BBN–ANG–183 Typography
Page layout

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working in academia

working in academia

- publishing (a lot of) papers
- theses
- research: scientific journals and books
- needed to evaluate you (appraisal)

working with publishers

- publishing papers in journals of established publishers
- working in academia = working with publishers
- you will have to know how they work, what they expect from you
  – and they expect a lot of typographical knowledge from you!

people you may be in contact with at a publisher

- ▶ **editor**: responsible for the overall content, quality of papers, relies on the evaluation of reviewers
- ▶ **proof-reader**: responsible for the language (grammar, accuracy), stylistic consistency
- ▶ **typographer/technical editor**: responsible for the form and visual content of the publication
- ▶ (product manager: financing, contracts, ads; printer)

working with publishers

- publishers expect you to be fully responsible for your **content**
- but also for the **form** of your publication
- this course is about the **typographical form** of your publication that **satisfies publishers**

from manuscript to publication

▶ manuscript → publisher → camera-ready to printer/e-book/online

1. publisher does it all, manuscript contains basic formatting
2. publisher provides stylesheet the manuscript must follow, but they create the camera-ready version
3. author does it all, including camera-ready version

   2. is the most common but **3.** occurs, too

aims to achieve today

- a general overview of terms, ideas of layout:
    - raw material of publishing
    - page sizes, proportions
    - optimal arrangement of document elements within page
    - grids
    - page "colour": spacing of text elements

3 basic considerations for the design of a publication

- ▶ the selection of **typefaces/fonts**
  – based on general guidelines for legibility, readability, printability, genre, etc.
- ▶ the compositional **arrangement** of page elements = **layout**
- ▶ the method of **distribution** (printed, electronic, book, brochure...)

today...

we are going to focus on layout

an example specific workflow

suppose the publisher . . .

- ▶ wants a camera-ready manuscript from you
- ▶ on a stock paper A4
- ▶ and plans to publish it in a book of size "B/5"
- ▶ with a "measure" of "22×31 picas"

general workflow

the general process of setting up one's own page layout

- ▶ (paper type)
- ▶ **stock** (e.g., "A4")
- ▶ **page size** (book shape) (e.g., "A/5")
- ▶ **trim** the stock to the size of the page size $\Rightarrow$ crop marks
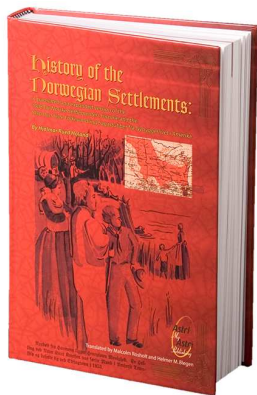- ▶ **design the layout** of your manuscript within the boundaries of the trimmed page size

page size: shape, proportions

the shape of books

- ▶ usually rectangular
- ▶ exceptions include children's books, and a book on epitaphs
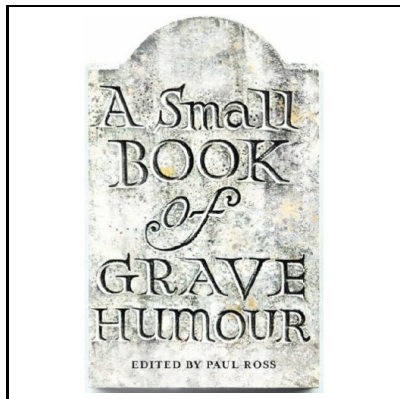
page proportions

- ▶ the ratio of the height (h) to the width (w) of a rectangle
- ▶ some proportions seem to be more pleasing to the eye than others
- ▶ tall shapes lead the eye downwards and easier to hold
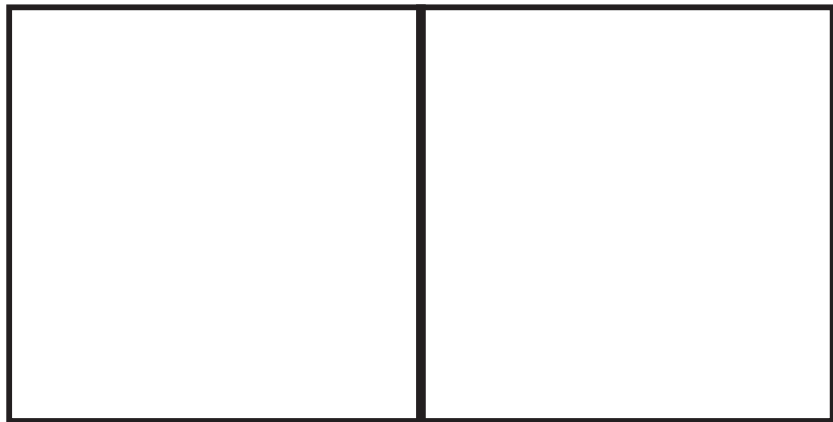- ▶ the same proportions pop up in many cultures (and nature!)

?

what are the most common traditional
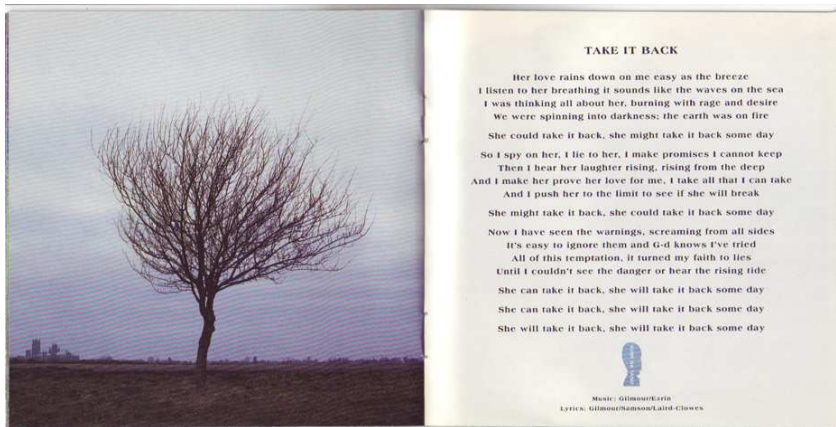page (& textblock) proportions?

page proportions

factors

- ▶ aesthetics
- ▶ tradition
- ▶ current industrial (standard) sizes

the square "unison" $(1:1)$

the square "unison" $(1:1)$ — CD booklets

common page proportions
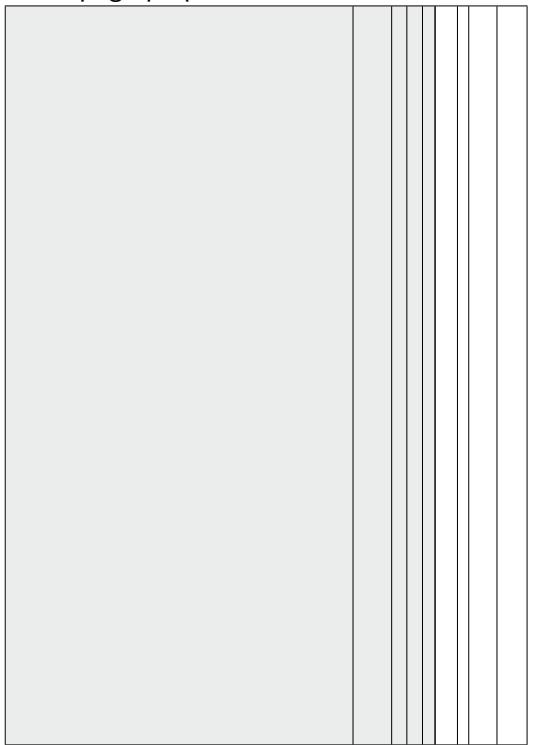
A   B C D φ E F   G   H
                  ✘   ✘

