

A photograph of a long, rectangular wooden coffin resting on a wooden cart with four spoked wheels. The cart is positioned in a room with stone walls and a small arched niche. The coffin is made of dark wood and has a metal handle on the right side. The cart has a wooden frame and a metal axle. The floor is made of large stone tiles. The text "Exhuming coffins from the last century" is overlaid on the image in a bold, black font.

**Exhuming coffins from the
last century**

Frank Mittelbach

LaTeX3 Project

San Francisco June 2010

A morbid title ... So what is this all about?

- ~~What it is not about~~
- An exercise from the TeXbook
- Examples, examples, examples, ...
- A different kind of coffin
- Poles and handles
- Recreate „elementare typographie“
- ... and why is this exciting?
- Outlook



*Tutankhamun coffin
14th century BC*

From a TeXbook exercise

“Why do you think the author of `\TeX` didn't make boxes more symmetrical between horizontal and vertical, by allowing reference points to be inside the boundary instead of insisting that the reference point must appear at the left edge of each box?”

... and Don's answer in Appendix A

“No applications of such symmetrical boxes to English-language printing were apparent; it seemed pointless to carry extra generality as useless baggage that would rarely if ever be used, merely for the sake of symmetry.

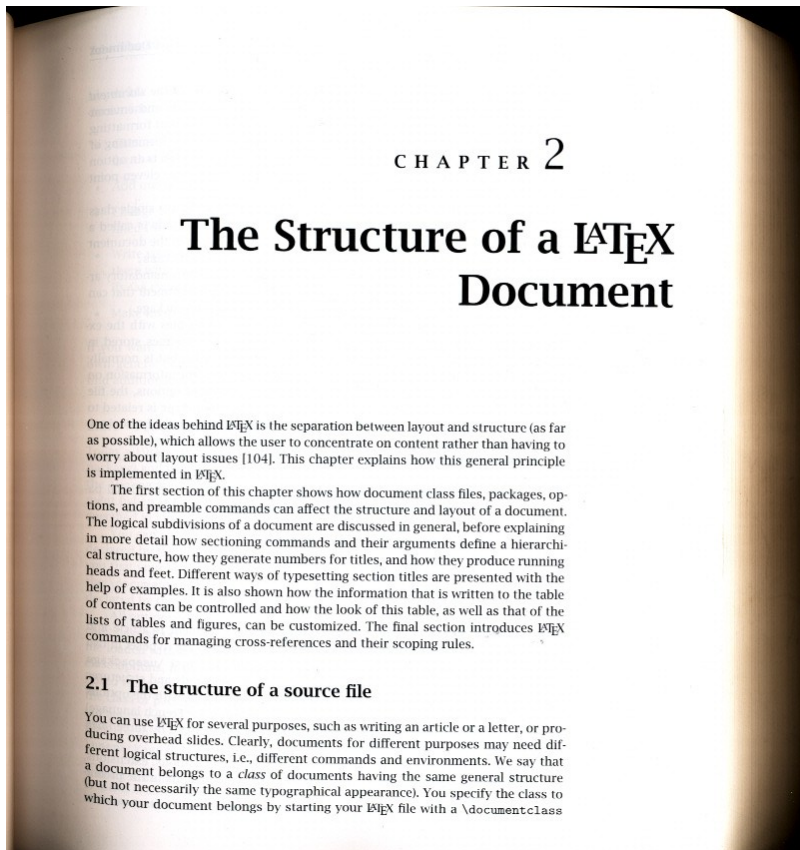
In other words, the author wore a computer science cap instead of a mathematician's mantle on the day that \TeX 's boxes were born.

Time will tell whether or not this was fundamental error!”

