### BBN–ANG–183 Typography Fonts

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#### topic outline

- font parameters, classification
- family, style, shape, weight, width
- typical uses of the font parameters
- size, typographic units
- colour, legibility, readability

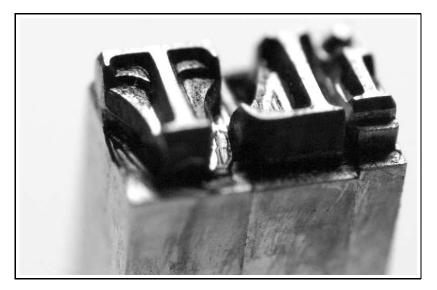
font: definition

#### font, typeface (fount: BrE)

a **collection** of **glyphs** (letterforms) with a particular design (style, shape, weight, width, size) which are arranged in a way that they are allocated to certain **character positions**, and with which text can be typeset

- e.g., "Times Bold", "Helvetica Condensed Italic", etc.
- font/typeface: betűtípus, betűkészlet; type: (szedett) betű; glyph: betűalak, betűforma, karakteralak

#### glyphs in a metal typeface



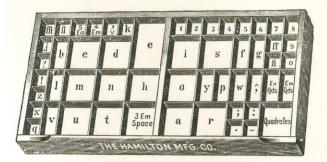
font

#### arranged collection of metal glyphs in a case





Upper Case.



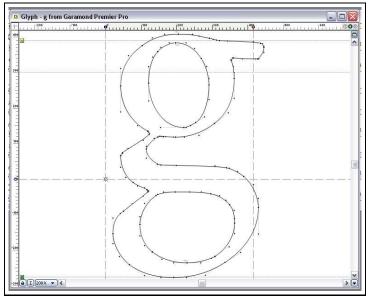
Lower Case. A PAIR OF CASES.

### a digital font

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fonts

#### a glyph in a digital font



gkz & szp (delg)

alternate glyphs of the characters and 'Q' and 'G'



typo/fonts

# ?

what are the basic parameters along which fonts vary and can be characterized?

1. primary

1. primary

▶ basic design features ⇒ font (super)family

- 1. primary
  - ▶ basic design features ⇒ font (super)family
  - style

- 1. primary
  - ▶ basic design features ⇒ font (super)family
  - style
- 2. secondary ("faces")

- 1. primary
  - ▶ basic design features ⇒ font (super)family
  - style
- 2. secondary ("faces")
  - shape

- 1. primary
  - ▶ basic design features ⇒ font (super)family
  - style
- 2. secondary ("faces")
  - shape
  - weight

- 1. primary
  - ▶ basic design features ⇒ font (super)family
  - style
- 2. secondary ("faces")
  - shape
  - weight
  - width

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- 1. primary
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  - style
- 2. secondary ("faces")
  - shape
  - weight
  - width
  - size

Theoretically, the primary features of the **font family** are shared by all its member fonts.

#### what is a **font family**?

the collection of fonts/typefaces whose common feature is their fundamental design style; the members of a font family bear a common basic (sur)name

#### family examples

- Garamond vs. Bodoni vs. Futura vs. Helvetica, etc.
- they differ in basic design styles, they can be classified/differentiated by historical considerations (see next lectures)
- their members are secondary names, representing the secondary font features, e.g., "Times Bold Italic"

#### PRIMARY SECONDARY Family Style Shape Weight Width Size Font name

PRIMAR						
Family	Style	Shape	Weight	Width	Size	Font name
Times	serif	it.	bold	medium	10 pt	Times Bold It./10 pt

PRIMAR	Y	SECO	NDARY			
Family	Style	Shape	Weight	Width	Size	Font name
Times	serif					Times Bold It./10 pt
Times	serif	it.	regular	medium	10 pt	Times Italic/10 pt

PRIMAR	Y	SECO	NDARY			
Family	Style	Shape	Weight	Width	Size	Font name
Times	serif	it.	bold	medium	10 pt	Times Bold It./10 pt
Times	serif	it.	regular	medium	10 pt	Times Italic/10 pt
Helvetica	sans	it.	bold	medium	10 pt	Helvet. Bold It./10 pt

