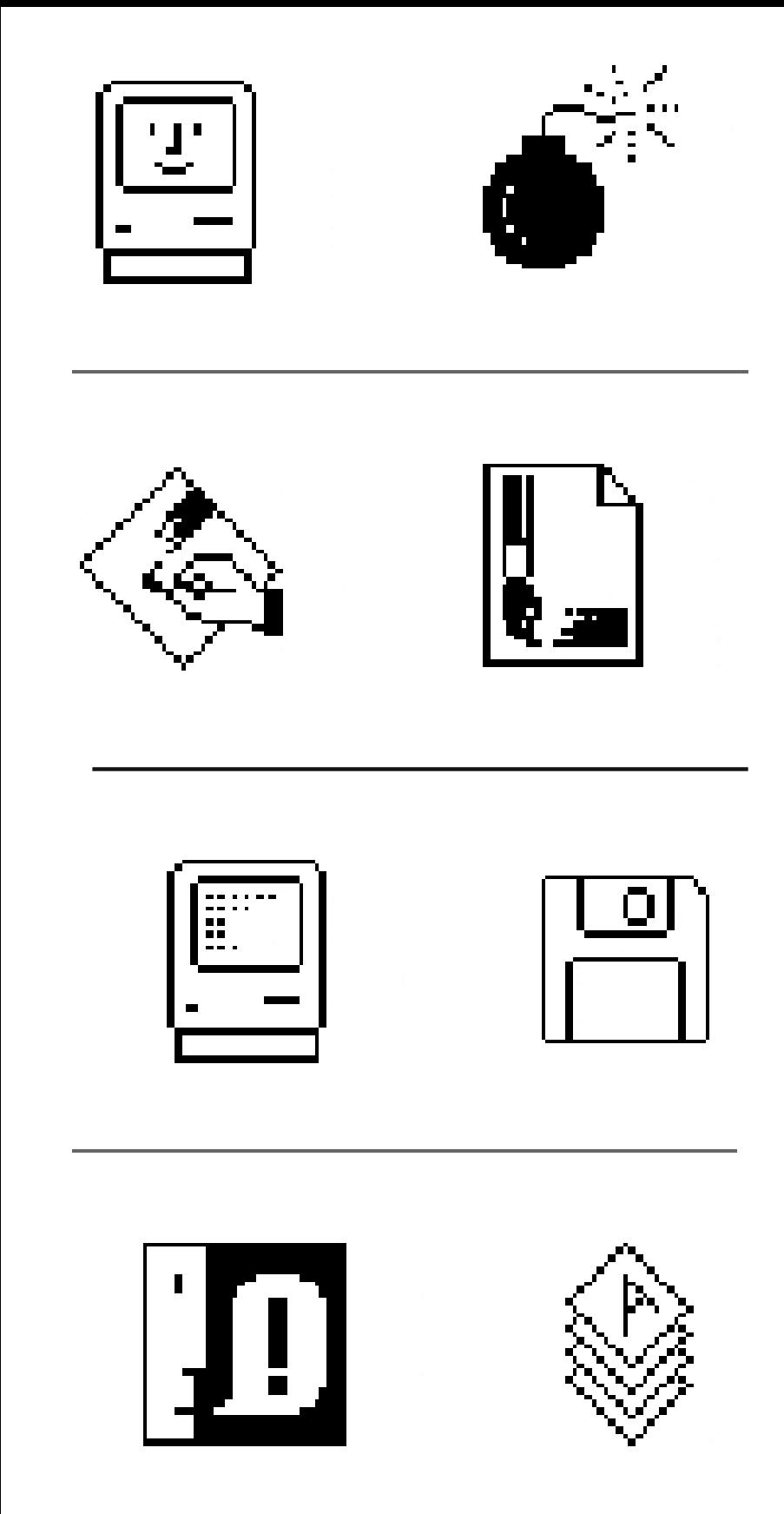


# Digital Fonts

und ihre Geschichte in Kürze



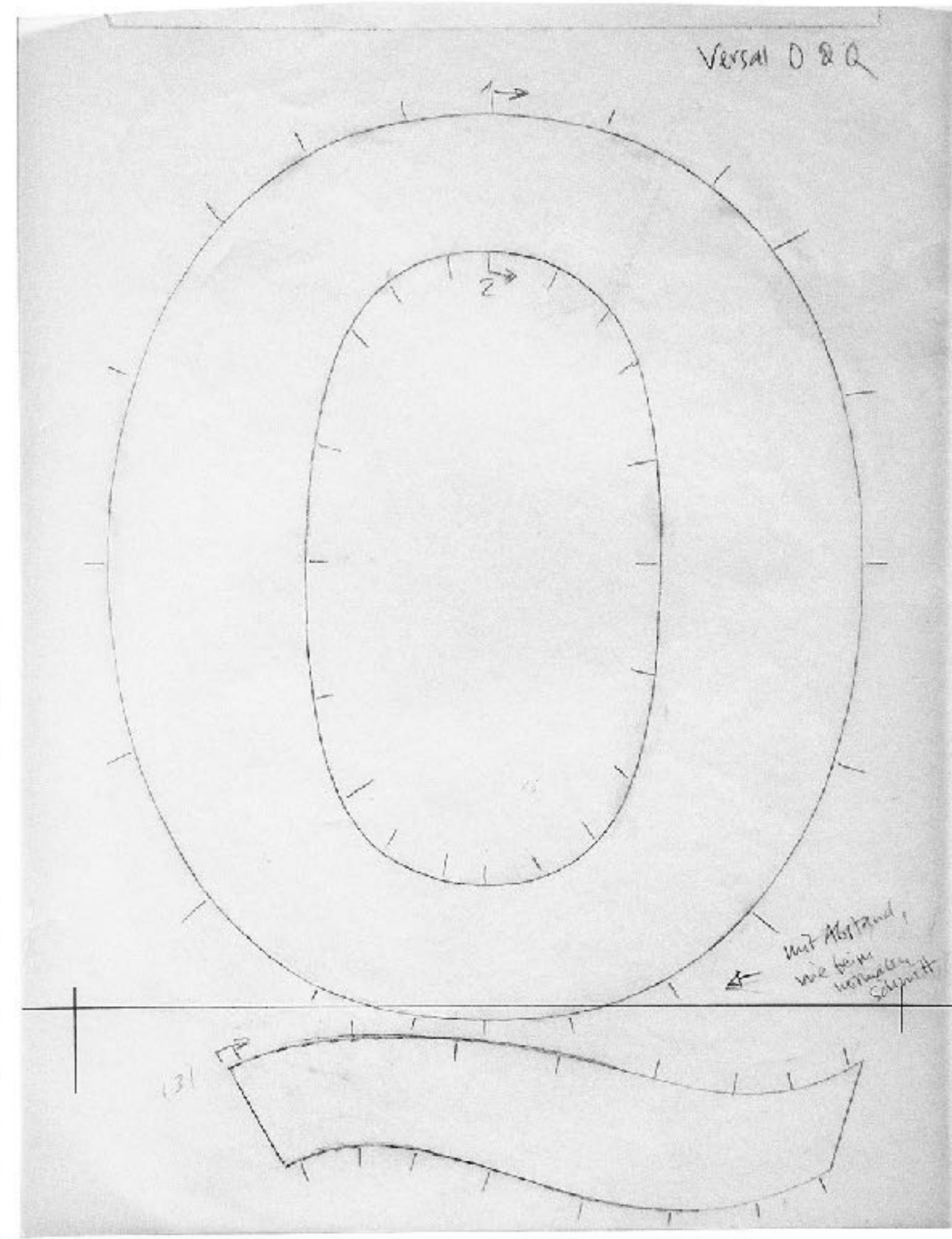
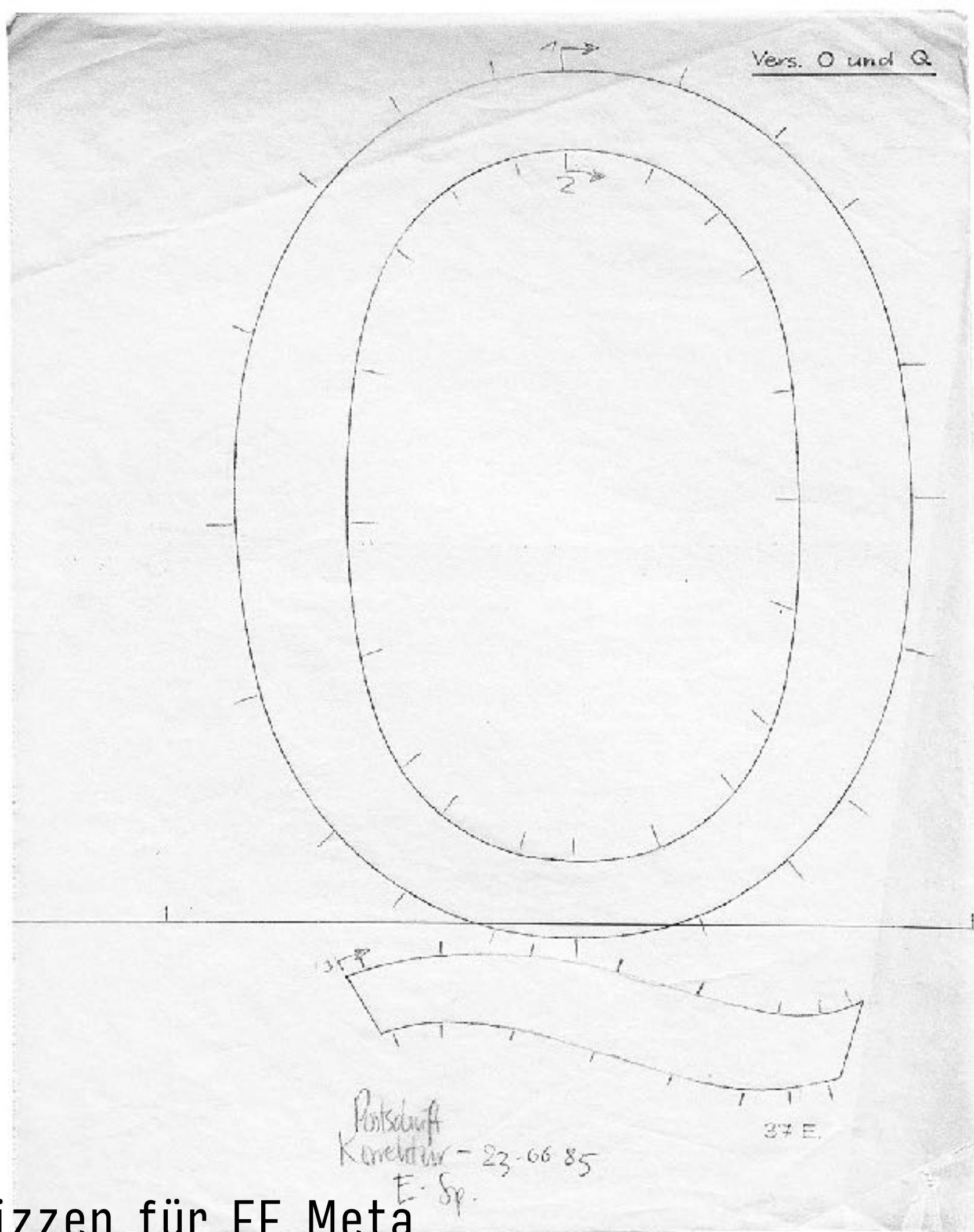
# Erste digitale Schriften