A $2:1$ D $5:3$ F $3:2$
B $9:5$ $\varphi\ 1.618:1\ (\varphi:1)$ G $1.414:1\ (\sqrt{2}:1)$
C $1.732:1\ (\sqrt{3}:1)$ E $1.538:1$ H $4:3$

page (& textblock) proportions: tradition & current standards

| name	proportion $(w : h)$	corresponding standard
octave (double square)	$1 : 2$	—
major 6th **golden section**	$3 : 5 \ (1 : 1.667)$ $1 : \varphi \ (1 : 1.618)$	$\approx$ **US** legal sheet $(1 : 1.647)$
fifth (Gutenberg)	$2 : 3 \ (1 : 1.5)$	$\approx$ **ISO** $(1 : \sqrt{2}/1 : 1.414)$
fourth	$3 : 4 \ (1 : 1.294)$	$\approx$ US letter sheet $(1 : 1.294)$
unison	$1 : 1$	CD booklets
major 3rd	$5 : 4 \ (1 : 0.8)$	$\approx$ US landscape letter $(1 : 0.773)$

some properties of ISO standard **A** series paper sizes

- ▶ A0 = 1 m^2 (1189 × 841 mm)
- ▶ the series has the proportion $\sqrt{2} : 1$
- ▶ all its members are reciprocal with themselves

some properties of ISO standard **B** series paper sizes

- ▶ larger than A0: 1400 × 1000 mm
- ▶ slightly less reciprocal than A series

ISO A series paper sizes
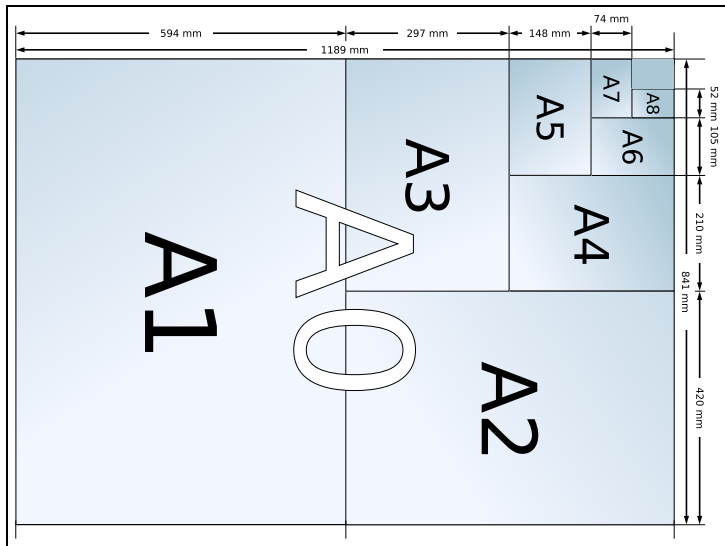
the ISO vs. America

- ▶ the ISO standard for paper sizes is widespread except in the US and Canada
- ▶ the most commonly used sizes for everyday activities are:
  - ▶ **letter size** ($8.5 \times 11''$ (inch), 216×279 mm) – slightly wider and smaller than A4
  - ▶ **legal size** ($14 \times 8.5''$, 355.6×215.9 mm) – slightly wider and taller than A4

and now, a brief maths detour

the golden section & Fibonacci series

four special irrational numbers

- $\pi = 3.14159\ldots$ —the circumference of a circle whose diameter $= 1$
- $e = 2.71828\ldots$ —the base of natural logarithms
- $\sqrt{2} = 1.41421\ldots$ —the diagonal of a unit square
- $\boxed{\varphi = 1.61803\ldots}$ —the golden section/ratio

the golden section

▶ also called: "extreme and mean ratio" (Euclid), "the divine proportion", "medial section"

▶ two elements embody the golden sec. when the ratio of the larger to the smaller is the same as the ratio of the sum of the two to the larger

$a+b$ is to a as a is to b
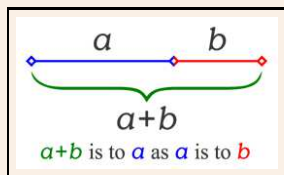
▶ $\varphi = \frac{b}{a} = \frac{a+b}{b}$ $(a > b)$

▶ $\varphi = \frac{(1+\sqrt{5})}{2} \approx 1.61803\ldots$

▶ named after Phidias (5th c. BC); used it in his sculptures

golden ratios in the Parthenon

the relationship between φ, rabbits and sunflowers

▶ Leonardo of Pisa ("Fibonacci"), in: *Liber Abaci* [*Book of the Abacus*], 1202:

▶ "How many pairs of rabbits can be produced from a single pair in a year? Assume that (1) each pair produces a new pair of offspring every month, (2) a rabbit becomes fertile at age one month, and (3) no rabbits die during the year."

▶ 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1,597 . . .

▶ this is the **Fibonacci series**

▶ the ratio of any adjacent pair of terms oscillates around φ ($= 1.618 \ldots$), approaching it ever more closely

the golden section/"perfect" proportion often used in typography

- ▶ page sizes
- ▶ textblocks, margins
- ▶ font size changes
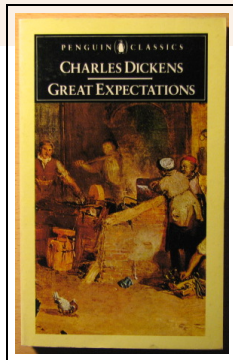
the Fibonacci (logarithmic) spiral
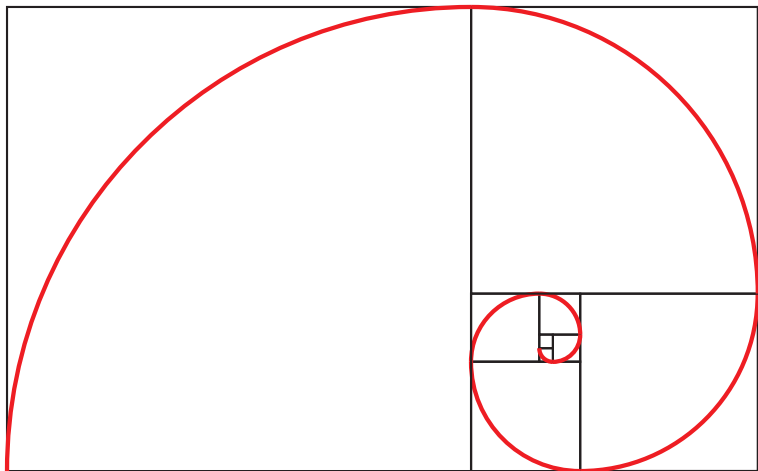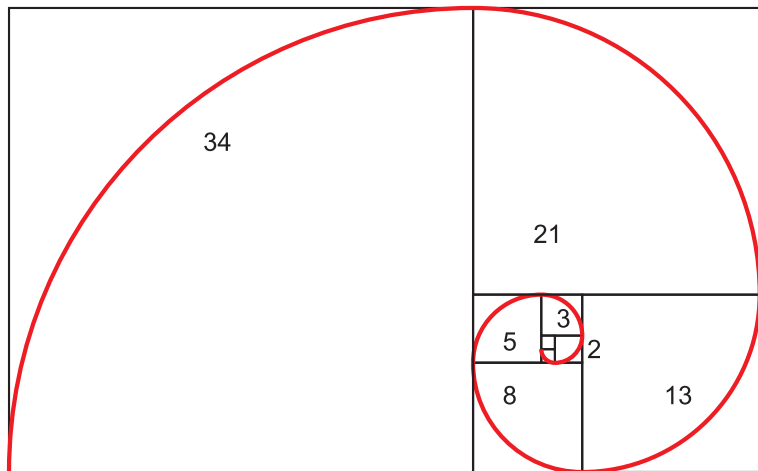
the Fibonacci (logarithmic) spiral

