2007.07.20

Text Layout in GTK+ World

Text Layout

Text layout is decided by the author.

Text Layout

- HTML:

<p> Dynamically loaded modules then handle text layout for particular combinations of script and font backend. Pango-1.10 ships with a wide selection of modules, including modules for Hebrew, Arabic, Hangul, Thai, and a number of Indic scripts. Virtually all of the world's major scripts are supported.

- TeX:

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La yout　Engine

Typesetting
Line Breaking
Font
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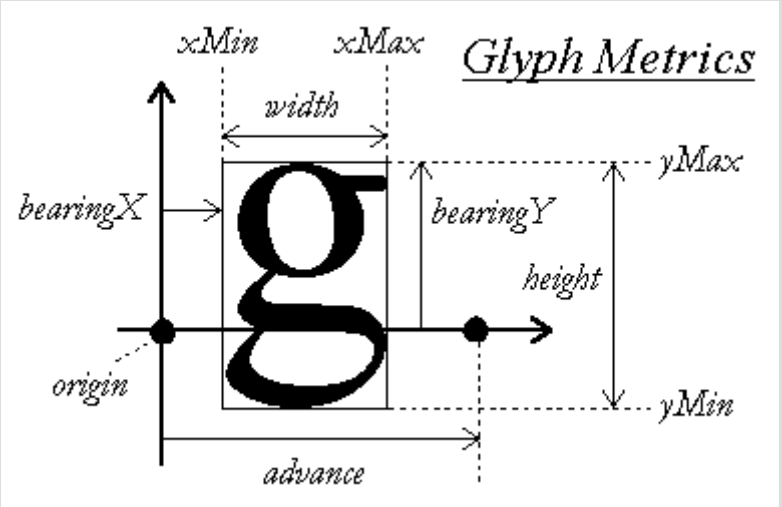
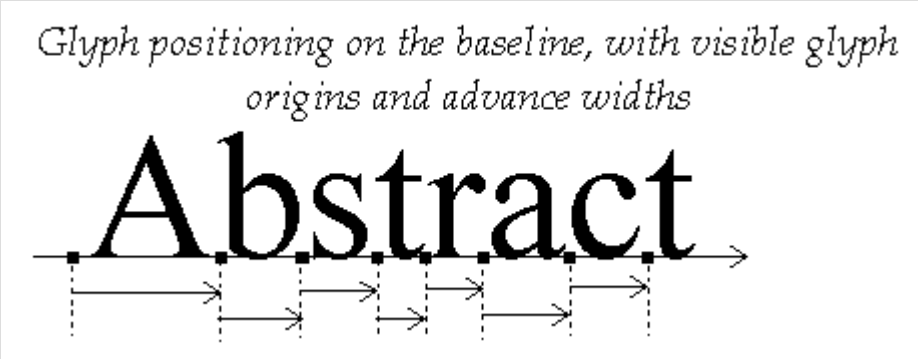
.

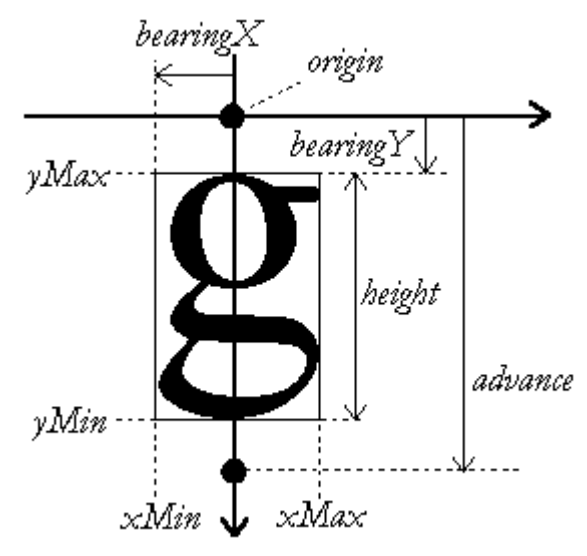
Glyph Metrics

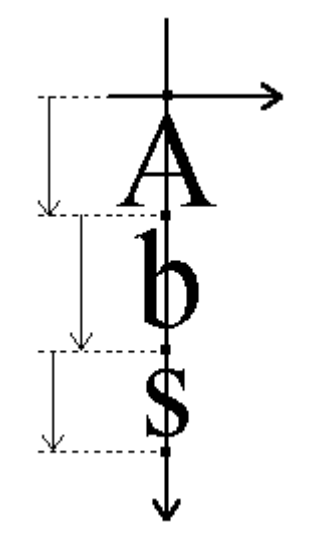
- EM-Box
- Glyph metrics:
  - Bearings
  - Advance