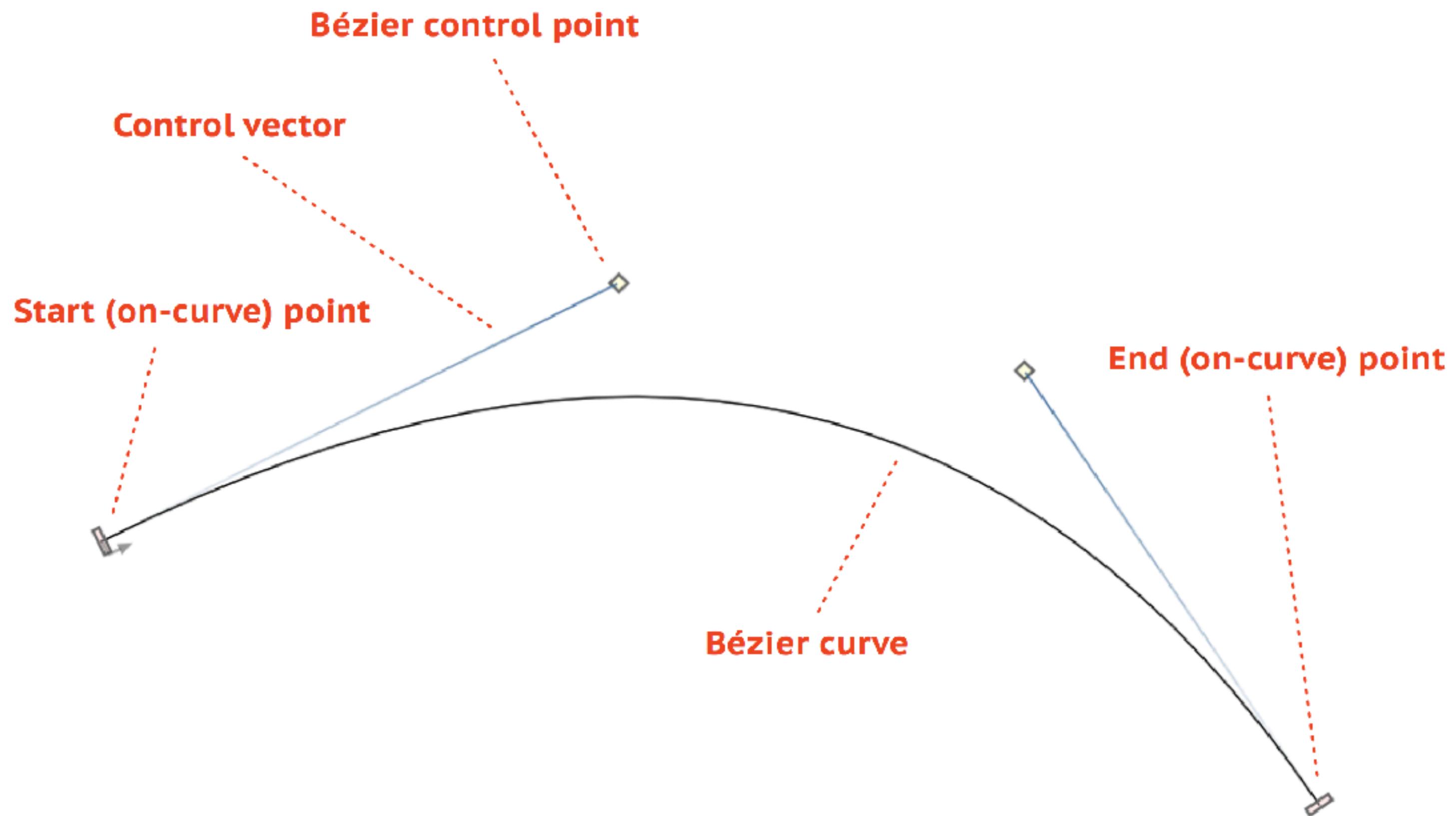
## Apple Macintosh mit Ikarus M

(Rekonstruiert mit E. Spiekermanns Sammlung, Foto: Norman Posselt, © F. Ulrich)