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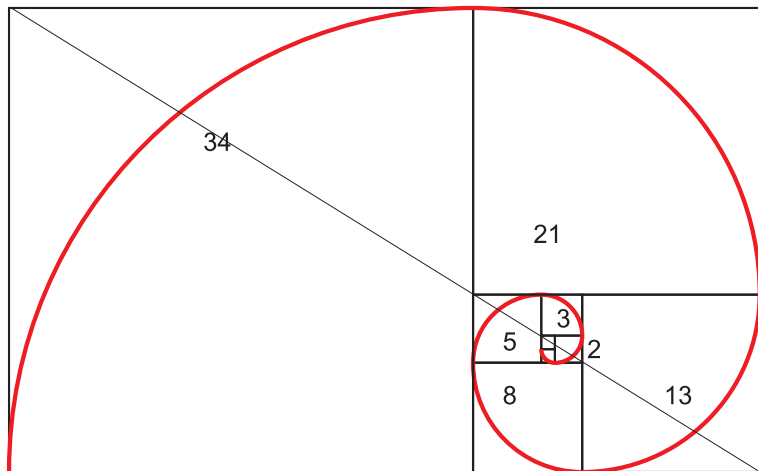
the Fibonacci (logarithmic) spiral
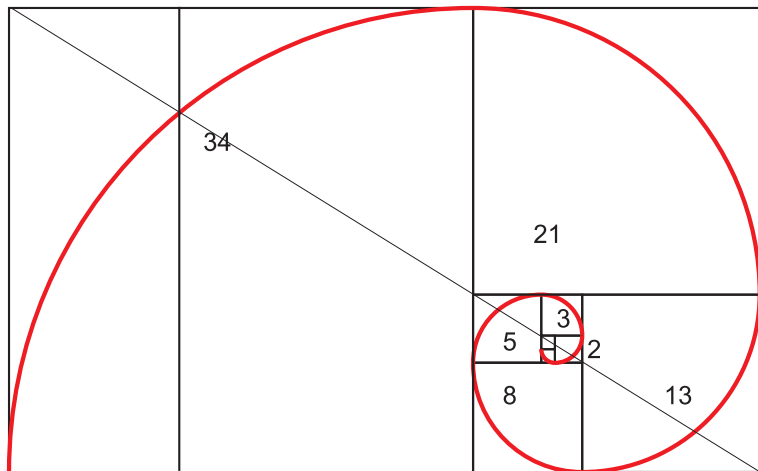
the Fibonacci (logarithmic) spiral
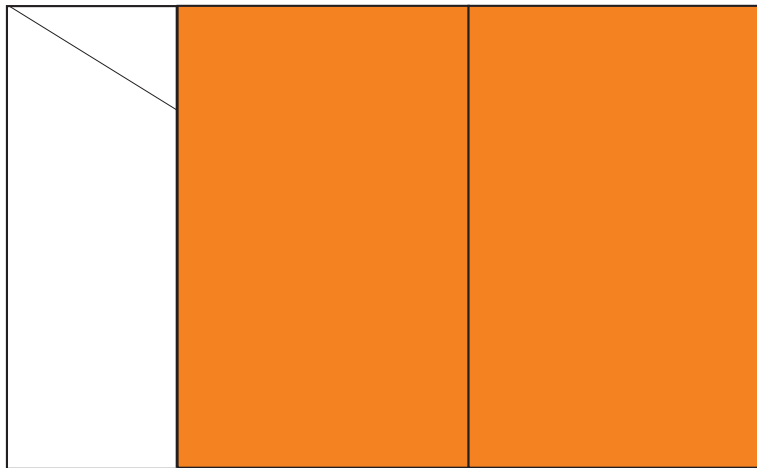
tablet/mobile devices & the golden ratio

http://gold3nratio.tumblr.com/
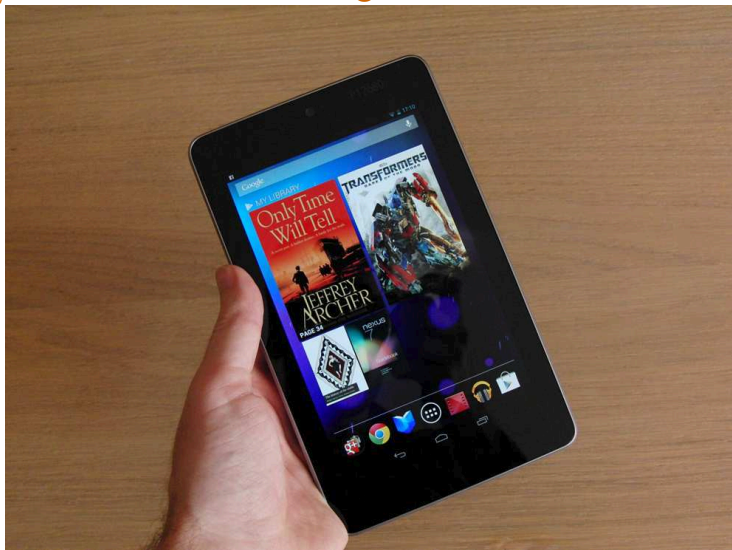
Fibonacci spiral in photography: detail vs. space

Fibonacci spiral in web design: 'content clustering'

http://www.hongkiat.com/blog/golden-ratio-in-moden-designs/

Fibonacci spiral in fight scene

Fibonacci patterns in sunflower floret spirals

Fibonacci spiral in a nautilus shell

Fibonacci spiral in clouds
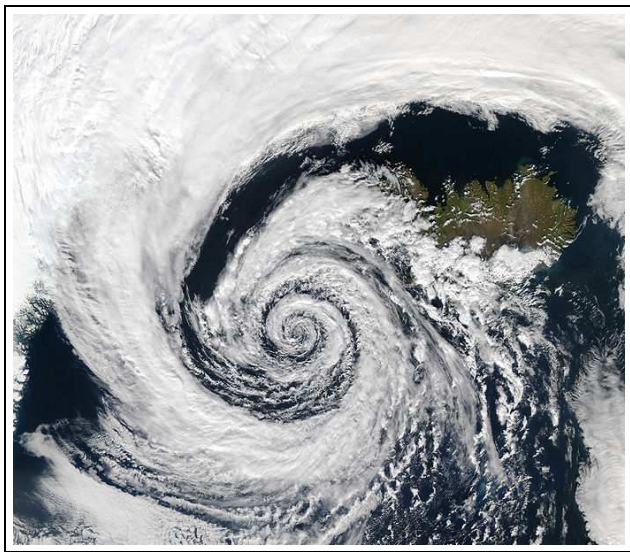
Fibonacci spiral in cats
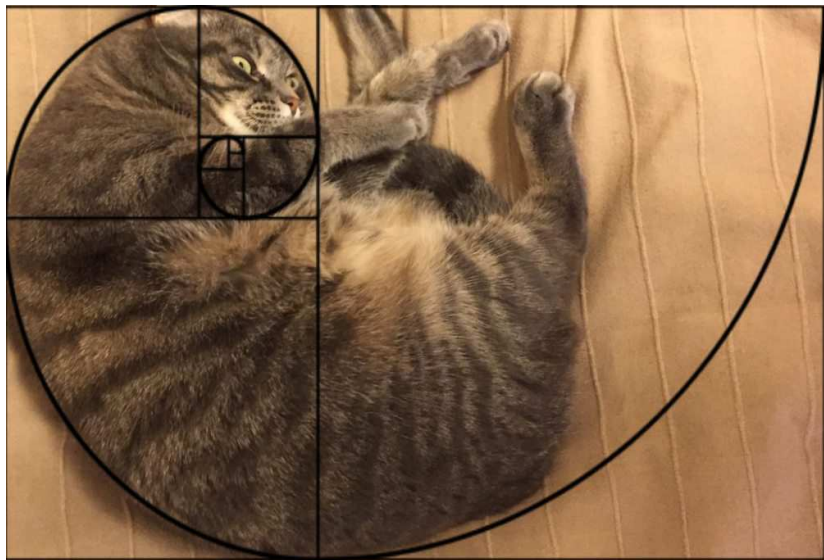
Fibonacci series in font size changes

font sizes

- 5, 8, 13, 21, 34, 55, 89 . . .
- more versatile: 5, **6**, 8, **10**, 13, **16**, 21, **26**, 34, **42**, . . .