#### difference: secondary feature

# Lorem Ipsum Lorem Ipsum

#### difference: primary feature

# Lorem Ipsum Lorem Ipsum

#### font styles

serif/antique (talpas/antikva)

glyphs from serif style fonts

## Garamond, Bodoni, LM Roman, Palatino, Times, Minion

- serif/antique (talpas/antikva)
- sans serif/sanserif/gothic/grotesque (talpatlan/groteszk/blokkbetű)

glyphs from sans serif style fonts

### Helvetica, Arial, LM Sans, Klavika, Futura, Myriad, Scala Sans, Lucida Console

#### font styles

- serif/antique (talpas/antikva)
- sans serif/sanserif/gothic/grotesque (talpatlan/groteszk/blokkbetű)
- typewriter/monospaced/coding

glyphs from typewriter style fonts

## Courier, LM Typewriter, Lucida Typewriter, Trixie

#### font styles

- serif/antique (talpas/antikva)
- sans serif/sanserif/gothic/grotesque (talpatlan/groteszk/blokkbetű)
- typewriter/monospaced/coding
- script/chancery/cursive (írott betű, reneszánsz betű)

glyphs from script style fonts

Zapf Chancery, Shelley Dolante Script, Brush Script, Comic Sans, **Trendy** 

#### font styles

- serif/antique (talpas/antikva)
- sans serif/sanserif/gothic/grotesque (talpatlan/groteszk/blokkbetű)
- typewriter/monospaced/coding
- script/chancery/cursive (írott betű, reneszánsz betű)

## shapes/slope: angle of vertical strokes

- roman/normal/upright/plain/regular (álló normál, antikva)
- italic/cursive (kurzív, dőltbetű)
- oblique/slanted (döntött, ferde betű)
- upright italic (állított dőltbetű)

# ?

what's the difference between italic and oblique?

## italic vs. oblique

## true italic

- glyphs are more cursive (handwriting-like) than roman but less cursive than script
- distinct forms from their roman counterparts but are still related to them
- usually sloped (5°-15°) but not the mere slanted versions of roman shape

oblique

## italic vs. oblique

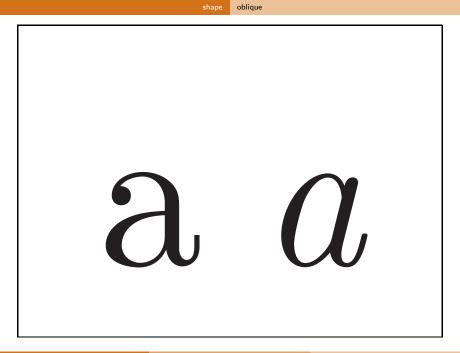
## oblique

oblique

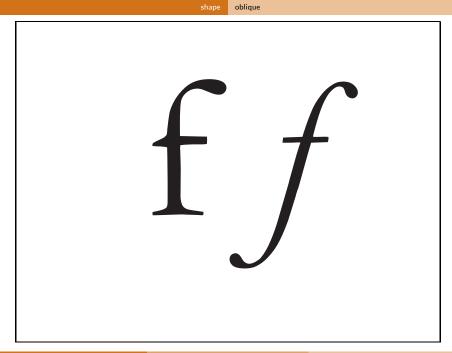
## sloping alone does not make an italic italic

# aefgikpz123 aefgikpz123

▶ a one-story a

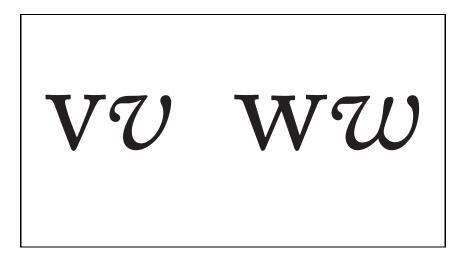


- ▶ a one-story a
- an f with a tail



- ▶ a one-story a
- an f with a tail
- **•** swashed v/w, and curved bottoms

shape oblique



- a one-story a
- an f with a tail
- **•** swashed v/w, and curved bottoms
- serifs often disappear or become teardrop-shaped





- a one-story a
- an f with a tail
- swashed v/w, and curved bottoms
- serifs often disappear or become teardrop-shaped
- italic glyphs are often narrower than their roman counterparts

## and now, a brief history of the *italic* shape

## a brief history of italic style

- roman style: legacy of the Roman Empire (uppercase letters) and the Holy Roman Empire (lowercase letters)
- italic letterforms: Italian Renaissance
- originally, italic fonts had only lowercase letters (uppercase was roman/upright)
- italic was never used together with roman lowercase, it was a totally independent style

## a brief history of italic style



## **Aldus Manutius** (1449–1515)

- (Teobaldo Mannucci/Aldo Manuzio), scholar, publisher of Latin and Greek literature and grammars, founder of Aldine Press (Venice)
- Francesco Griffo (1450–1518), engraver, punchcutter, commissioned by Manutius to cut a roman type for *De Aetna* by Cardinal Pietro Bembo (1495/1499) and a condensed, economical face for pocket-sized editions of his other books: Virgil's *Opera* (1501)
- this was the birth of italic type ("Aldine italic")

## one of Manutius's/Griffo's pocket books in Aldine italic

P.O.N.IN PRIMVM GEORGICORVM, ARGVMENTVM.