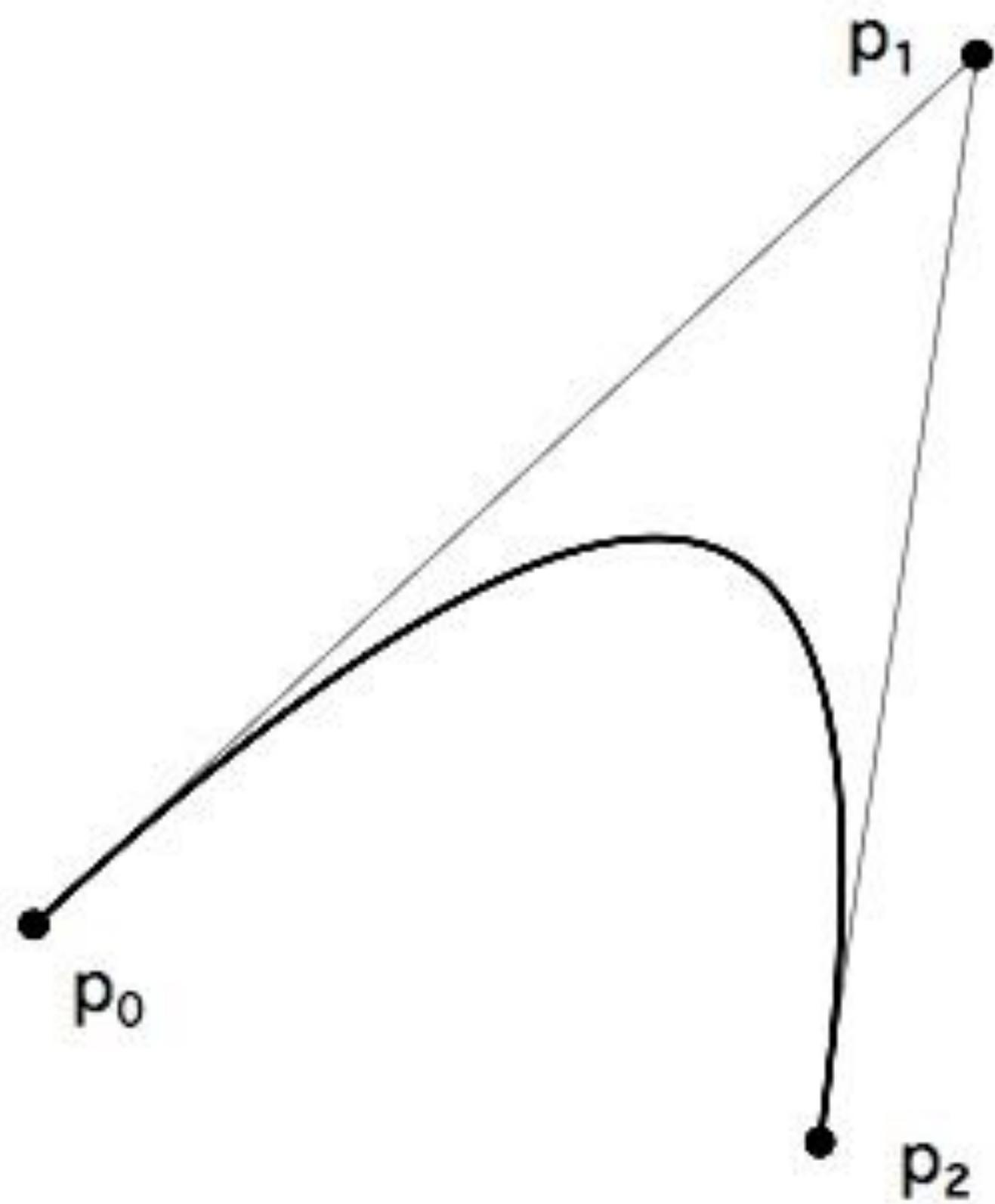
# Skizzen für FF Meta

(© E. Spiekermann)



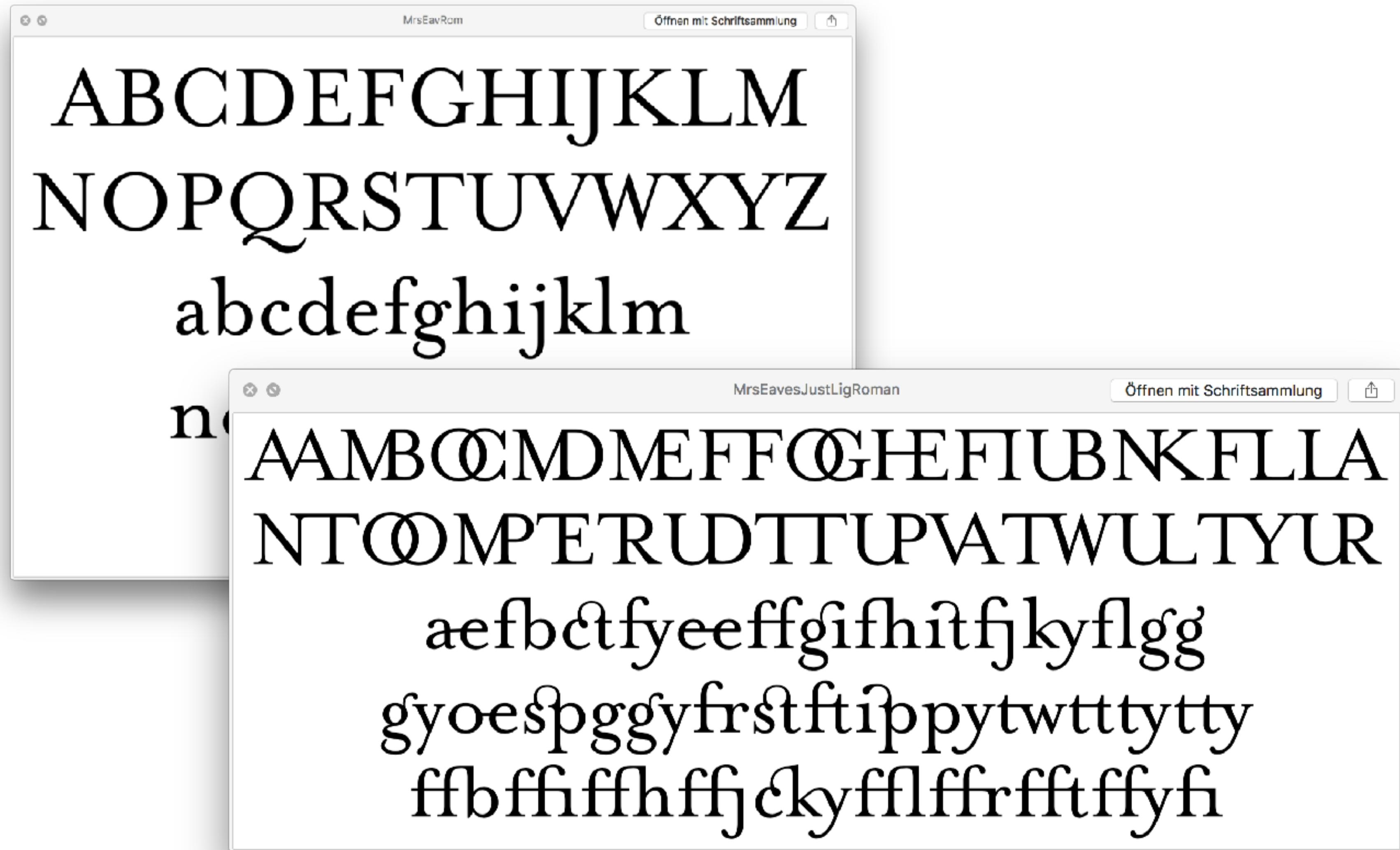
Postscript Kurve

Bild: fontlab.com



TrueType Kurve

Bild: apple.com



Postscript/TrueType-Fonts bisher

# Unicode Tabelle

wikimedia.org



# OT Features

Stylistic sets 7 and 8 off

*Bartali & Coppi & Magni*

Stylistic sets 7 and 8 on, respectively (italics only)