stock page size $\neq$ trimmed book size
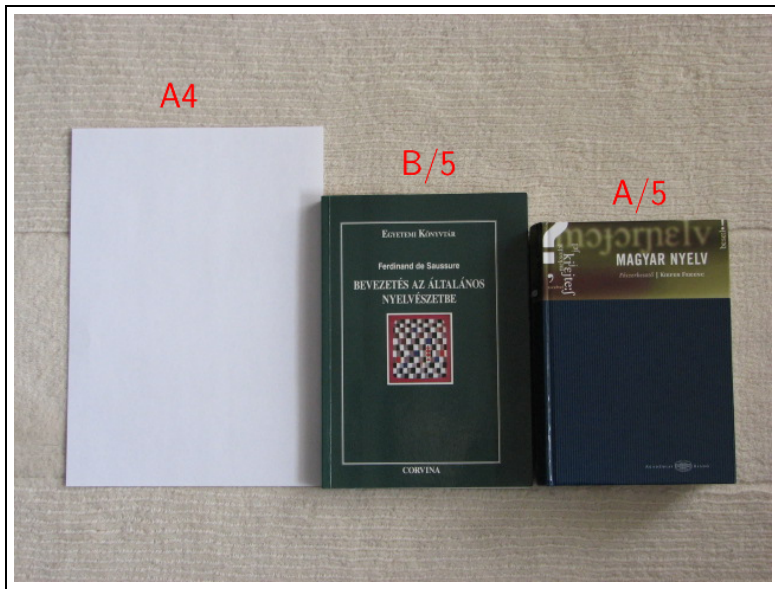
A5 stock—A/5 book size

A5 paper (148 × 210 mm)

A/5 book (142 × 197 ±2 mm)

B5 stock—B/5 book size

B5 paper (176 × 250 mm)

B/5 book (168 × 238 ±2 mm)

Lorem Ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec metus tortor, vestibulum vel ultrices ut, faucibus id arcu. Aenean condimentum euismod felis quis sollicitudin. Ut ac nulla vel enim tristique euismod. Curabitur porta lobortis tellus, non pulvinar tortor mattis non. Sed bibendum risus ac risus.

textblock

trimmed size

bleed area

slug area

bleed & slug

textblock
margin

trimmed size

bleed area

slug area
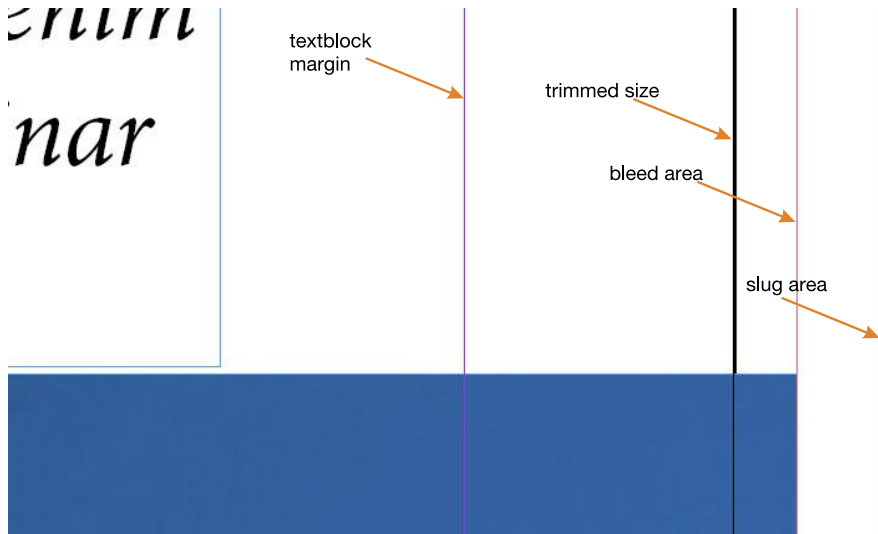
layout areas for printing

textblock

the area for the text (and pictures, etc.)

trim area

▶ the distance between the textblock & edge of trimmed page

▶ the textblock + margins

▶ shown by crop marks

layout areas for printing

bleed area

- ▶ area that goes beyond where the paper will be trimmed
- ▶ artwork and background colors often extend into it
- ▶ indicated by bleed marks

slug area

- ▶ area that will never be printed after trimming; outside bleed area
- ▶ may contain printing or color information, or display other instructions for the printer

colour bars

slug info + registration mark

crop mark

bleed mark

7/May/2009

Lorem Ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec metus tortor, vestibulum vel ultrices ut, faucibus id arcu. Aenean condimentum euismod felis quis sollicitudin. Ut ac nulla vel enim tristique euismod. Curabitur porta lobortis tellus, non pulvinar tortor mattis non. Sed bibendum risus ac risus.

specifying bleeds & slug in an application
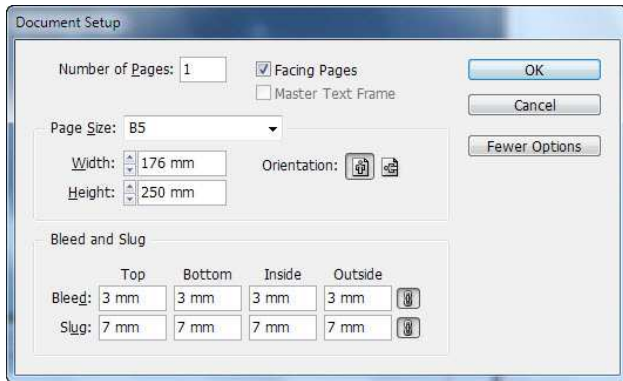
some standard stock and trimmed book sizes

press sheet size (mm)	stock	size (mm)	trimmed book size (mm)
841×1189 (=A0)	A4	210×297	A/4: $202 \times 285 \pm 2$
	A5	148×210	**A/5: 142 $\times$ 197$\pm$2**
700×1000 ($\approx$B1)	B4	250×353	B/4: $243 \times 336 \pm 2$
	B5	176×250	**B/5: 168 $\times$ 238$\pm$2**

press sheet/broadsheet = 'nyomdai nyersív'

length in press sheet in the colophone

A kiadásért felelős az Akadémiai Kiadó Rt. igazgatója
Felelős szerkesztő: Siptár Péter
Termékmenedzser: Hesz Margit
Fedélterv: Starkiss Stúdió
A számítógépes szerkesztés Győrei D. László munkája
A nyomdai munkálatokat az EFO Kiadó és Nyomda Kft. végezte
Felelős vezető: Fonyódi Ottó
Budapest, 2003
Kiadványszám: KMA2-105
Megjelent 54,7 (A/5) ív terjedelemben

Printed in Hungary

press sheet

- ▶ in Hungarian books (colophone) the length of a book is given in **press sheets**
- ▶ one press sheet = **16** pages
- ▶ the standard is to measure in **A/5** pages
- ▶ if a book is printed on A/5 trimmed size, its length = $\frac{p}{16}$ A/5 sheets
- ▶ e.g.: if your book is 512 pages long, its length is $\frac{512}{16} = 32$ A/5 sheets

press sheet

- ▶ what if the size is B/5 and not A/5?
- ▶ A-series stock is larger than B-series stock by **1.43** (e.g., A0 = 1m^2, B1 = 0.7m^2)
- ▶ if a book is printed on B/5 trimmed size, its length $= \frac{p \times 1.43}{16}$ A/5 sheets
- ▶ if your B/5 book is 612 pages long, its length is $\frac{612 \times 1.43}{16} = 54.7$ A/5 sheets

now we know the trimmed book size, what's next?