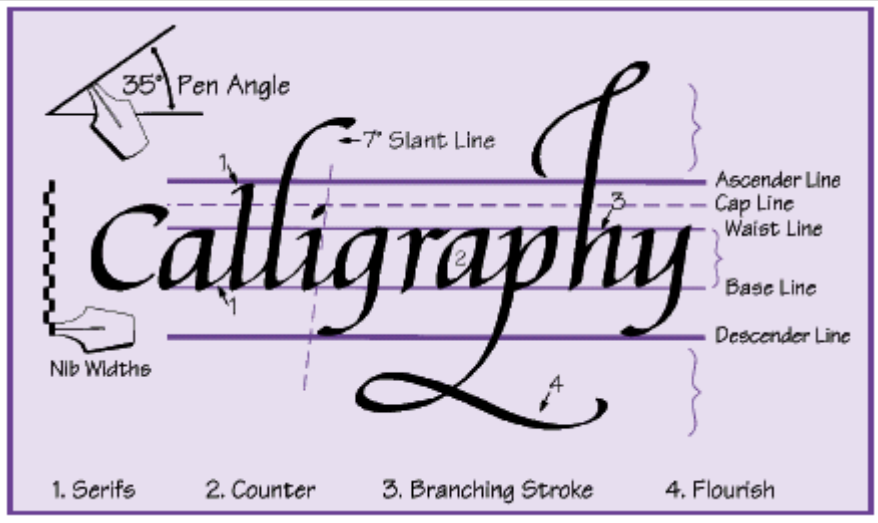
Vertical Glyph Metrics



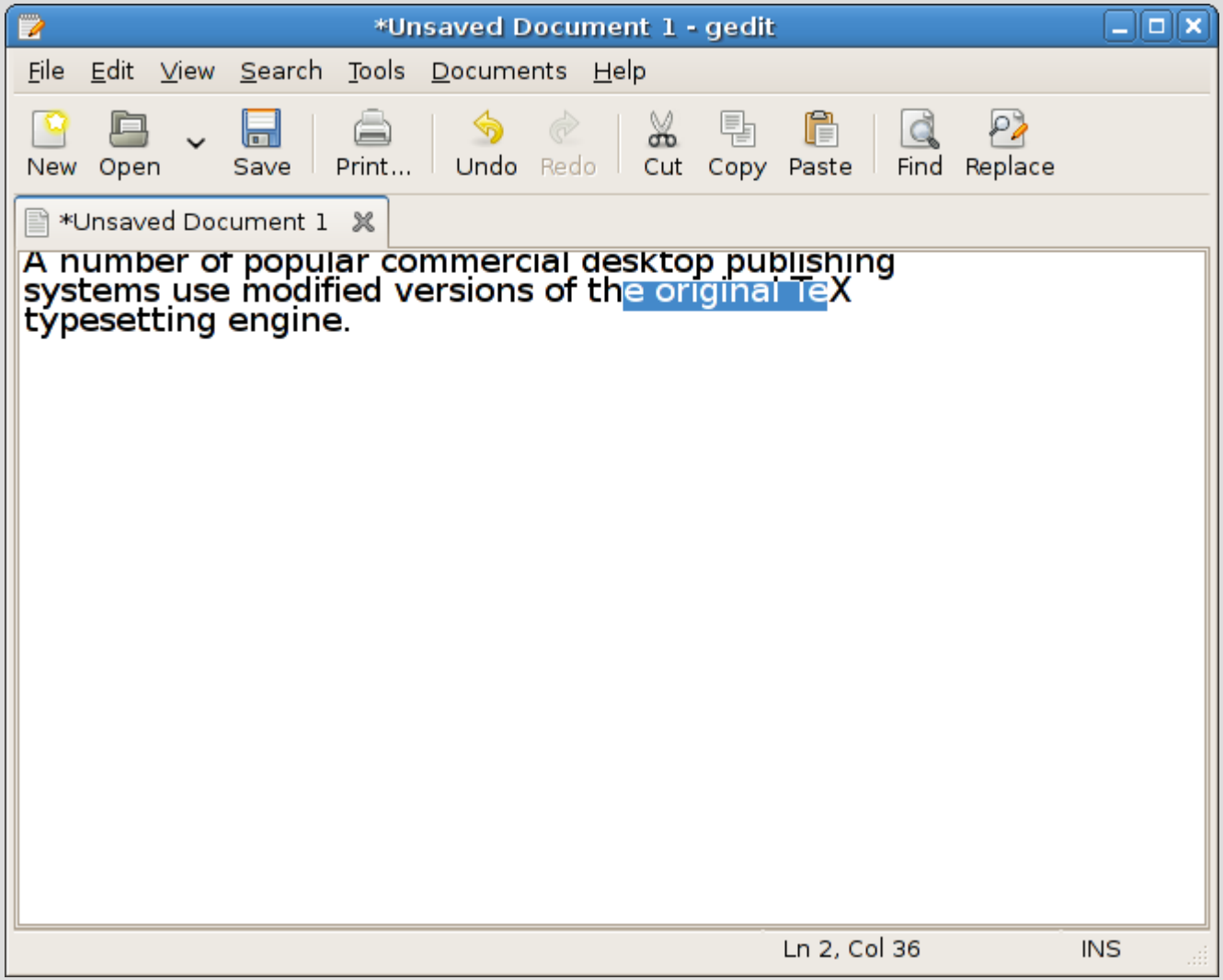


Font Metrics

- Ascender
- Descender
- Leading



Wrong Metrics



Unicode

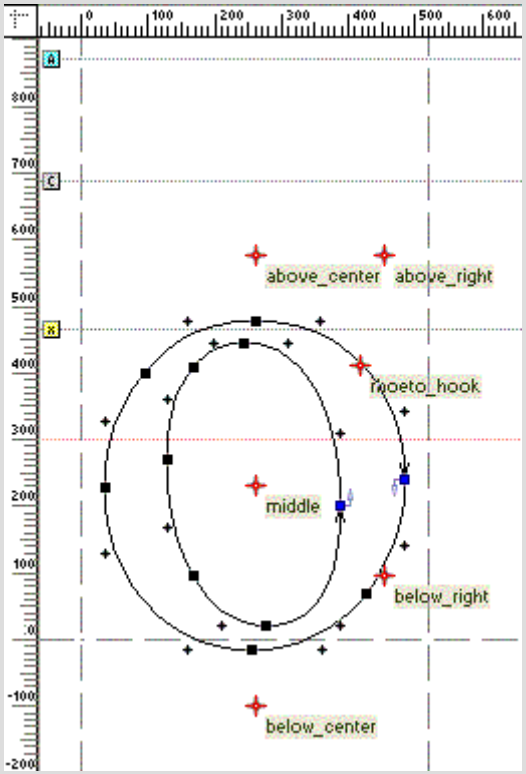
- TR #9: The Bidirectional Algorithm
- TR #14: Line Breaking Properties
- TR #29: Text Boundaries