Quid faciat lærds fegetts, quæ fydera feruet A grivla, ut facilem ærram profindat aratris, S emma quo iacienda modo, cultusgi locorum E docait, meffes magno olim forvore reddi.

### P.V.M.GEORGICORVM LIBER PRI MVS AD MOECEN ATEM.

vid faciat lætas fegetes, quo fydere terram. V ertere Macanas ulmisqi adiun q gereuites. Conucriat, que aira boum quis oultus babendo S it perori, atq; apibus quanta experientia parcis, Hincancreincipiam. Vosoclariffimamundi Lumina labentem colo qua ducitis annum Liber, et alma Ceres, ueftro fimunere tellus c haoniam pingui glandem mutauit arifta. P ocular; incentis Acheloia micuit unis. E tuos agresium prafentia numina Fauni, F erte finul, Faunigs pedem, Dryades q: puelle, Munerauc firacano, tuq; o cui prima frementem F udit equum magno tellus percussa tridente N eptune, et cultor nemorum, cui pinquia Cae I crantum niuci tondent dumeta i unenci. I pfe nemus liquens patrium, faltusq; Licæi

## Aldine italic

- the italic is based on the calligraphic "Chancery" script favoured by the scribes of the Vatican chancery
- width of glyphs is narrow
- upper case letters are roman

## weight refers to the thickness of the strokes making up a glyph

font weights

- ultra light/extra light < thin < light <</p>
- ► book <
- regular/normal/medium <</p>
- demibold < semibold <</p>
- $\blacktriangleright$  bold <
- extra bold < heavy < black (poster) < extra black < ultra black < fat</p>

the various weights of Linotype Helvetica Neue Roman

abcdefgABCDEFG-Helvetica Ultra Light abcdefgABCDEFG-Helvetica Thin abcdefgABCDEFG-Helvetica Light abcdefgABCDEFG-Helvetica Regular abcdefgABCDEFG-Helvetica Medium abcdefgABCDEFG—Helvetica Bold abcdefgABCDEFG—Helvetica Extra Bold abcdefgABCDEFG-Helvetica Black

width refers to the width of the bounding box around a glyph; weight + width are sometimes referred to as a series

## font widths

- ultra condensed < extra condensed < condensed < semi condensed</p>
- medium/normal <</p>
- expanded/extended < extra expanded/ext. < ultra expanded/ext.</p>

the various widths of Monotype Univers

abcdefgABCDEFG-Univers Ultra Condensed abcdefgABCDEFG-Univers Condensed abcdefgABCDEFG-Univers Medium abcdefgABCDEFG-Univers Extended

## font weight and width—a brief history

- bold/extended: 20th century creation
- industrial revolution, advertising
- books: emphasis
- first: Clarendon (London, 1845)
- first fonts with many weights: Futura (Paul Renner, 1927), Univers

The digital version of Clarendon Bold (by Linotype/Adobe), originally designed by Robert Besley

## abcdefghijklmnopqrstuvwxyz 0123456789

## ABCDEFGHIJKLMNOPQRSTUVWXYZ

The digital version of Futura Bold (by Bitstream), originally designed by Paul Renner

## abcdefghijklmnopqrstuvwxyz 0123456789 ABCDEFGHIJKLMNOPQRSTUVWXYZ

## Clarendon for advertising



width

## Clarendon on an information board



width

## original Clarendon



# ?

what are the most important roles of typefaces?

## serif roman

- should be the main, primary face of long texts ("kenyérbetű"), and not sans serif or italic!
- choice depends on many considerations (textblock, x-height, genre/topic of text—literature vs. mathematics, romantic novel vs. crime story, etc.)

## sans serif

- usually has display roles: titles (chapter, headings), advertisement
- good for contrast from main serif-roman text
- better for shorter texts, with decent leading (e.g., beamer presentations)

## italic

▶ gentle emphasis in text: ▶ Jane screamed not Janette.