▶ create the **textblock (or: typeblock, type area, live area)** 'tükör', design its optimal horizontal and vertical length

▶ position the **textblock** within the book page ⇒ this creates **margins** around the textblock

▶ we add place for the optional **satellites: footer** and/or the **header**, and the marginal notes

▶ essentially thus we divide the available space of the page into **grids (frames)**

grids in typography

▶ essential part of page design

▶ give underlying **structure** and **consistency** to a document

▶ grid structure must be **balanced** and **orderly**

▶ most professional DTP applications (QuarkXpress, InDesign) rely on grid structure

main grid types in typography

▶ **column** grids: simple publications, books, **vertical** designs
▶ **modular** grids: more complex designs, **vertical–horizontal** designs; rectangular modules for content

an empty, unstructured trimmed spread
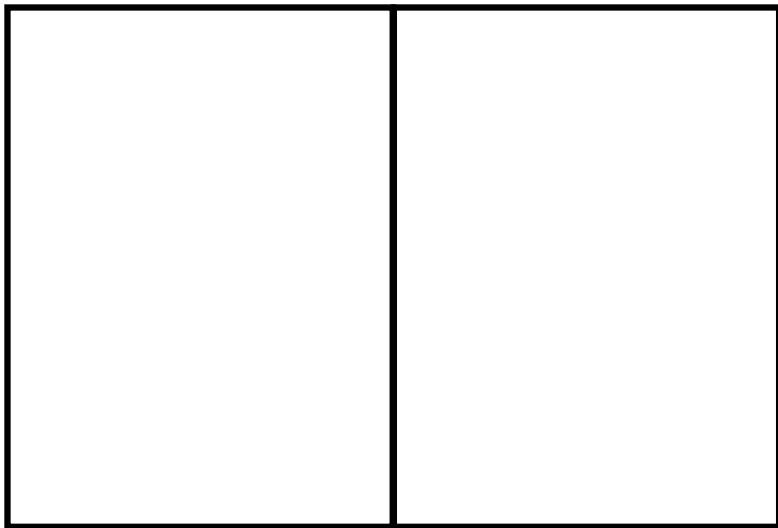
grids: structured trimmed spread
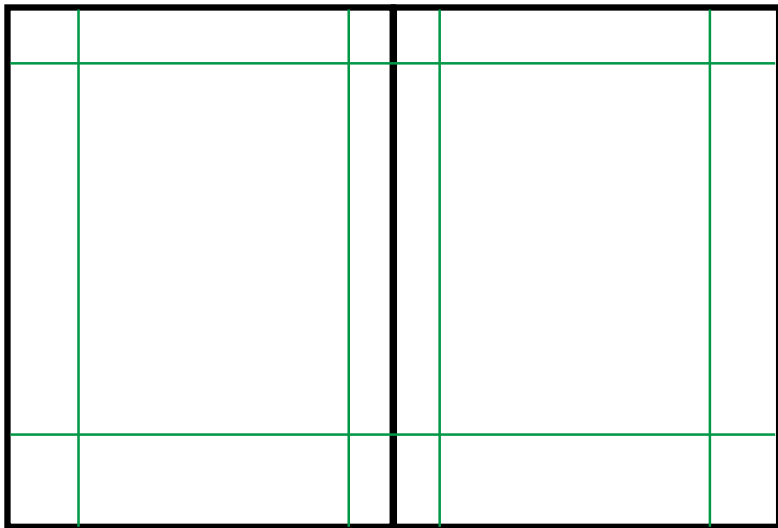
grids: structured spread
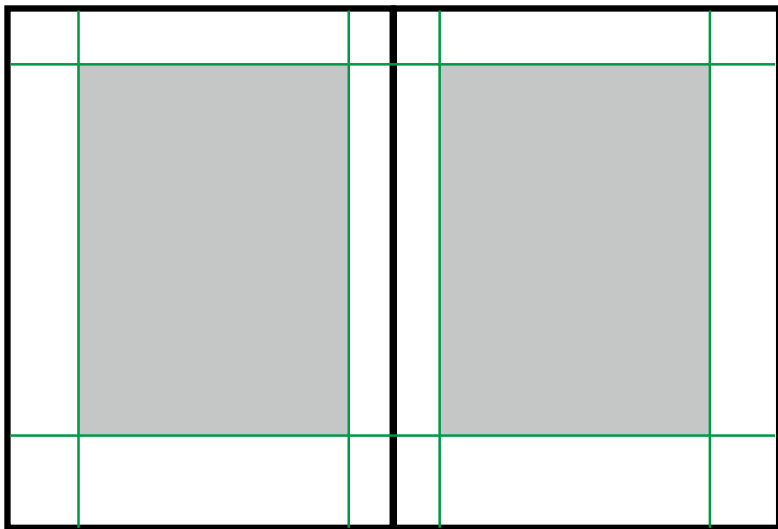
grids: underlying structure, consistency

elements of a recto page

page height

textwidth (measure)

textblock

textheight (depth)

trimmed page

page width

elements of a recto page

top margin

textwidth (measure)