Unicode and OpenType

- Context awareness
- Substitution

(乘) → 乘　　f + i = fi

- Positioning

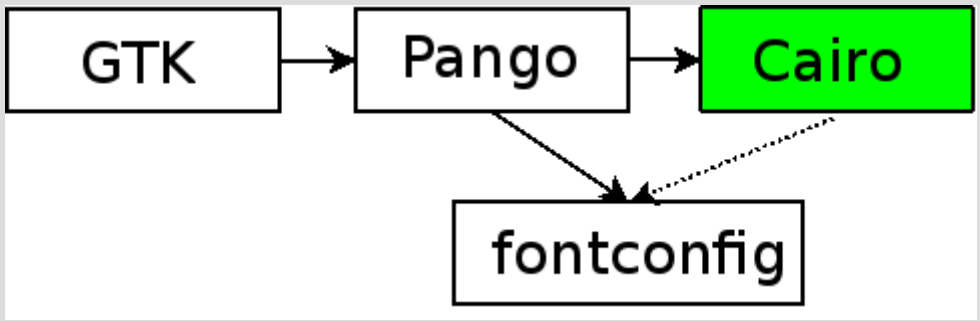


Pango

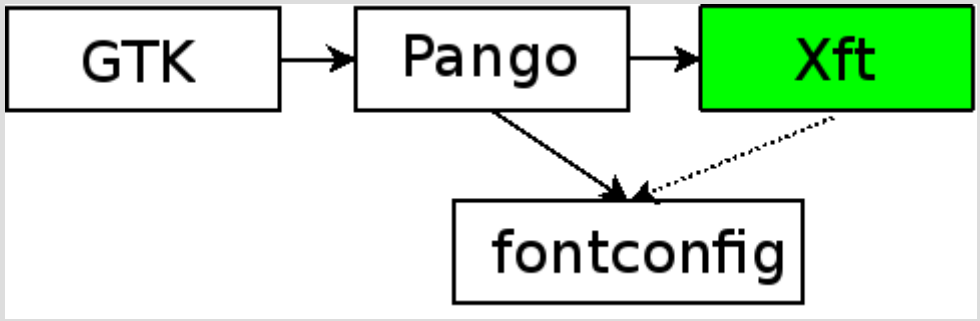
- Multiple backends
- Font management
- Glyph rendering
- Unicode support
- OpenType layout support
- Can be device independent