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- interviews: interviewer: italic; interviewee: roman

### italic within italic $\Rightarrow$ roman

### ▶ She is reading Darwin's On the Origin of Species in the library.

|--|

#### ▶ chapter, section heading titles: ▶ The history of England

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- $\blacktriangleright$  section numbers in text:  $\blacktriangleright$  The answer can be found in section 3.1.

 acronyms, abbreviations, computer software names:
 he worked for UNICEF; he died in 37 BC; he lives in San Francisco, CA 94119; she got her MA in English literature; we'll meet at 7 P.M.; he uses UNIX; they used PRAAT for phonetic analysis; but: the assassination of JFK; T.S. Eliot

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- chapter titles, subheads, running heads

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- chapter titles, subheads, running heads
- ▶ first mention of terms: ▶ the speed of the car is its VELOCITY

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- chapter titles, subheads, running heads
- ▶ first mention of terms: ▶ the speed of the car is its VELOCITY
- first few words in an opening paragraph (after drop cap)

### small cap as run-in from a drop cap

OREM IPSUM, consectetuer adipiscing elit. Duis diam orci, convallis sit amet, ultrices vitae, euismod in, tellus. Etiam vulputate. Duis nec diam. Pellentesque sed justo id nisl laoreet ultrices. Curabitur imperdiet lacinia arcu. Aliquam eget metus ac augue iaculis porttitor. Pellentesque ligula massa, mattis ut, commodo ac, tincidunt ac, dolor. Donec metus neque, interdum at, tincidunt nec, cursus non, dolor. Nam tortor est, consequat quis, scelerisque et, commodo id, libero. Aenean vel libero. Praesent justo lorem, venenatis fermentum, viverra ac, feugiat sit amet, ligula. Donec nonummy dapibus mauris.

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- name of character in plays

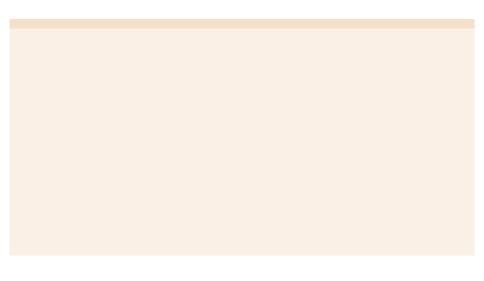
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- abbreviation of morphemes in glosses:
  - ► sólymaid 'falcon-GEN-PL-2SG'

punctuation marks after italic, bold, etc. are also italic, bold, etc.
 They liked *Hamlet*, but hated *Romeo and Juliet*; however, ...
 The answer can be found in section 3.1.

- punctuation marks after italic, bold, etc. are also italic, bold, etc.
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- parentheses inherit the style of the text they enclose
   This play (*Romeo and Juliet*) is an early tragedy by Shakespeare.
   but: This play (*Romeo and Juliet* by Shakespeare) is an early tragedy.
  - however: These plays (*Romeo and Juliet* and *Hamlet*) are tragedies. also: I like this play (*Hamlet*); however, ...

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   but: This play (*Romeo and Juliet* by Shakespeare) is an early tragedy.
  - however: These plays (*Romeo and Juliet* and *Hamlet*) are tragedies. also: I like this play (*Hamlet*); however, ...
- $\blacktriangleright$  + is not italicized:  $r\acute{e}m + es + en$



the suffix does not normally inherit the font style in English
The word *unnatural* is spelt with two *n*'s.
For war veterans, the issue of POWs is painful.

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### styles for emphasis: summary

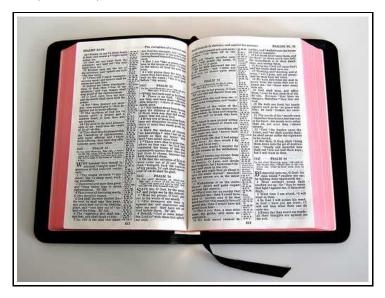
- *italic:* gentle, best for text with a lot of emphasis
- bold: distinctive, best for texts with a small number of emphasis
- SMALL CAPS: rather old-fashioned, problematic: no true small caps
- underlining: used with typewriters; should be avoided
- letterspacing: very distractive, should be avoided
- sans serif within serif text/colour: especially in presentations, online, and magazines

# font sizes > typographical units

#### absolute typographical units: beginnings

- ▶ for 300 years after Gutenberg: no standard system of measurement
- type foundries: individual systems
- type sizes/typographical units: named after the publication they were used in
- naming/actual sizes varied