*Bartali & Coppi & Magni*

Default / lining figures

On 15 January 1963 at 8pm

Oldstyle figures

On 15 January 1963 at 8pm

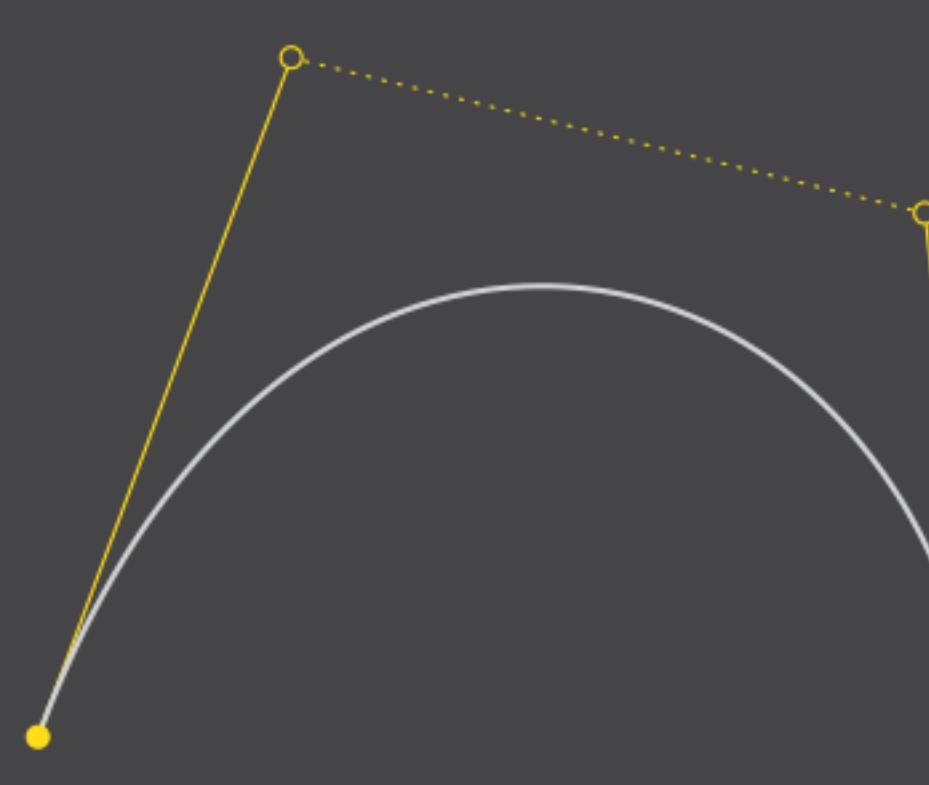
Dynamic fractions on

13<sup>23</sup>/<sub>45</sub> 165<sup>35</sup>/<sub>100</sub> 01/01/2018

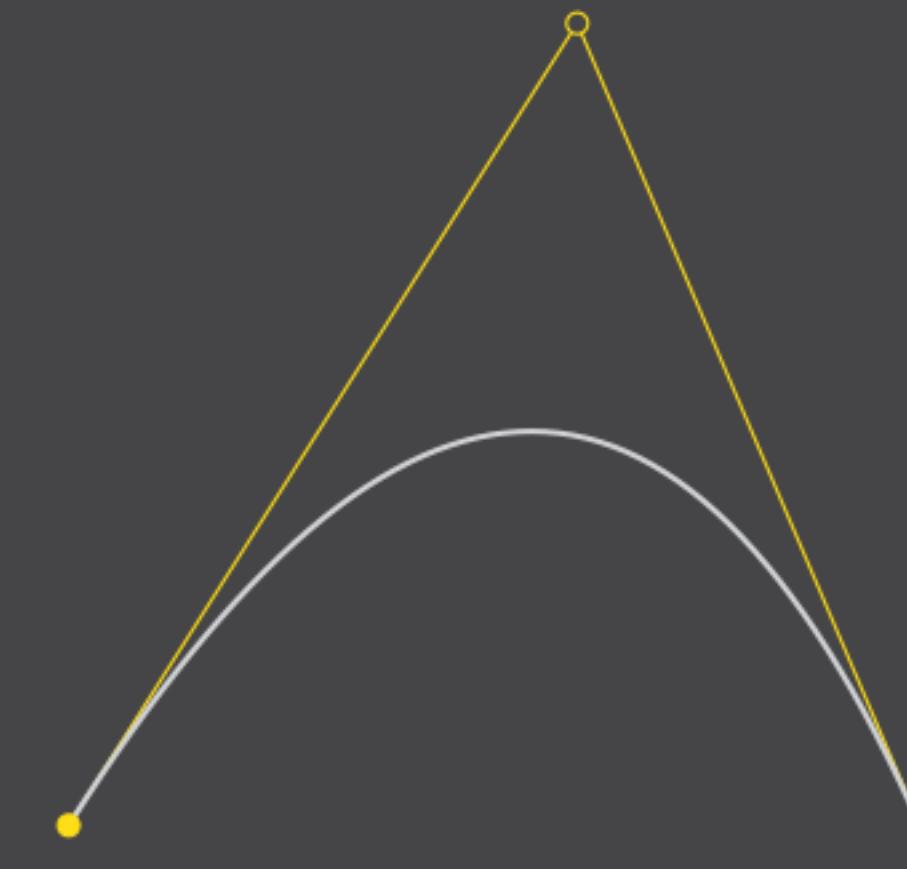
Tabular figures on

\$62984+177901606171+2639184112=14  
5716916717193901727150960×1693703  
83710235902357982786421890235301€

# Postscript vs. TrueType



Postscript Outlines  
Cubic curve



TrueType Outlines  
Quadratic curve

# 1 Format, 2 Ausprägungen

OpenType

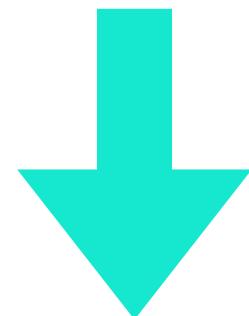
Postscript Flavour

PS

CFF

Type 1

(meistens .otf)

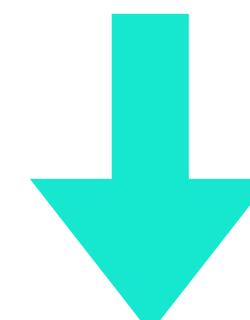


OpenType

TrueType Flavour

TT

(meistens .ttf)



Desktop- und Apple-Anwendungen

PC- und Web-Anwendungen

Frutiger® 45 Light Font - Lizenz X +

linotype.com/de/1270240/frutiger-45-light-product.html

Apps WebTech Sketch Creative Coding CAS Digital Type Zukunft Z type

Linotype Originals > Frutiger > Frutiger > **Frutiger 45 Light**

# Frutiger 45 Light

Frutiger® Schriftfamilie  
Entworfen von Adrian Frutiger (1985)

FONTS

DESKTOP WEB DIGITAL ADS APP EPUB SERVER

FRUTIGER

45 Light

Computer(s): 5 Sprache/Format:  
Latin Extended (Pro) Wählen Sie das technische Format und den Sprachausbau.

PRO / OT CFF supports at least 33 Sprachen.

TEXTVORLAGEN ZEICHENTABELLE TECHNISCHE DETAILS

Bitte Beispiel-Text eingeben Textvorlagen :

A B C D E a

€ 39 inkl. MwSt.