GTK+ and Text

- Recent distributions



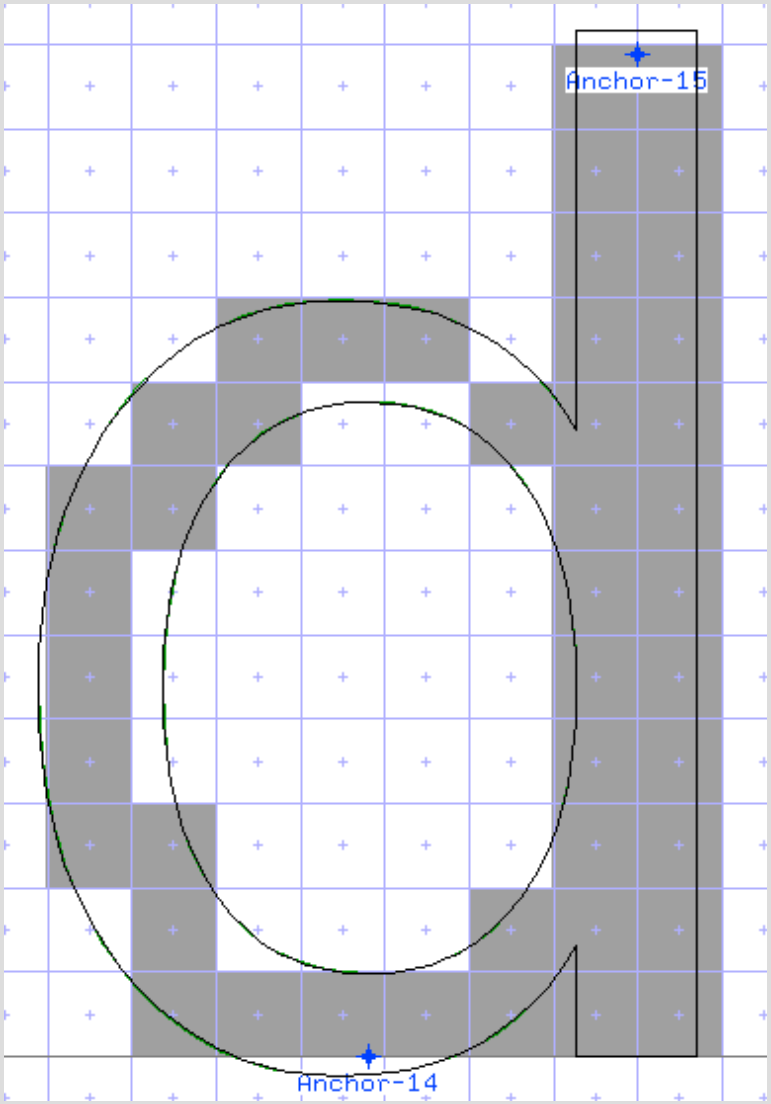
- OpenMoko (GTK+ 2.6)