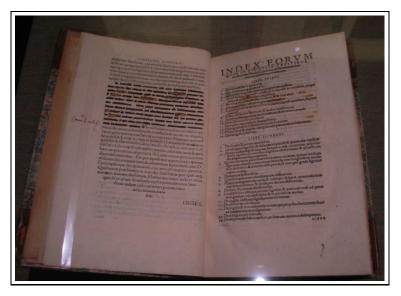
### "brevier" /brəvíjə/ for breviers $\sim$ 8 pt



## "canon" for hymn books $\sim$ 48 pt



## "pica" /pájkə/ for church decrees $\sim 11\text{--}12\,\text{pt}$

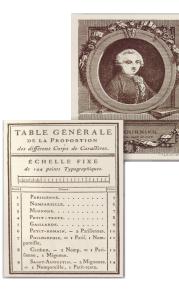


# list of common type sizes in the past

Pearl	5 pt
Agate	5.5 pt
Nonpareil	6 pt
Minion	7 pt
Brevier	8 pt
Borgeois	9 pt
Long Primer	10 pt
Small Pica	11 pt
Pica	12 pt
English	14 pt
Great Prim	er 18 pt

size

## absolute typographical units: the French point



### **Pierre Simon Fournier Le Jeune** (1712–1768), (France)

- first for systematic typographical units (1737)
- divides 1 'royal inch' into 6 equal sections (cicéro)
- each cicéro divided into 12 sections (point)
- ▶ 1 cc = 12 pt (1 pt  $\approx$  0.345 mm)
- English/American point is similar: 1 inch divided into 6 parts = pica (pc); 1 pc divided into 12: 1 point

## absolute typographical units: PostScript point



#### Adobe Corporation, California

- Adobe corporation (the inventors of digital PostScript fonts) rounded off the pica-point to exactly <sup>1</sup>/<sub>72</sub> inch (PostScript or DTP point)
- this is the system that (most) computer typographic software use, and is thus now rather widespread

point: size of typefaces, spacing: paragraph indents, line spacing

- point: size of typefaces, spacing: paragraph indents, line spacing
- **pica** for larger units: line/column width, text area, page margins, etc.

- **point**: size of typefaces, spacing: paragraph indents, line spacing
- pica for larger units: line/column width, text area, page margins, etc.
- a book typeset with 10 pt font with a line spacing of 12 pt and a typeblock of 26 pc: 10/12×26 or: 10/12 pt × 26pc

# fontsize, linespacing and textwidth info in books

# Colophon

This manual was typeset using the LaTeX typesetting system created by Leslie Lamport and the memoir class. The body text is set 10/12pt on a 33pc measure with Palatino designed by Hermann Zapf, which includes italics and small caps. Other fonts include Sans, Slanted and Typewriter from Donald Knuth's Computer Modern family.

# relative ("sliding") units

relative units

# relative ("sliding") units

# **ex** (vertical spacing)

# relative ("sliding") units

# ex (vertical spacing) em, en (horizontal spacing)

# definition of relative/sliding units

1 em = the size of the given font; length between highest point and lowest point of a given font

# definition of relative/sliding units

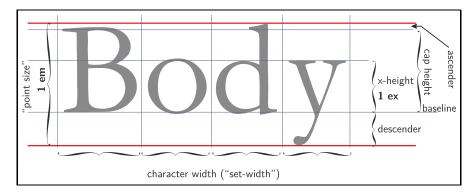
- 1 em = the size of the given font; length between highest point and lowest point of a given font
- 1 en = half of 1 em

# definition of relative/sliding units

- 1 em = the size of the given font; length between highest point and lowest point of a given font
- 1 en = half of 1 em
- 1 ex = the size of the x-height in the given font

#### relative units

# font metrics parameters



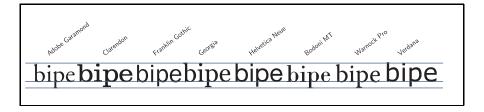
the point size is fixed, the designer can only manipulate the other parameters  $% \left( {{{\mathbf{x}}_{i}}} \right)$ 

# why is x-height important?

# subjective size depends on x-height



# subjective size depends on x-height



#### the em

# ems in Word

Symbols	Special Characters		
Character:		Shortcut key:	
_	Em Dash	Alt+Ctrl+Num -	^
-	En Dash	Ctri+Num -	
	Nonbreaking Hyphen	Ctrl+Shift+_	
	Optional Hyphen	Ctrl+*	
	Em Space		
	En Space		
	1/4 Em Space		
۰	Nonbreaking Space	Ctrl+Shift+Space	
6	Copyright	Alt+Ctrl+C	
۲	Registered	Alt+Ctrl+R	
TM	Trademark	Alt+Ctrl+T	
5	Section	Shift+0	
1	Paragraph		
	Ellipsis	Alt+Ctrl+.	
× .	Single Opening Quote	Alt+Ctrl+7,7	
	Single Closing Quote	Ctrl+','	
~	Double Opening Quote	Alt+Ctrl+7,"	
	Double Closing Quote	Ctrl+',"	
	No-Width Optional Break		
	No-Width Non Break		