IN DEN WARENKORB

In Favoriten aufnehmen

BESONDERHEITEN

linotype.com

# Web Open Font Format

.woff2

- komprimiertes Fontformat
- eigenes Lizenzsystem
- Plattform übergreifend
- von allen gängigen Browsern unterstützt

# Kurze Geschichte der Fontformate

1975: Kurven mit Ikarus M

1984: Postscript von Adobe

1991: Truetype von Apple und Microsoft

1996: Opentype Font Format, 65'535 Glyphen

2008: Truetype Webfonts (Safari), SVG und EOT (Internet Explorer)

2010: woff

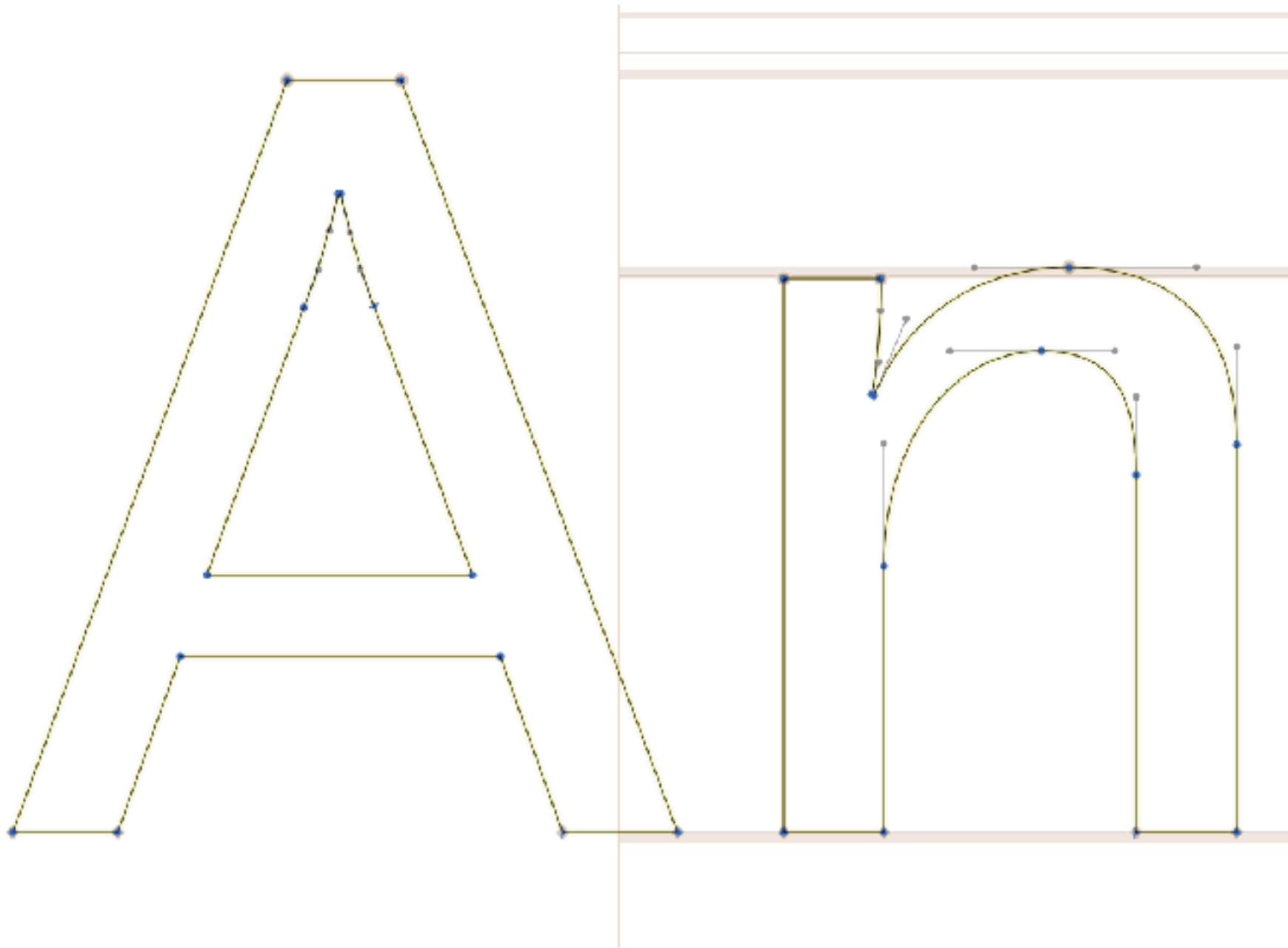
2014: woff2

2014+: Color Fonts

2016: Opentype Font Variations

2022: COLRv1

# Schriftkonstruktion

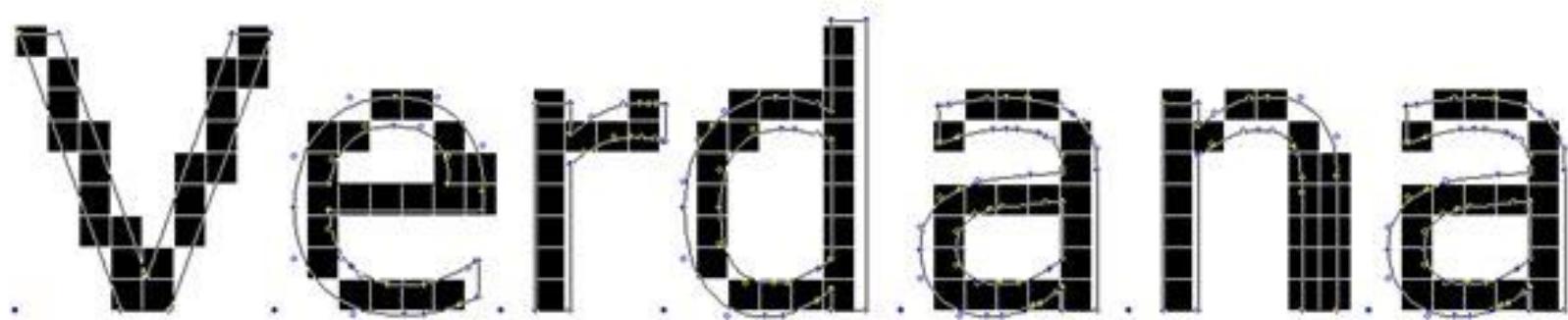


Schriftkonstruktion mit Bezierkurven



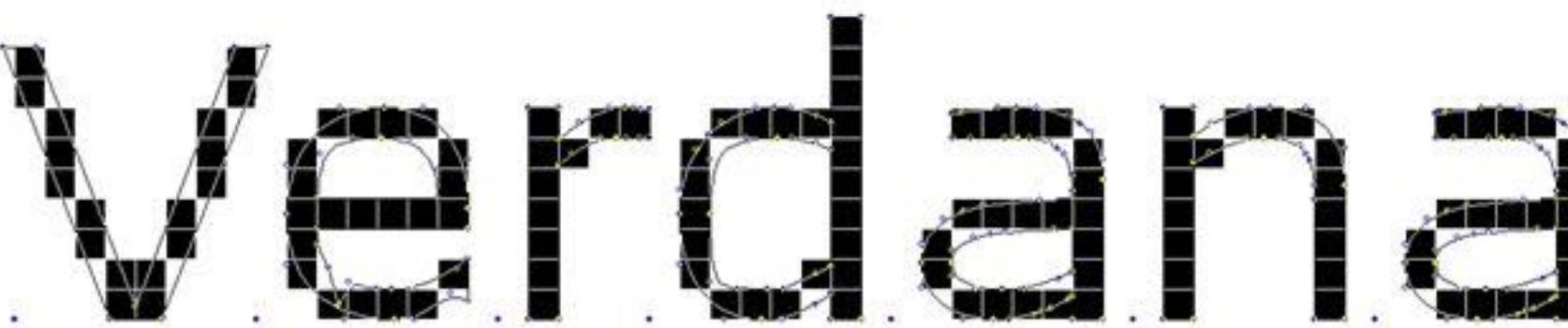
Schriftrasterung am Bildschirm

# Hinting



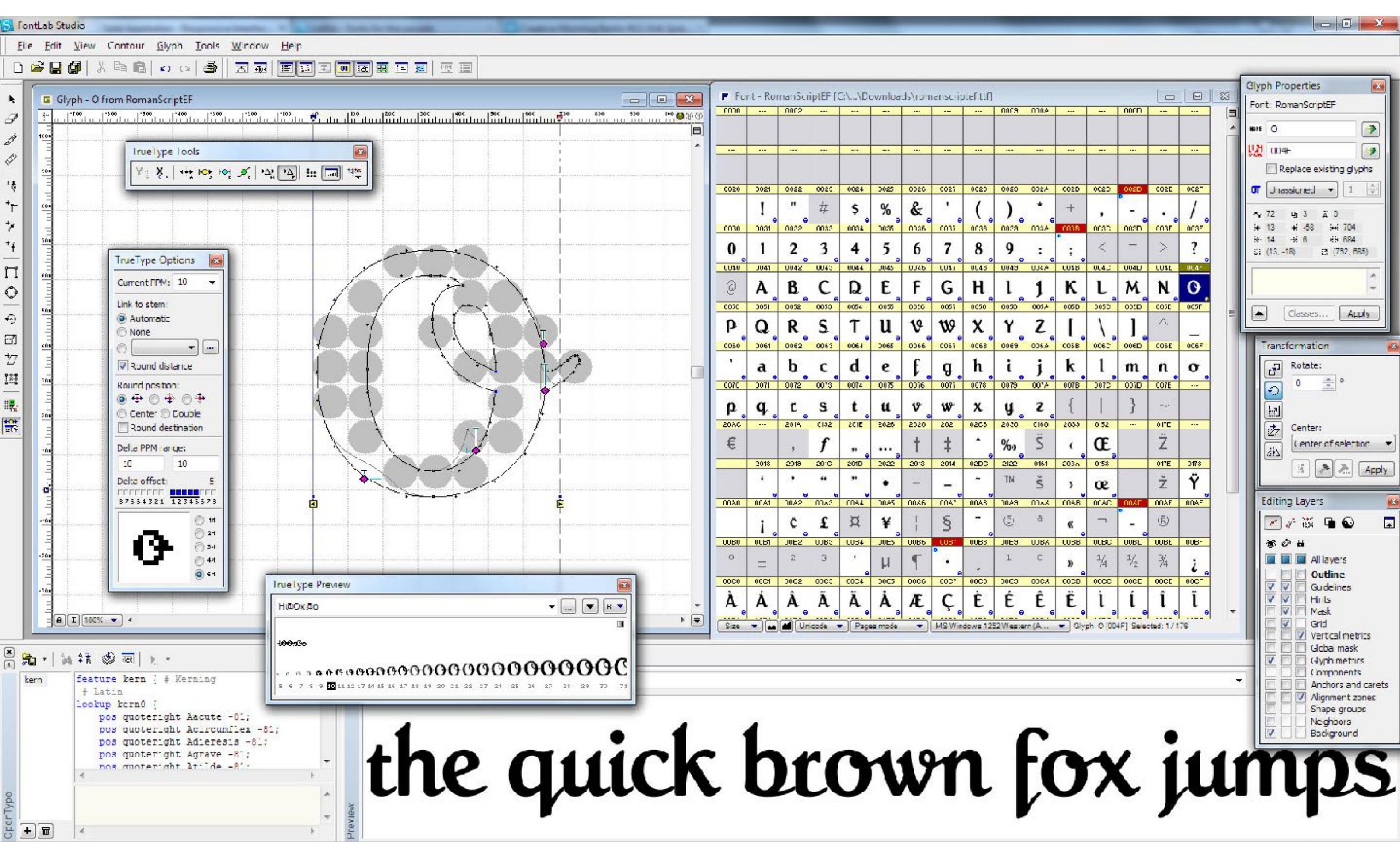
verdana

un-hinted



verdana

hinted



# Hinting

Georgia  
Georgia  
Georgia  
Georgia

9px

10px

11px

12px

Georgia  
Georgia  
Georgia  
Georgia

# Hinting

The quick brown fox jumps over the lazy dog.

ungehintet bei 10 ppm

The quick brown fox jumps over the lazy dog.

gehintet bei 10 ppm

The quick brown fox jumps over the lazy dog

ungehintet bei 15 ppm

The quick brown fox jumps over the lazy dog.

gehintet bei 15 ppm

# Hinting

## No hints at all

10px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

11px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

12px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

14px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

16px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

## Manual hints (no deltas yet)

10px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

11px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

12px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

14px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

16px: ☐ ☒ ☓ ☔ ☕ ☖ ☗ ☘ ☙ ☚

# Hinting

## auch «Bildschirmoptimierung»

- Anpassung der Schrift an die Darstellung am Bildschirm
- abhängig von Betriebssystem und Browser
- «Hints» für den Renderer/Rasterizer
- Optimierung für Schlüsselgrößen
- Optimierung der Lesbarkeit, nicht Erhaltung der Schriftform