fore-edge margin

textblock

spine margin

textheight (depth)
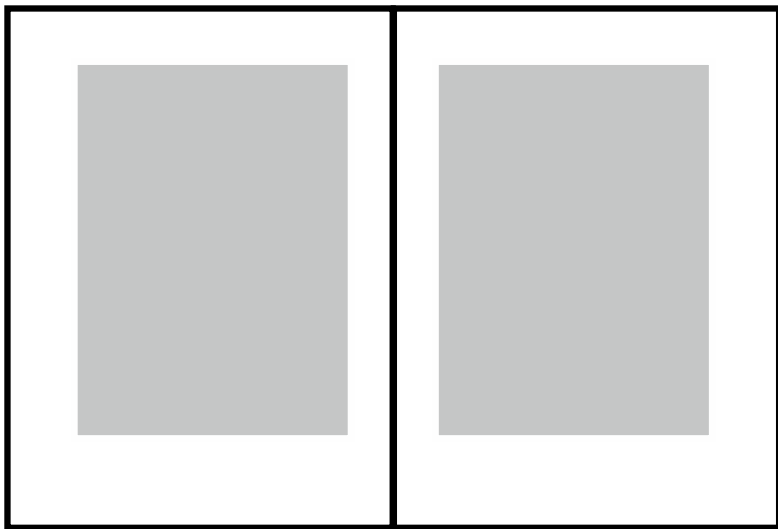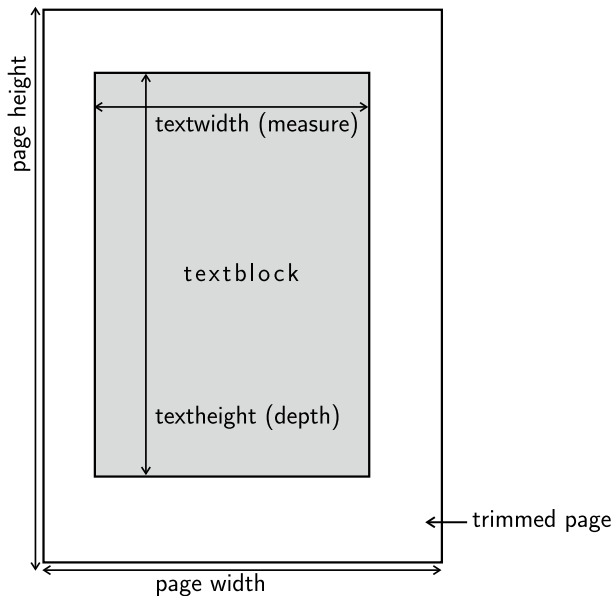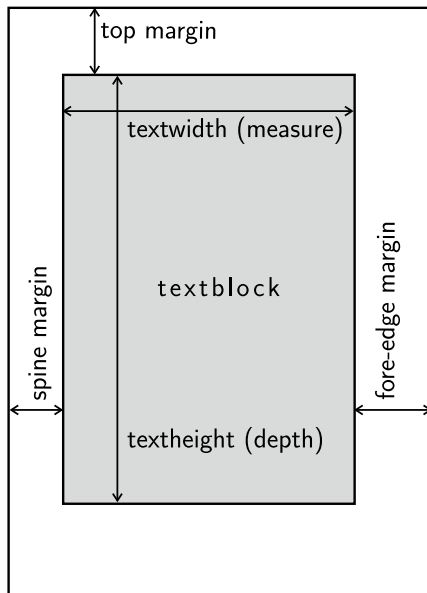
elements of a recto page: satellites

header

textwidth (measure)

marginal note

textblock

textheight (depth)
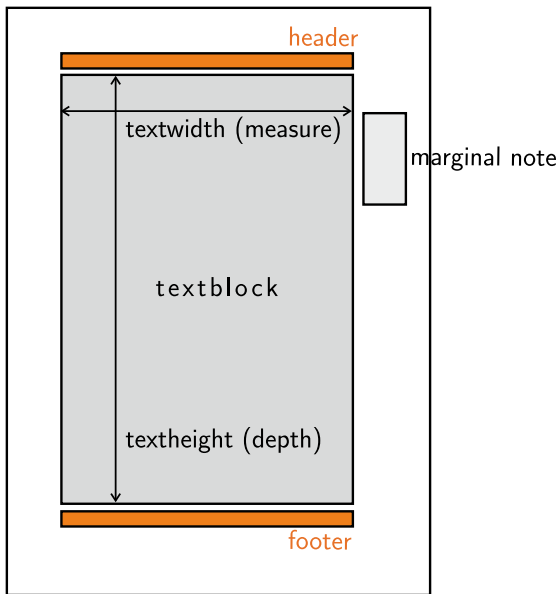
footer

inside and outside the textblock

- **header & footer:** usually not counted in the size of textblock (unless it contains only the folio, but that's rare)
- **footnotes:** always part of textblock
- **marginal notes:** never part of textblock

what can the header/footer contain?

- ▶ its main task is to be a nondisturbing **index**
- ▶ **the folio:** usually at the fore-edge margin, same pointsize as the text, avoid bold or italic or colour
- ▶ **nothing else:** if the book is *not* a collection of different articles
- ▶ **author**: usually in header and on *verso* page; often abbreviated, smaller size than main text, often in italic
- ▶ **title** (of chapter or section): usually in header and on *recto* page; often abbreviated, smaller size than main text, often in italic

example header: folio, author, title

168   *Gordeeva and Scobbie*

Maddieson 1996). Generally, the terms 'breathiness', 'aspiration', and 'whisper' relate to turbulent flow of air passing through the abducted glottis (Laver 1994: 189-190; Stevens 1998: 428). However, since the turbulent flow produced at the glottis is inseparable from the supraglottal constriction, we also follow in viewing aspiration as a source-filter composite varying in the precise combination of a glottal opening and a gradient supraglottal constriction shaping the turbulent flow (Kim 1970: 111; Ohala and Solé in this volume). The composite source-filter view of aspiration noise is helpful in explaining the notorious variety of phonetic labels ascribed to preaspiration in the literature (ranging from glottal [h ɦ] to palatal fricatives [ç], see e.g the overview in Silverman 2003), as well as in explaining the difficulty of assigning exact phonetic labels to preaspiration based on supraglottal characteristics.

Across languages and varieties, preaspiration can be 'normative' (a term introduced by Helgason 2002): i.e. a consistent characteristic, as in Icelandic (Thráinsson 1979), where it seems to be a major correlate of phonological contrasts exhibited by pairs like /viht/ ("wide") vs. /vitt/ ("breadth"). Scottish Gaelic exhibits subtle dialectal variation in /ptk/ (Ó Murchú 1985; Bosch 2008), varying from no preaspiration in the Eastern and Southern periphery, to the presence of clear preaspiration [hp ht hk] in

Preaspirated voiceless fricatives in Scottish English   169

from the human auditory system that negatively influence its perception (Bladon 1986). However, such considerations are not strong enough to mean that preaspiration cannot be a significant part of a language's high-level phonological system. Just on the perceptual side of things, speakers of the languages with /VhC/ sequences, such as Turkish and Arabic (where /h/ is a phoneme rather than obligatory intersegmental transition) are better attuned to the presence of [h] than speakers of English or French lacking segmental /VhC/ phonotactics (Mielke 2003). These considerations make close phonetic examination of comparable or more arguable cases of language varieties with unstable non-normative preaspiration a very worthwhile research strategy, especially if the phonetic underpinnings of this phenomenon and its functions are to be understood, as well as the influence of more general processes of co-articulation on synchronic and diachronic sound change (Ohala 1981, 1993; Ohala and Solé in this volume).

Most accounts of 'non-normative' preaspiration have so far considered preaspirated stops (e.g. van Dommelen 1998; Helgason 2002; Schaeffler 2005). While there are phonological contrasts with word-final postaspirated voiceless fricatives reported in languages like e.g. Bengali (see discussion in Vaux 1998), there have been no reports of normative preaspiration for fricatives. The possibility of preaspirated

# what size should the textblock & margins be?

considerations

- ▶ industry standards
- ▶ historical proportions
- ▶ practical issues: place for the thumbs, consistency of lines, glued or bound book, etc.