#### the em

# $\mathsf{emdash} = 1 \; \mathsf{em} = \mathsf{point} \; \mathsf{size}$



# $\mathsf{emdash} = 1 \mathsf{em} = \mathsf{point} \mathsf{size}$



# characters which are 1-em long

- the em is usually not the width of an 'M' or 'm'
- characters that are usually 1 em long:
   (em dash), ... (ellipsis), ‰ (per-thousand), sometimes @

1 em equals the font size (height)

- 1 em equals the font size (height)
- if we change font size, the em will change with it proportionally

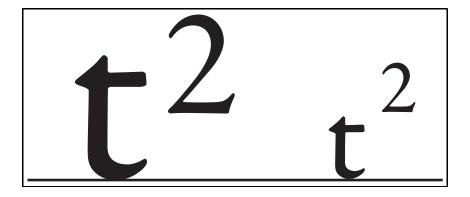
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- so if we want a size change that is proportionate to the font size change, we use the em (and the en, ex)

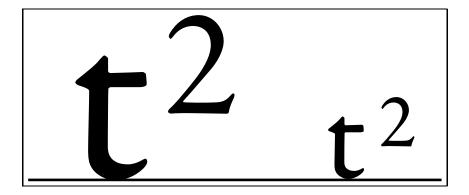
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- horizontal spacing: letterspacing: kerning & tracking, interword spacing, spacing after punctuations
- vertical spacing: character shift

# vertical character shift: defined with an absolute unit



# vertical character shift: defined with ex



# horizontal spacing of glyphs: kerning & tracking

kerning (egalizálás)

# A targeted adjustment of space between specific glyph pairs.

# horizontal spacing of glyphs: kerning & tracking

kerning (egalizálás)

A targeted adjustment of space between specific glyph pairs.

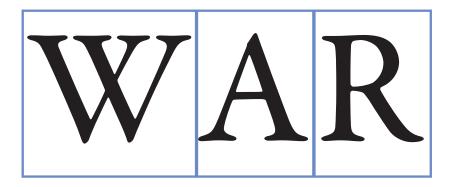
# tracking (range/track kerning; betűritkítás/-sűrítés)

A generalized adjustment of spacing between all the glyphs in a range of text.

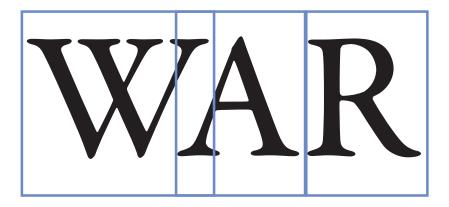
# kerning between 'W' and 'A'



# kerning between 'W' and 'A'



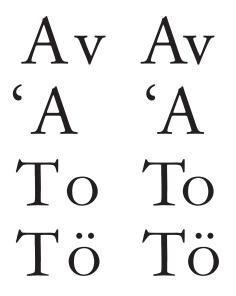
# kerning between 'W' and 'A': -0.2 em



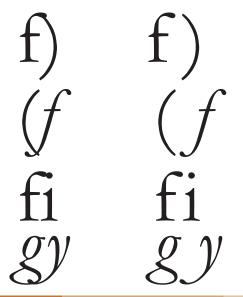
# kerning between 'W' and 'A': -0.2 em



# examples of negative kerning



# examples of positive kerning



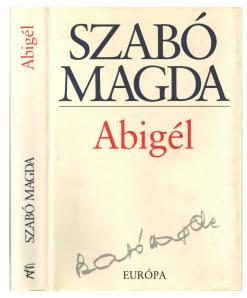
kerning

# kerning: quotation marks

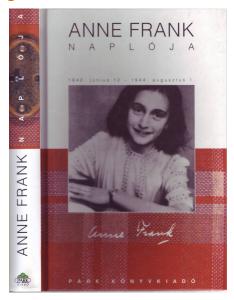
"is 'nice", "is 'nice"

"Vész" "Vész"

#### negative tracking for capitals



# positive tracking



tracking in Gothic backletter for emphasis

Nach Auffa[[ung der Komi[[ion gehört dazu, dah dir Regierung

proportion of black and white on a page

- proportion of black and white on a page
- must be even, not dark (tight setting) or pale (loose setting)

- proportion of black and white on a page
- must be even, not dark (tight setting) or pale (loose setting)
- bad text colour affects legibility & readability!