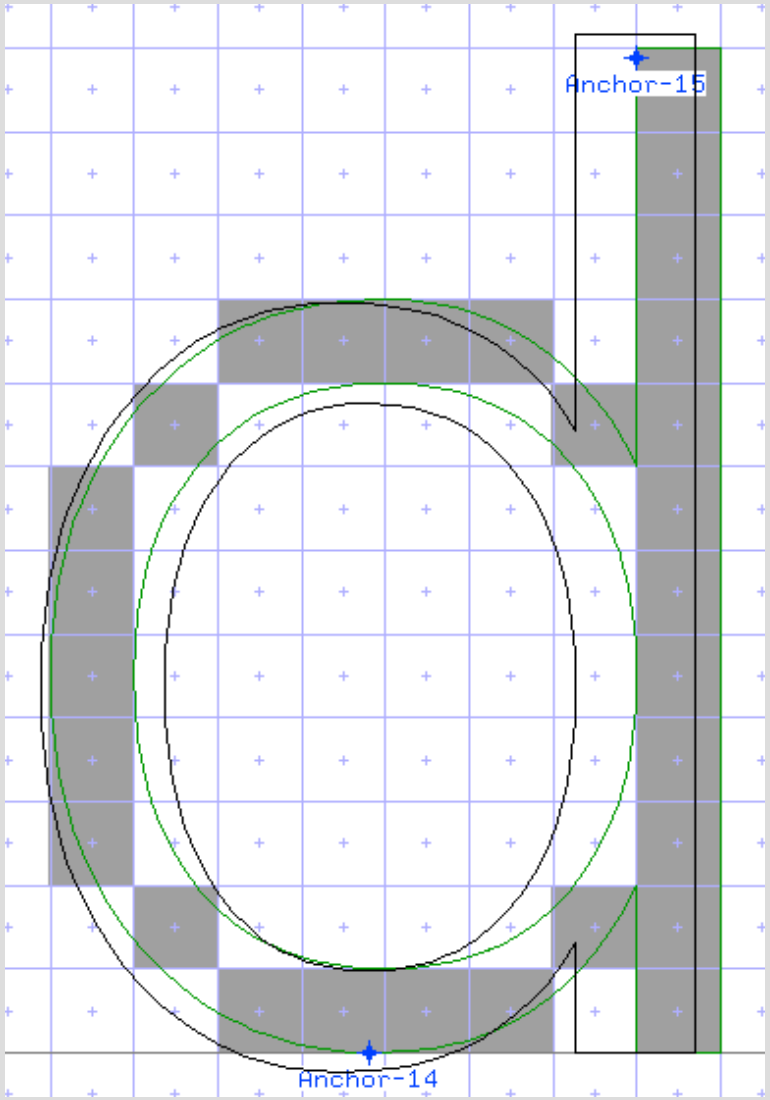


Rendering Difficulties

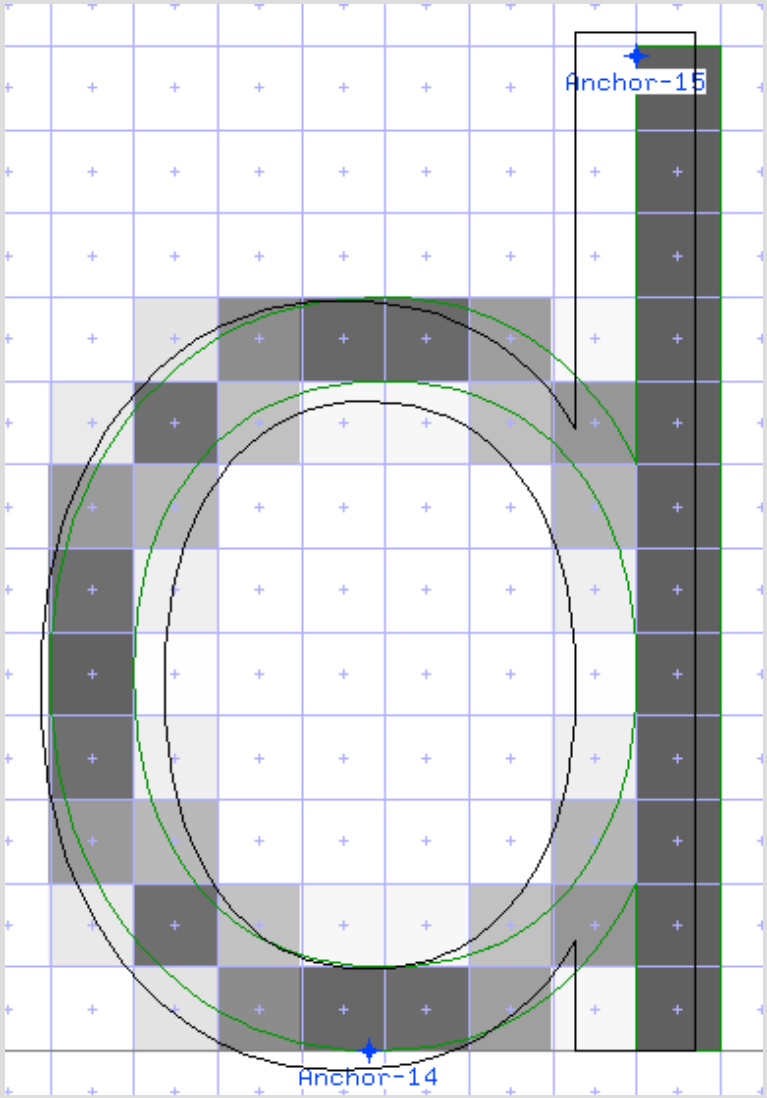
Glyph rasterization
Quantized metrics