# Antialias

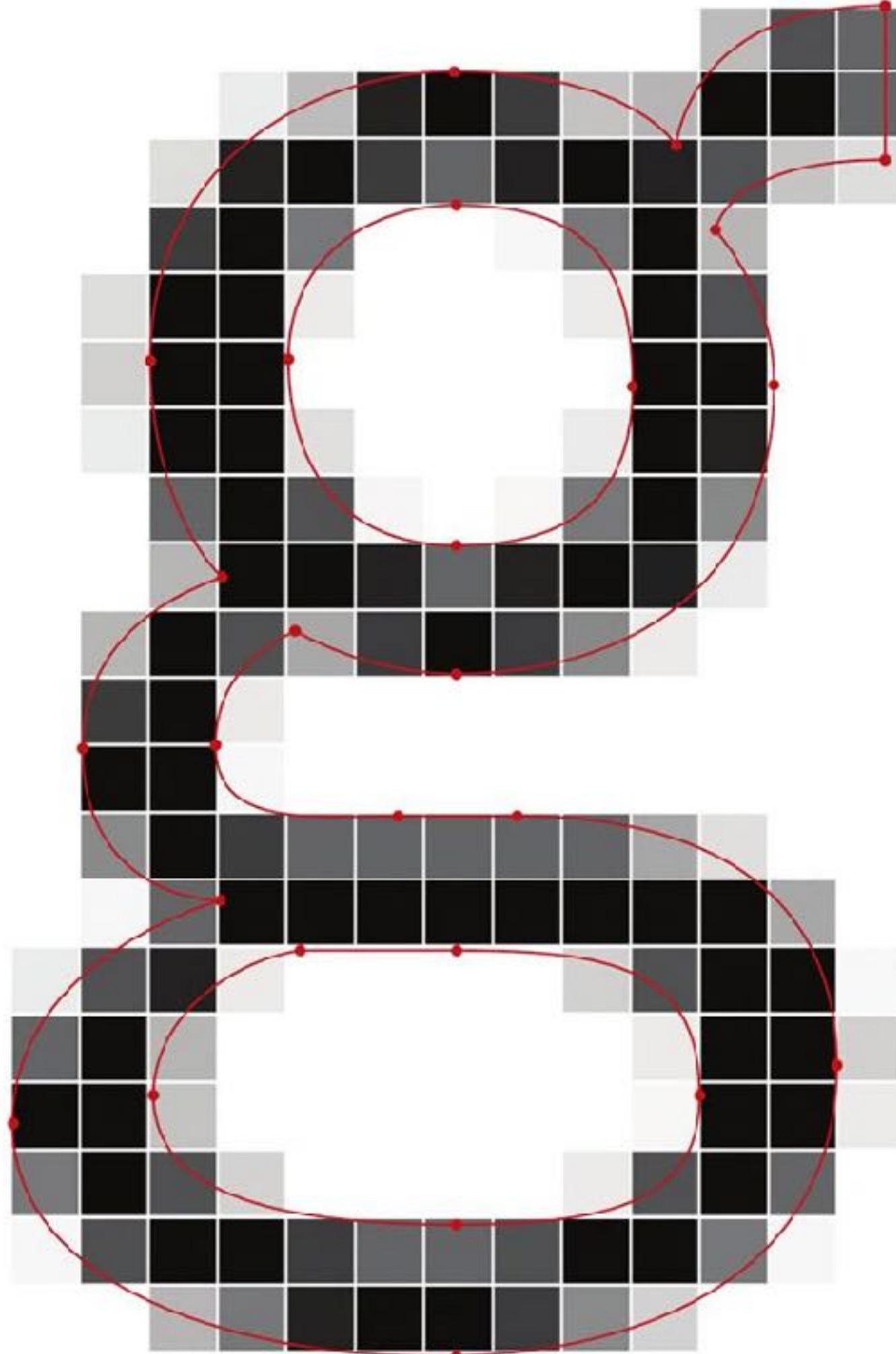
*Typography*



*Typography*



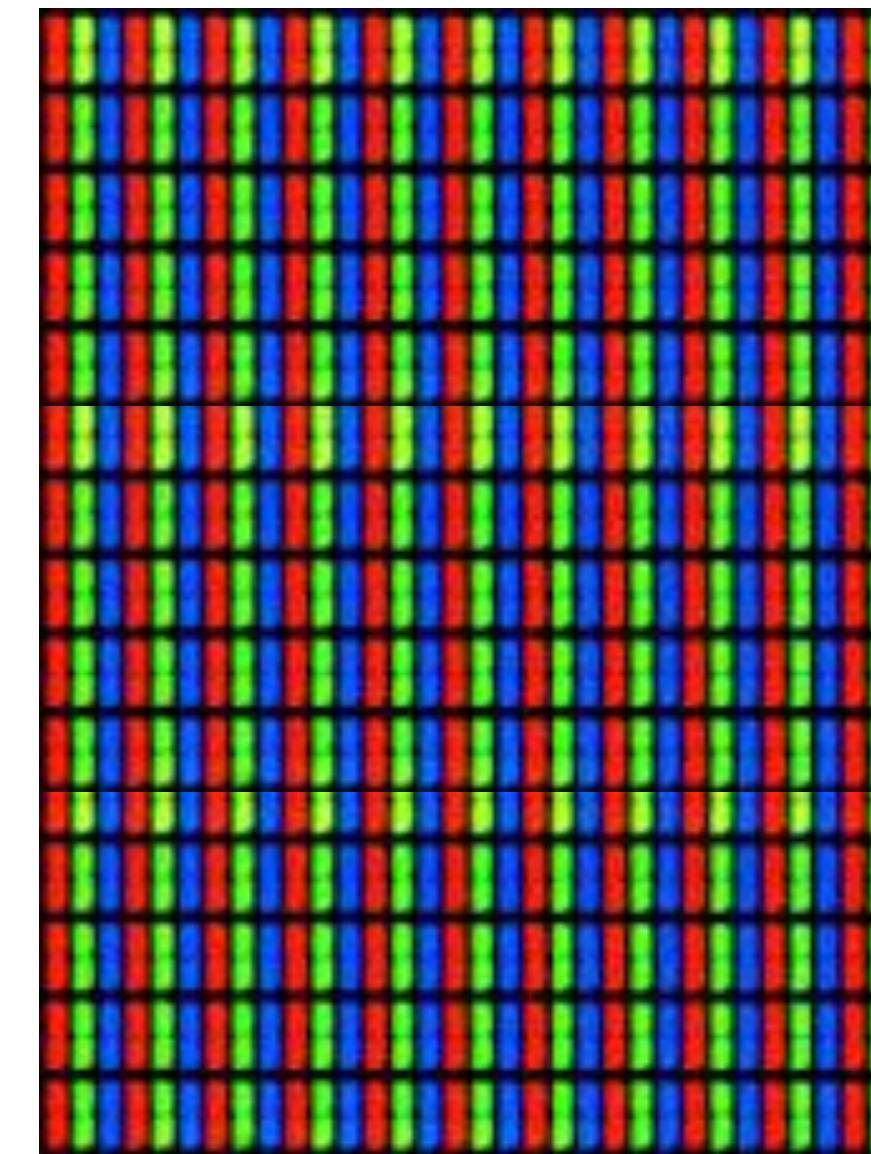
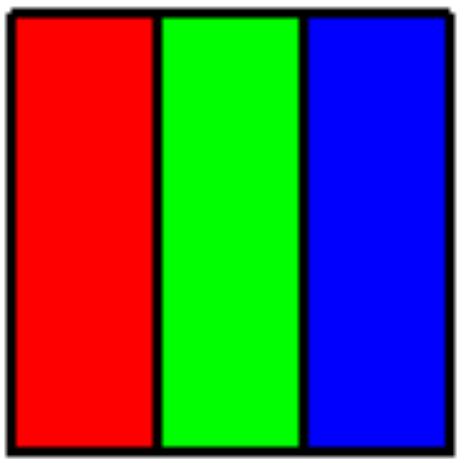
# Antialias