# legibility and readability

#### legibility

the reader's ability to easily **recognize** letterforms and the word forms built from them

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#### readability

the facility and comfort with which text can be comprehended

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#### readability

the facility and comfort with which text can be comprehended

Text with good readability must also be legible, but mere legibility does not make text readable.

design of typeface (e.g., seriffed or sans serif font; size)

- design of typeface (e.g., seriffed or sans serif font; size)
- horizontal spacing between letters/words (letter/word spacing)

- design of typeface (e.g., seriffed or sans serif font; size)
- horizontal spacing between letters/words (letter/word spacing)
- vertical spacing between baselines: leading

#### alternately tight letterspacing $\Rightarrow$ varying colour

It has been suggested that Russian phase verbs head an aspectual functional projection that appears between vP and VP, L-AspP, but not an aspectual functional projection above vP, H-AspP. Moreover it has been suggested that L-AspP contributes to the interpretation of event internal properties, while H-AspP contributes to the interpretation of the event as a whole.

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legibility/readability

#### serif vs. sans serif font

# afgis Il rmn 🛛 Il rmn

tight spacing and sans serif fonts

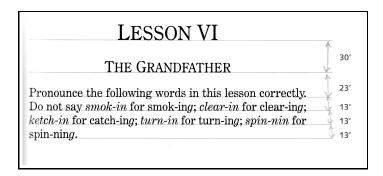
# márna Ernő kormos

# vertical spacing: leading

# vertical spacing: leading

leading (or: (base)lineskip, line/interline/interlinear spacing)

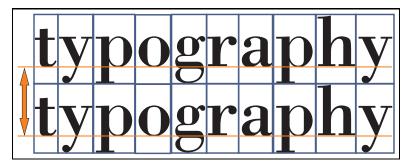
Leading  $/l \epsilon d i g / l \epsilon d i stance$  in points from the baseline of one line of type to the baseline of the line that follows (or precedes) it.



leading

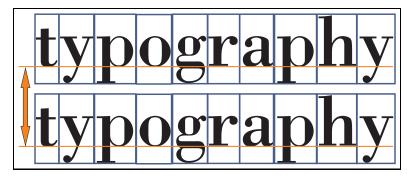
# solid leading (baselineskip = point size)

e.g., 12/12 pt ("12 on 12 points")



positive leading (baselineskip > point size)

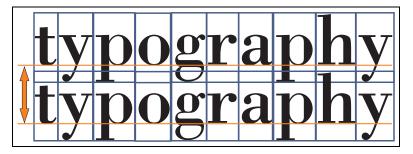
e.g., 12/14 pt ("12 on 14 points")



leading

negative leading (baselineskip < point size)

e.g., 12/10 pt ("12 on 10 points")



leading

common point sizes and leadings for publications

- ▶ 9/11 (e.g., footnote)
- ▶ 10/12 (A/5, B/5 book)
- 11/13 (B/5 book)
- $\blacktriangleright$  12/15 (home papers, theses)

# auto(matic) leading

#### automatic leading: some characteristics

**•**"single"  $\neq$  solid leading, but around 1.2 of the point size

it is recommended to turn off automatic leading, and use manual/fixed leading

# tips for even text colour in longer main text

- do not use sans serif fonts
- do not change the tracking
- stick to the recommended leading for the given point size
- increase leading for sans serif fonts and/or fonts with wide glyphs

#### linguistic data in running text should be set in

- 1. small cap
- 2. italic
- 3. within quotation marks
- 4. roman

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#### which one is the odd one out?

- 1. regular
- 2. semibold
- 3. thin
- 4. condensed

#### linguistic data in running text should be set in

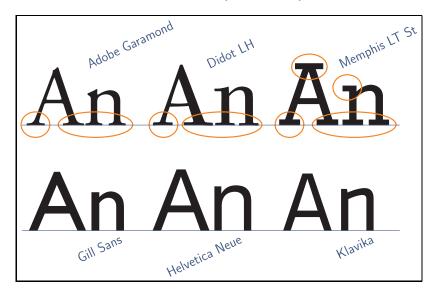
- 1. small cap
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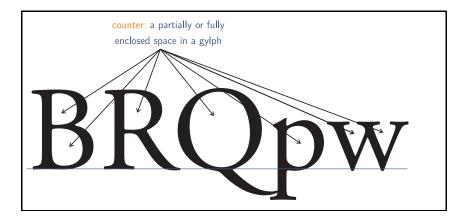
- 1. regular
- 2. semibold
- 3. thin
- 4. condensed