industry standards: textblock sizes

book size & corresponding textblock size

Trimmed book size	Typical textblock size
A/5 ($142 \times 197 \pm 2$ mm)	110×155 mm
B/5 ($168 \times 238 \pm 2$ mm)	123×185 mm

textblock & margin sizes in a B/5 book (mm)
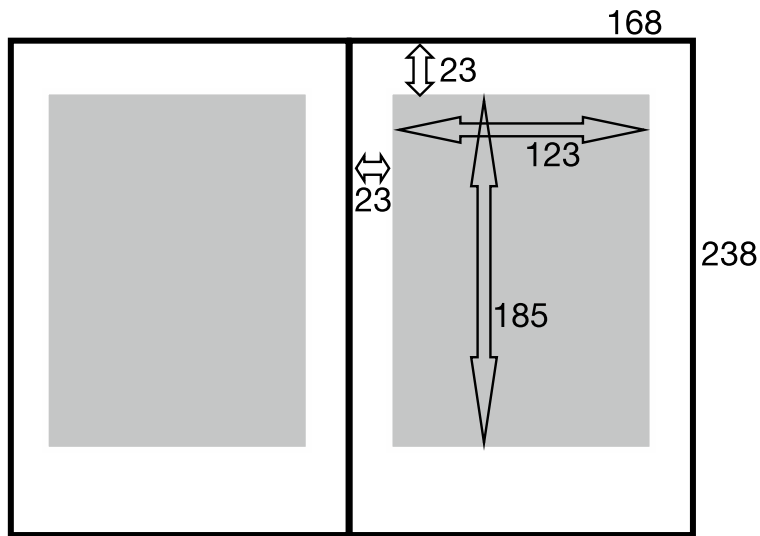
textblock & margin sizes in a B/5 book (mm)
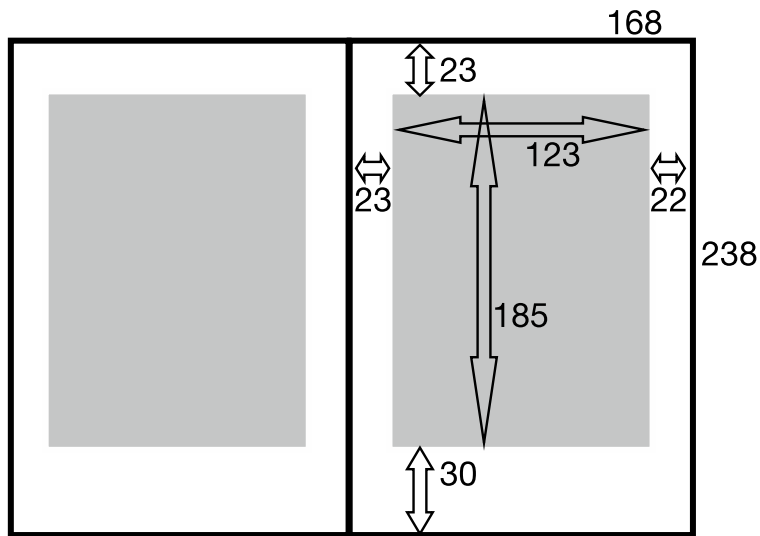
font width affects textblock size

▶ optimal horizontal size of textblock (**measure**): for a single column text: **60 to 70** (± 10) characters per line

▶ widths of characters in fonts are not uniform $\rightarrow$ optimal length varies from font to font

width — 10-pt Adobe Garamond

width — 10-pt Century Schoolbook
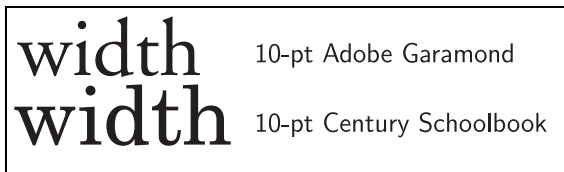
▶ **copyfitting**: finding the optimal textwidth for a given font

copyfitting method

1. measure the length of the **lowercase alphabet** (without accented characters) of the given font: abcdefghijklmnopqrstuvwxyz
2. use a **copyfitting table** to find out optimal measure of the line length
3. e.g., if the length of the alphabet is **145 pt**, the optimal measure should be between **26–28 pc** (109–119 mm):

AVERAGE CHARACTER COUNT PER LINE

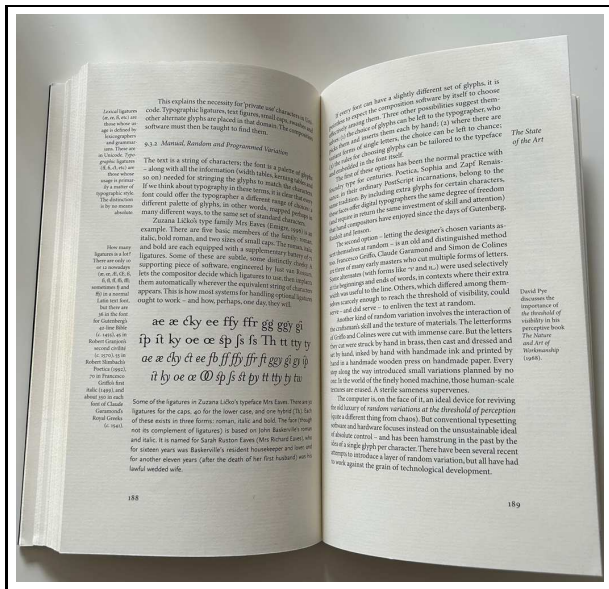|	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
80	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160
85	38	45	53	60	68	76	83	91	98	106	113	121	129	136	144	151
90	36	43	50	57	64	72	79	86	93	100	107	115	122	129	136	143
95	34	41	48	55	62	69	75	82	89	96	103	110	117	123	130	137
100	33	40	46	53	59	66	73	79	86	92	99	106	112	119	125	132
105	32	38	44	51	57	63	70	76	82	89	95	101	108	114	120	127
110	30	37	43	49	55	61	67	73	79	85	92	98	104	110	116	122
115	29	35	41	47	53	59	64	70	76	82	88	94	100	105	111	117
120	28	34	39	45	50	56	62	67	73	78	84	90	95	101	106	112
125	27	32	38	43	48	54	59	65	70	75	81	86	91	97	102	108
130	26	31	36	41	47	52	57	62	67	73	78	83	88	93	98	104
135	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
140	24	29	34	39	44	48	53	58	63	68	73	77	82	87	92	97
145	23	28	33	37	42	47	51	56	61	66	70	75	80	84	89	94
150	23	28	32	37	41	46	51	55	60	64	69	74	78	83	87	92
155	22	27	31	36	40	45	49	54	58	63	67	72	76	81	85	90
160	22	26	30	35	39	43	48	52	56	61	65	69	74	78	82	87
165	21	25	30	34	38	42	46	51	55	59	63	68	72	76	80	84
170	21	25	29	33	37	41	45	49	53	57	62	66	70	74	78	82
175	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
180	20	23	27	31	35	39	43	47	51	55	59	62	66	70	74	78
185	19	23	27	30	34	38	42	46	49	53	57	61	65	68	72	76
190	19	22	26	30	33	37	41	44	48	52	56	59	63	67	70	74
195	18	22	25	29	32	36	40	43	47	50	54	58	61	65	68	72
200	18	21	25	28	32	35	39	42	46	49	53	56	60	63	67	70
210	17	20	23	27	30	33	37	40	43	47	50	53	57	60	63	67
220	16	19	22	25	29	32	35	38	41	45	48	51	54	57	60	64
230	15	18	21	24	27	30	33	36	40	43	46	49	52	55	58	61
240	15	17	20	23	26	29	32	35	38	41	44	46	49	52	55	58
250	14	17	20	22	25	28	31	34	36	39	42	45	48	50	53	56
260	14	16	19	22	24	27	30	32	35	38	41	43	46	49	51	54
270	13	16	18	21	23	26	29	31	34	36	39	42	44	47	49	52
280	13	15	18	20	23	25	28	30	33	35	38	40	43	45	48	50
290	12	15	17	20	22	24	27	29	32	34	37	39	41	44	46	49
300	12	14	17	19	21	24	26	28	31	33	35	38	40	42	45	47
320	11	13	16	18	20	22	25	27	29	31	34	36	38	40	43	45
340	10	13	15	17	19	21	23	25	27	29	32	34	36	38	40	42
360	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

Read down, in the left column: lowercase alphabet length in points. *Read across,* in the top row: line length in picas.