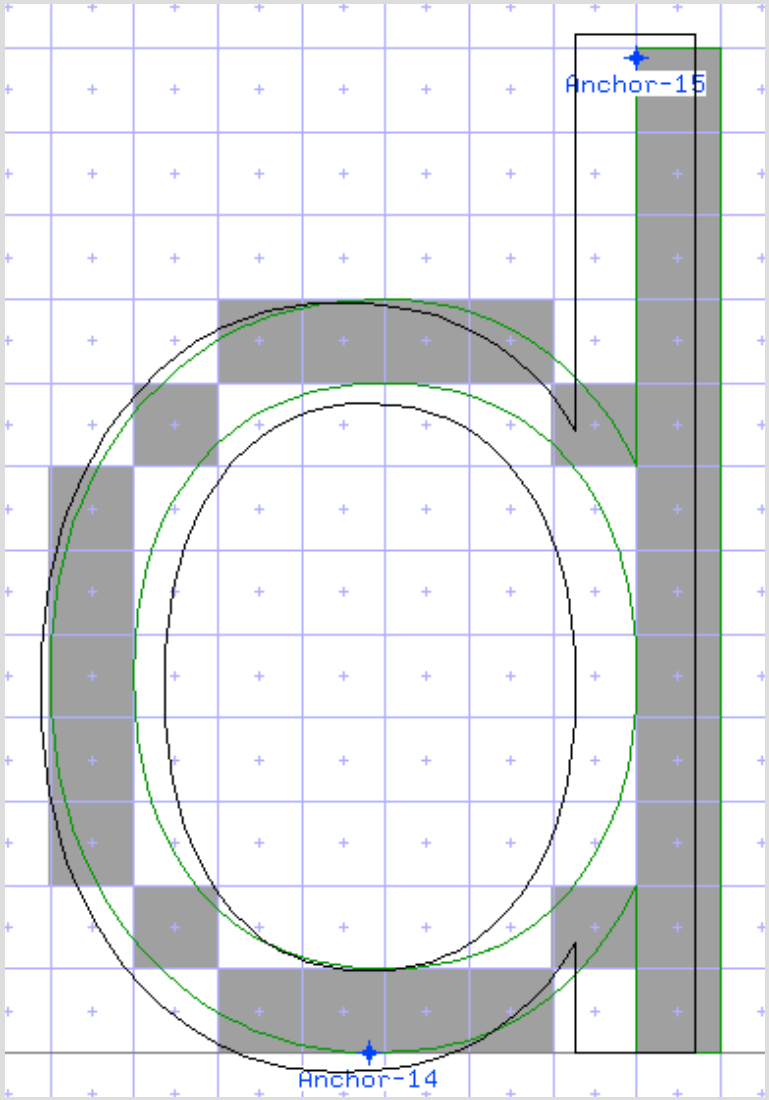
Hintin g



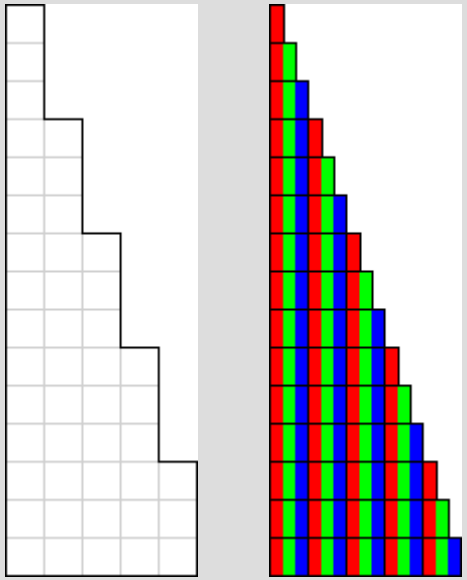


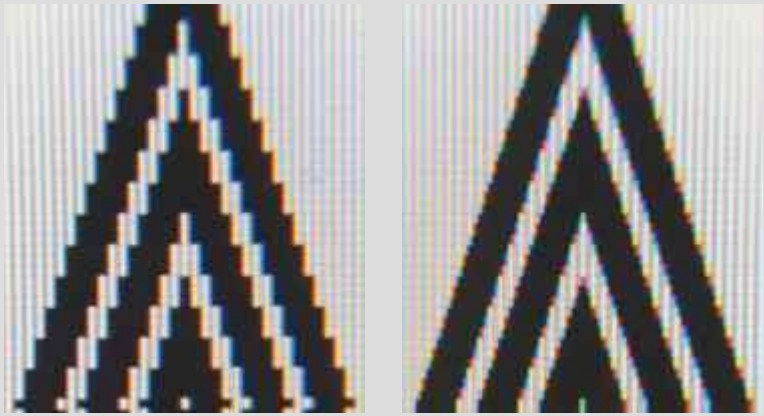
Anti-A lia sing