# appendix: font anatomy...

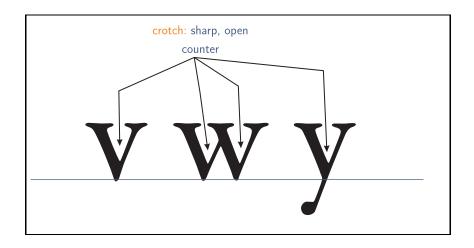
# type anatomy: serif-sansserif (unserifed); stroke-terminal



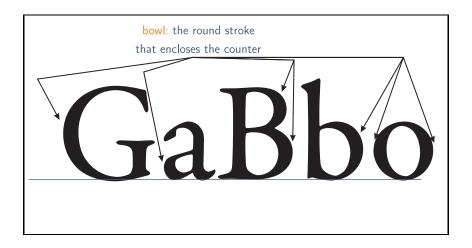
#### counter



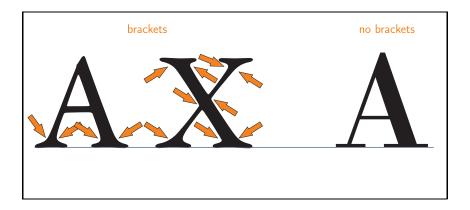
# crotch



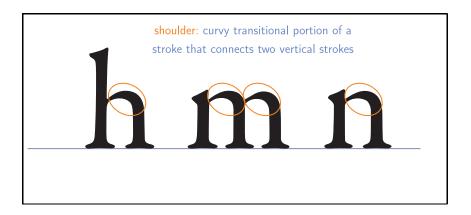
#### bowl



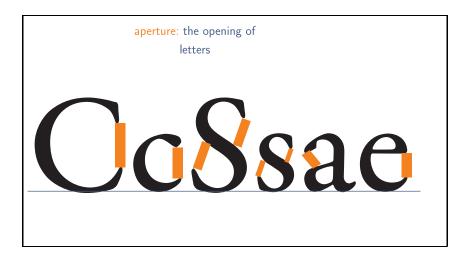
# bracket (on finishing serif or letter-internally)



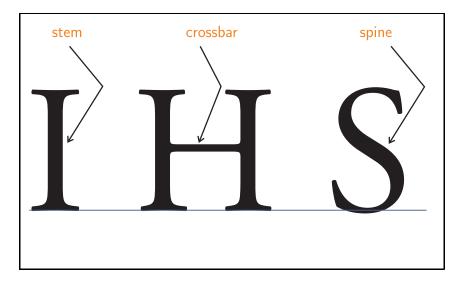
#### shoulder



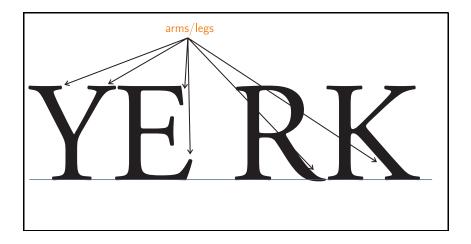
#### aperture



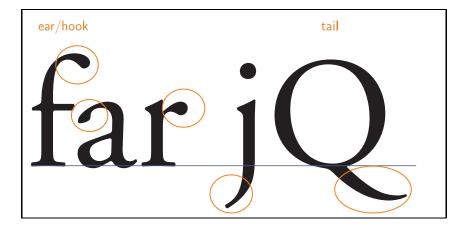
#### stem – crossbar – spine



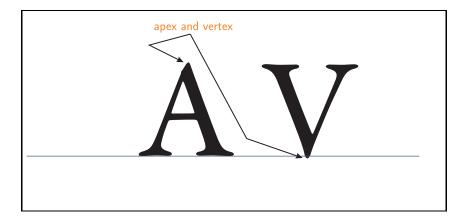
# arms/legs



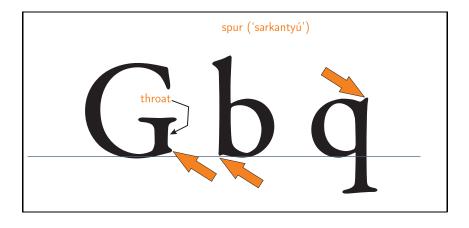
# terminals: ear/hook & tail



#### terminals: apex & vertex



# terminals: spur



# link and loop in 'g'