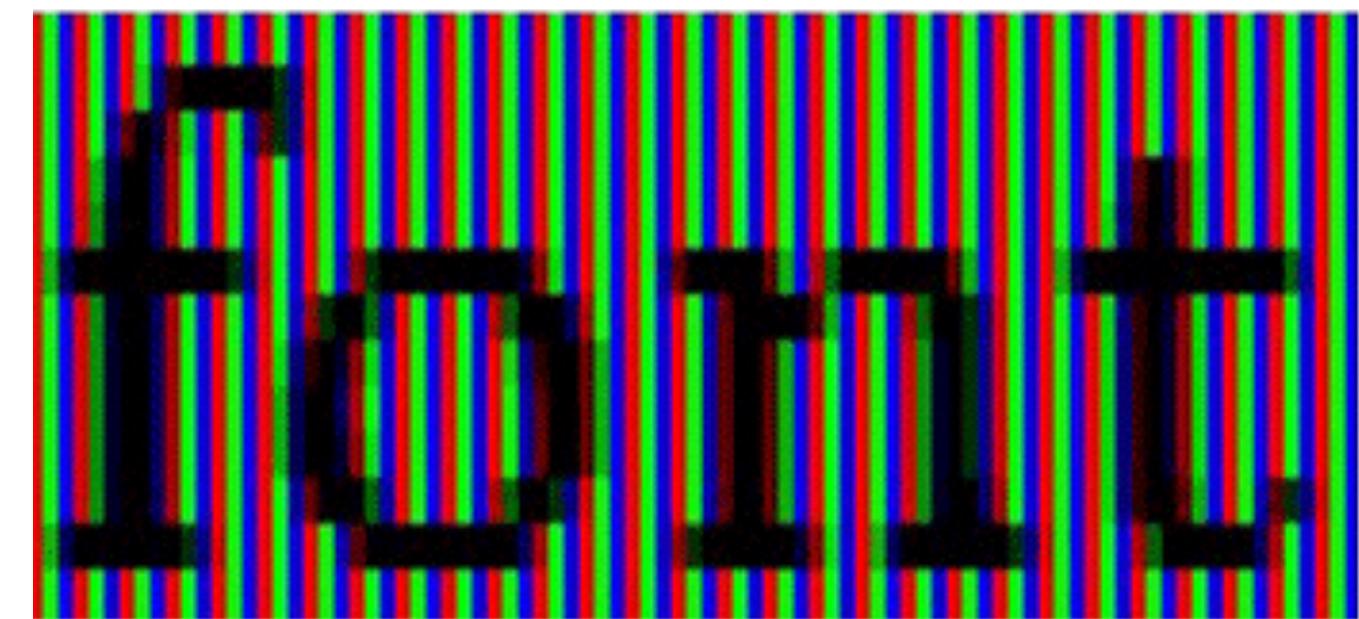
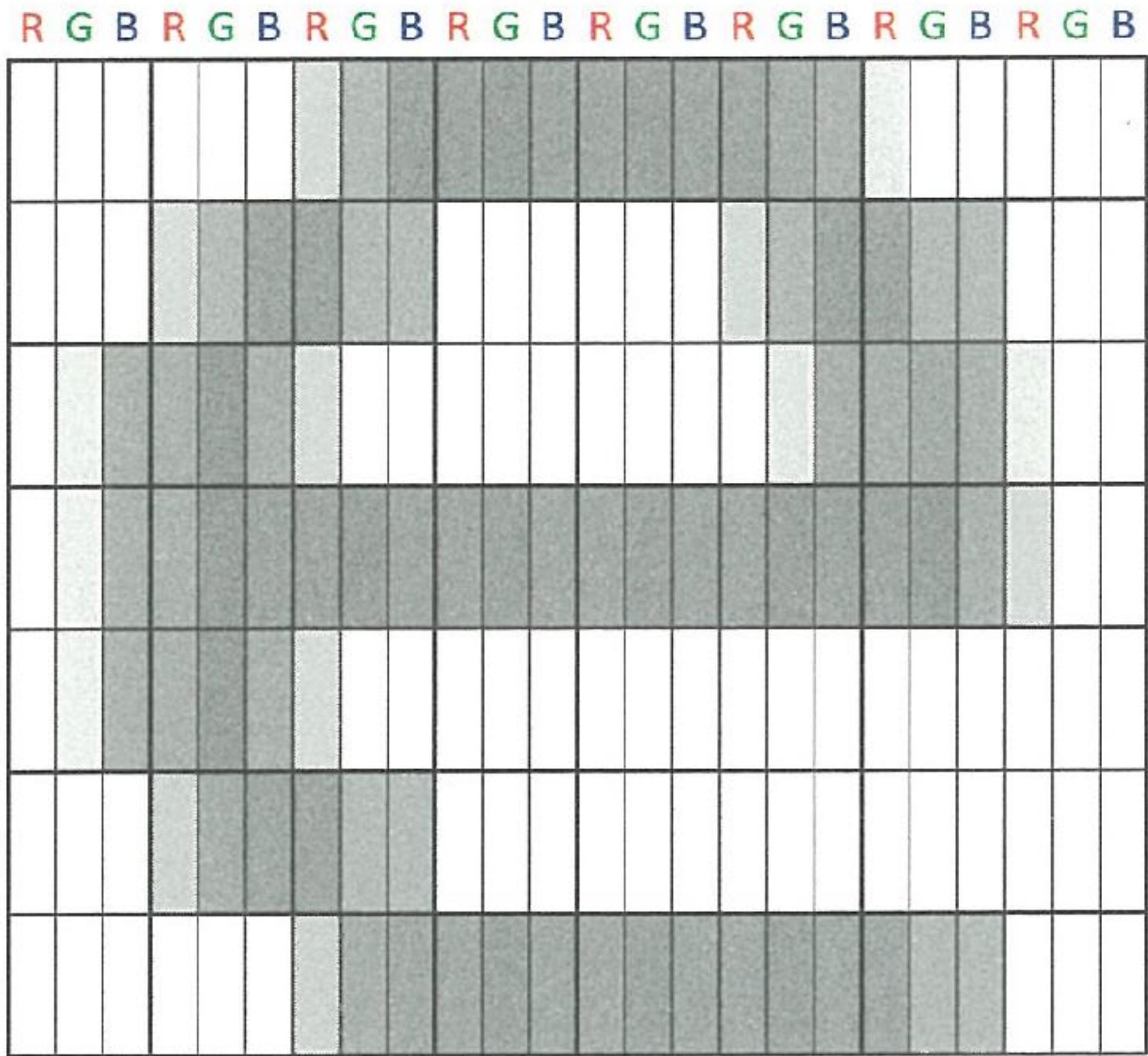
# Subpixel rendering



# Subpixel



# Subpixelrendering



font

# Optimierte Schriften

The screenshot shows a web browser window with the address bar displaying 'typography.com/fonts/styles/screensmart?utm\_source=news&utm\_medium=email&utm\_campaign=screensmart'. The page title is '& Web & Mobile Font Collection'. The navigation bar includes links for Apps, WebTech, Sketch, Creative Coding, CAS Digital Type, Zukunft Z type, Fonts, News, Discover, Try, Gear, Help, About, Sign In, and a shopping cart icon.

**Web & Mobile** Font Collection

*351 fonts engineered for browsers & apps*

Archer ScreenSmart Light. Typefaces from the physical world weren't c  
Archer ScreenSmart Light

Archer ScreenSmart Book. Designed around the natural properties of  
Archer ScreenSmart Book

Archer ScreenSmart Medium. ScreenSmart fonts don't just withstand  
Archer ScreenSmart Medium

Archer ScreenSmart Semibold. Designed not just for designers, but f  
Archer ScreenSmart Semibold

Archer ScreenSmart Bold. Typefaces from the physical world weren  
Archer ScreenSmart Bold

# Optimierte Schriften

The screenshot shows a web browser window with the title bar "The Reading Edge™ Series - A X". The address bar displays "Nicht sicher | fontbureau.com/ReadingEdge/#ss-12/plaintext". Below the address bar is a navigation menu with links to "Apps", "WebTech", "Sketch", "Creative Coding", "CAS Digital Type", and "Zukunft Z Type". The main content area features a large, bold heading "The Reading Edge™ (RE) fonts" followed by a subtitle: "Ten font families, each with four basic styles, designed to function reliably at 9px–18px". Below the heading is a control bar with a "Size" slider set to 12 and a "Render type as" dropdown menu set to "Live HTML Webtype". The page then lists four font families in two columns:

Font Family	Description
<b>Antenna RE</b>	Antenna RE, a square-styled sans serif, joins its namesake's extensive list of weights and widths for both print and web. Broad proportions and open spacing as well as the large and consistently-shaped counters add to Antenna RE's <i>calm deliberation and good readability</i> . <b>Antenna RE</b> is contemplative and suave. Its repetitive forms make it a steady choice – <b>no matter how small</b> .
<b>Benton Modern RE</b>	Benton Modern RE is a small-size web adaptation of a modern serif. Its print and web relatives have roots in Morris Fuller Benton's great news faces like Century Expanded. Close up, Benton Modern RE bears <i>wider letterforms, larger counters, and thicker strokes</i> so that it reduces clearly on the web. Still, its <b>vertical contrast and elegance exude a sophistication especially suitable for editorial texts</b> .
<b>Apres RE</b>	Apres RE is a geometric sans serif based on the Apres type series that David Berlow and Font Bureau staff originally drew for the Palm Pre smartphone. The letterforms are round and balanced, the spacing crisp. Apres RE cites geometry without feeling overly simplified or mechanical. Its <b>light structure with a distinct bold deliver an approachable, intelligent voice well-suited for text and navigation</b> .
<b>Benton Sans RE</b>	Benton Sans RE echoes the adaptability of its print companion from Font Bureau, a redesign and expansion on Morris Fuller Benton's American grotesque News Gothic. To accommodate the requirements of small text on screen – similar to those of agate type used in newspaper listings – Benton Sans RE has broader proportions and adapted spacing. <b>Benton Sans RE</b> is frank but considerate, a straightforward sans serif of exceptional versatility.

[fontbureau.com](http://fontbureau.com)