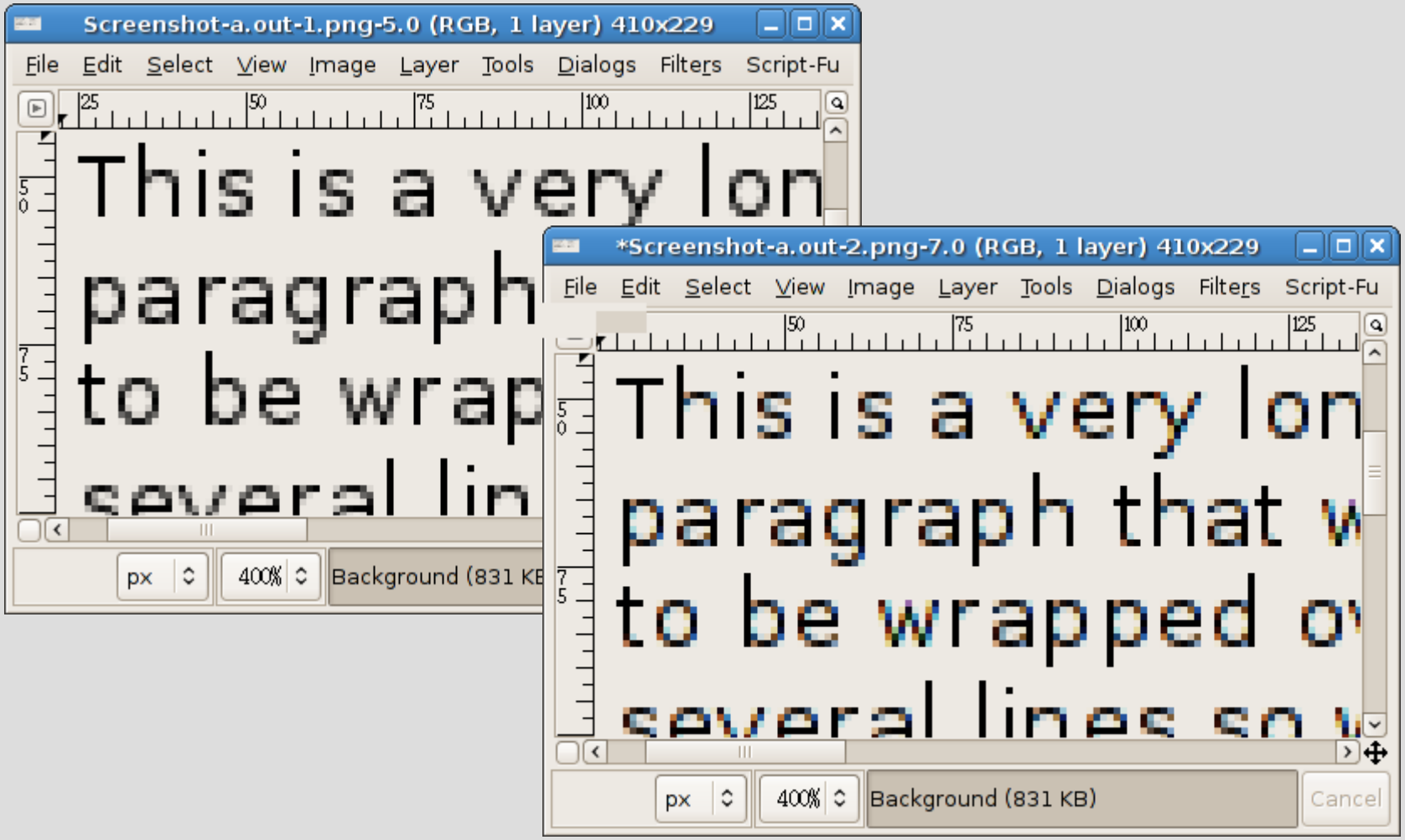


Subpixel Rendering

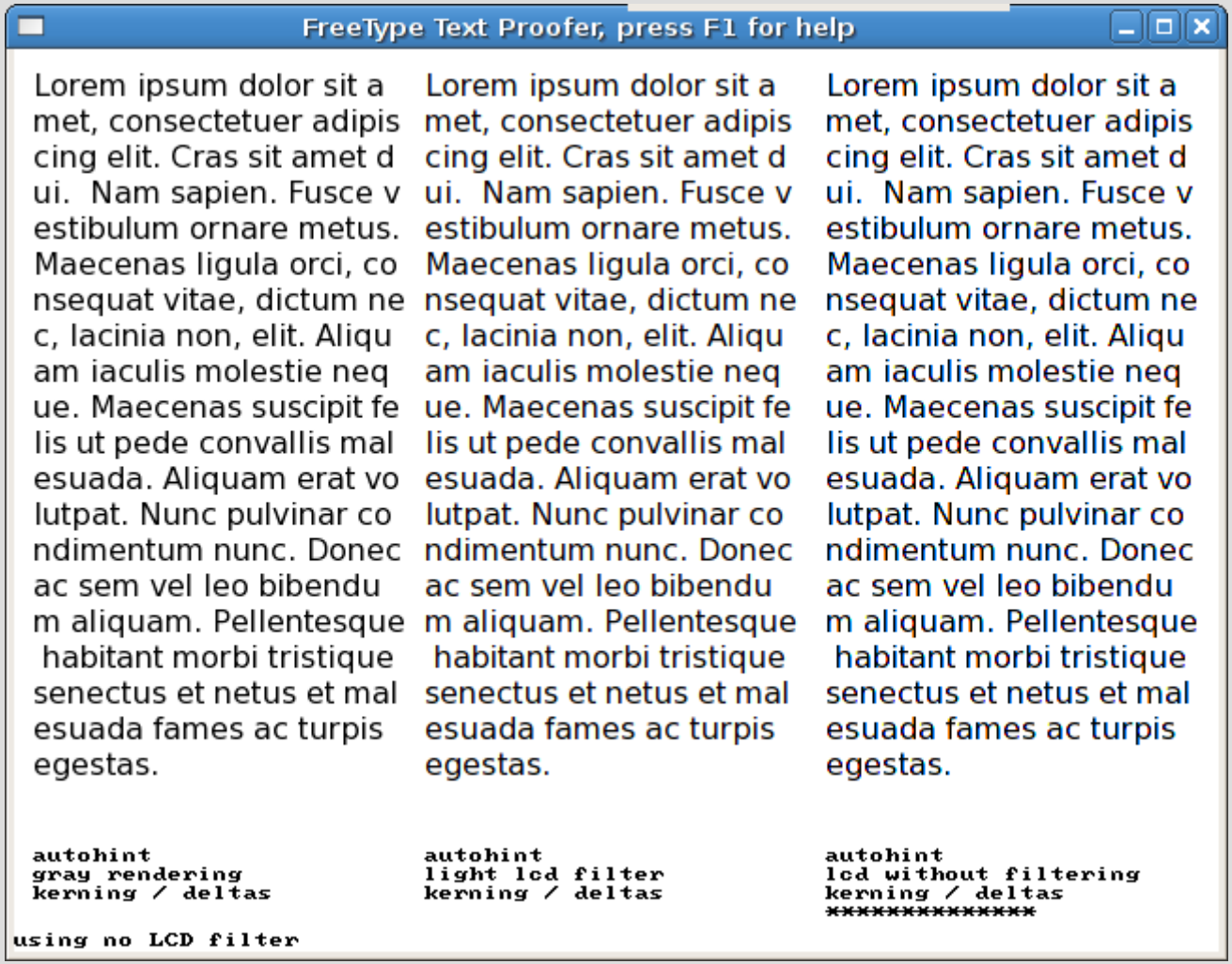




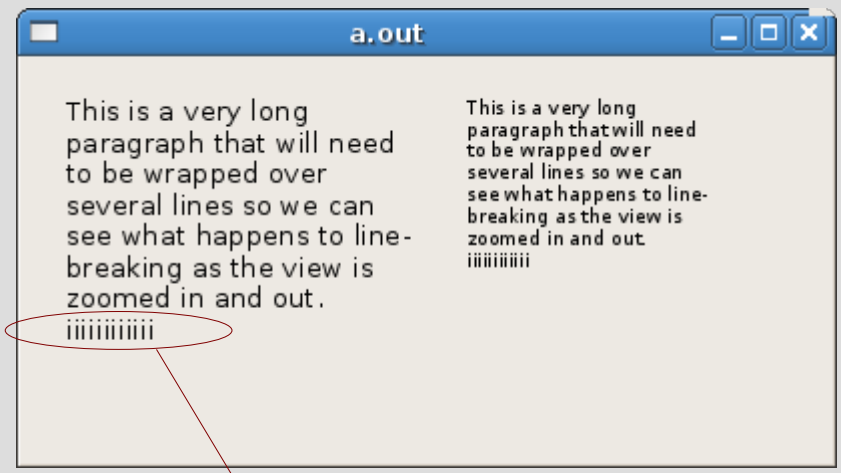