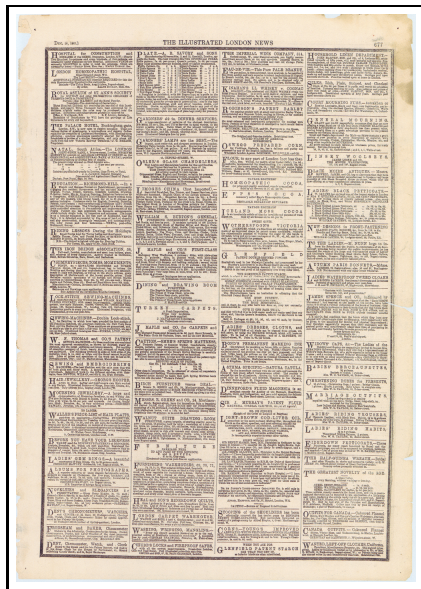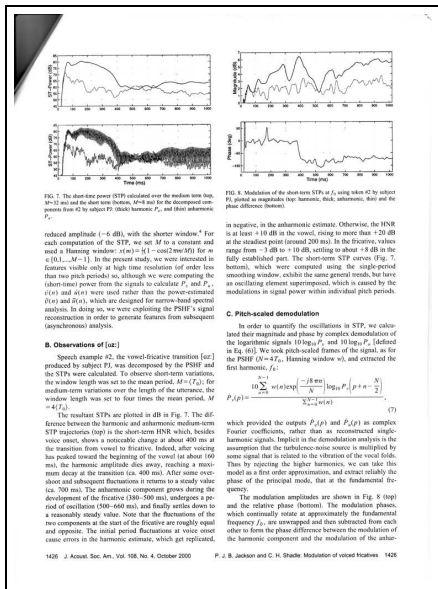Some examples of page designs/grid structure:

gkz & szp (delg)
typo/page layout
76 / 86

Historia naturalis, N. Jenson, 1472
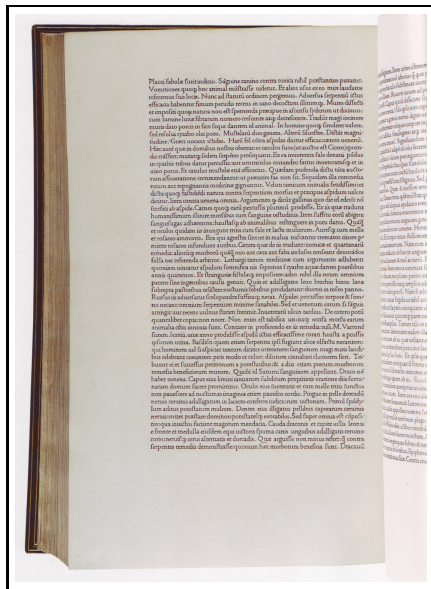
R. Bringhurst: *Elements of typographic style,* 2005
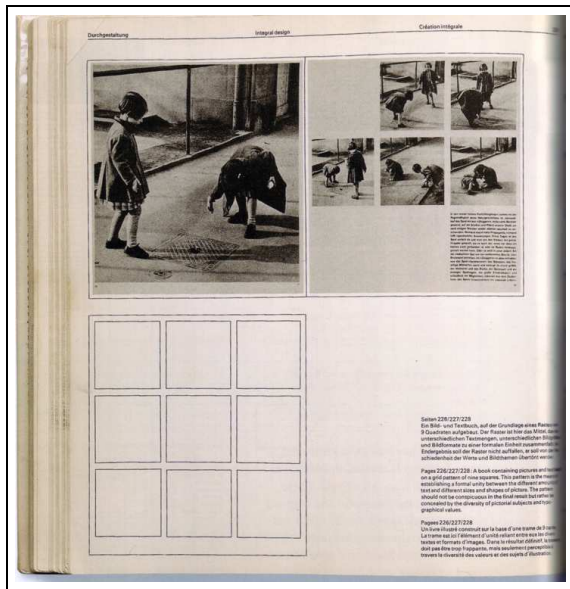
Biblia Polyglotta, C. Plantin, 1568, 5 languages
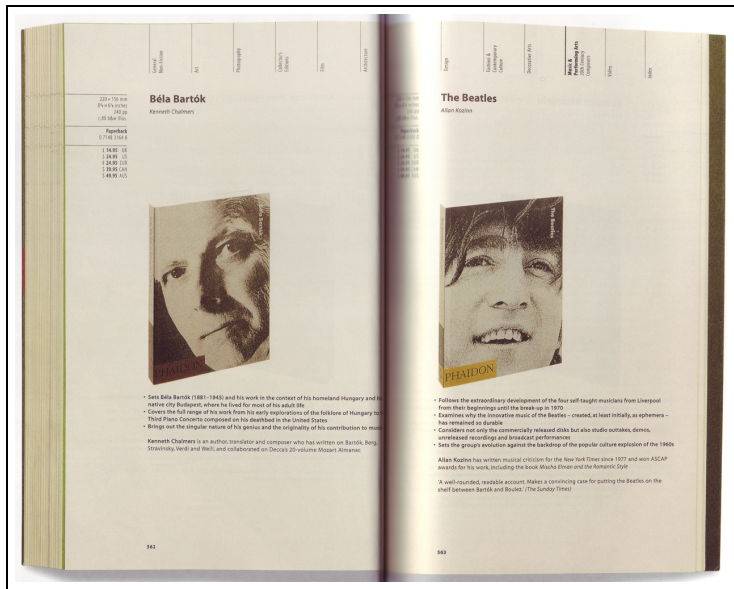
The Illustrated London News, 1861

two-column grid: *Journal of the Acoustical Soc. of America*

modular grids (Emil Ruder: *Typography;* 1967)

Phaidon, catalogue, 2003

Form + Zweck, journal, 1995

L. Antal: *A formális nyelvi elemzés*, 2005
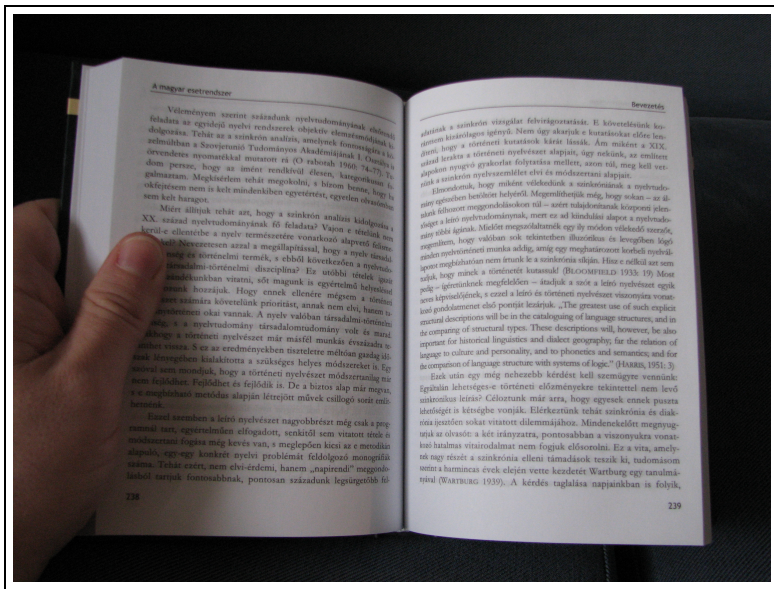
sample exam questions

Which is *never* part of the textblock?

1. footnotes
2. **marginal notes**
3. footer
4. folio

The printed area of the page that extends outside the cropped page is called

1. **bleed**
2. slug
3. press sheet
4. satellite