Subpixel Rendering

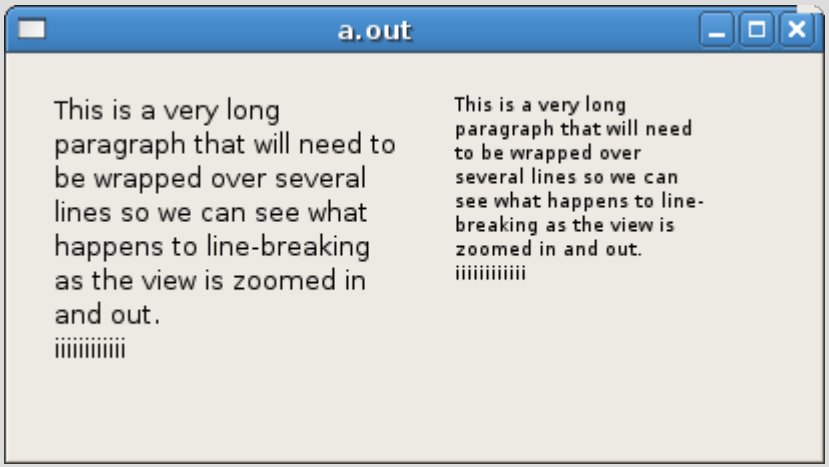


Subpixel Rendering



Device Inde pendence





Is pango device independent?