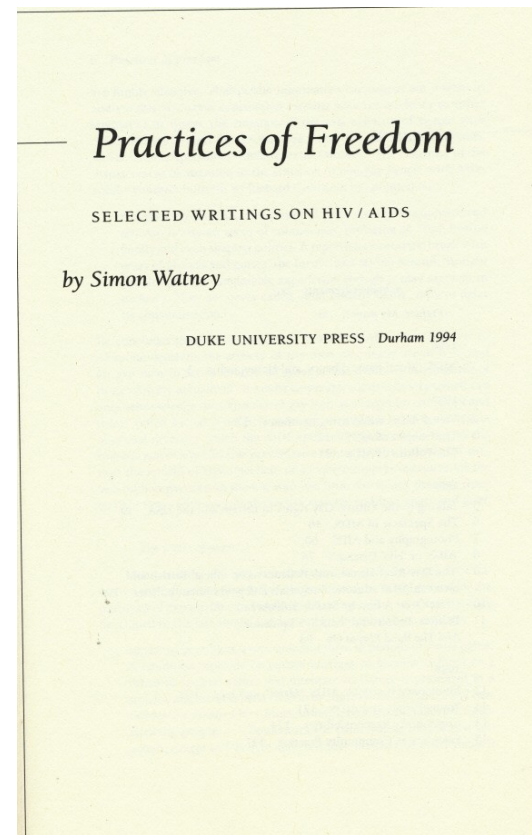
អង្គការក្រុមប្រឹក្សា

Some simple designs ...

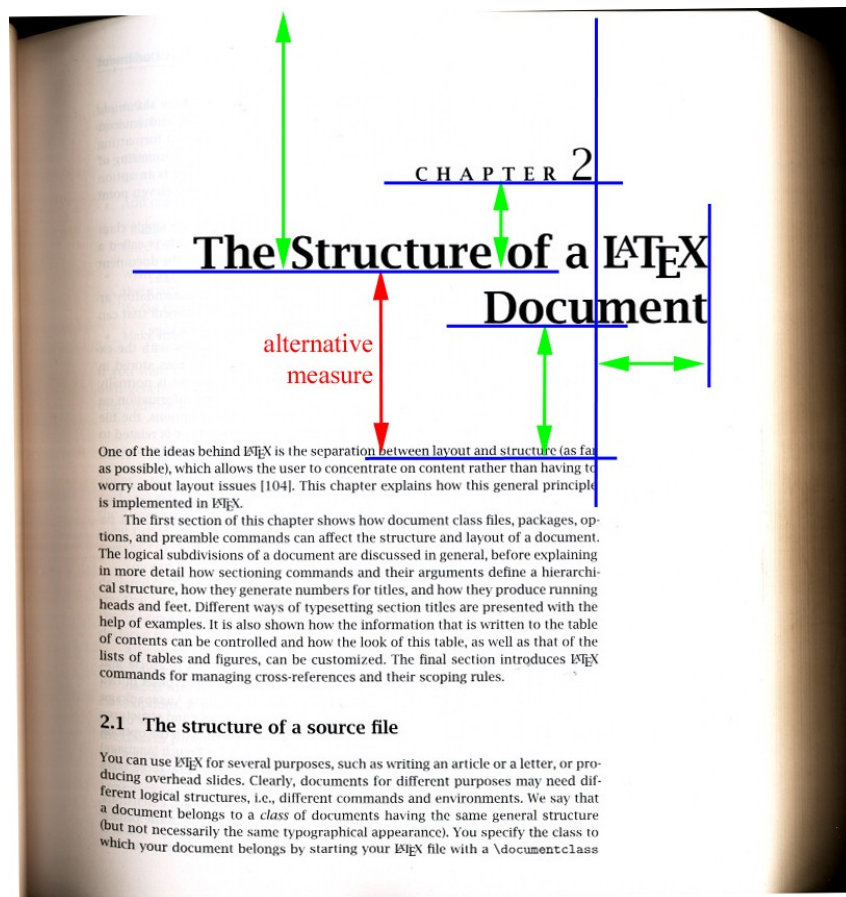
Chapter opening from TLC2



A title page from some book

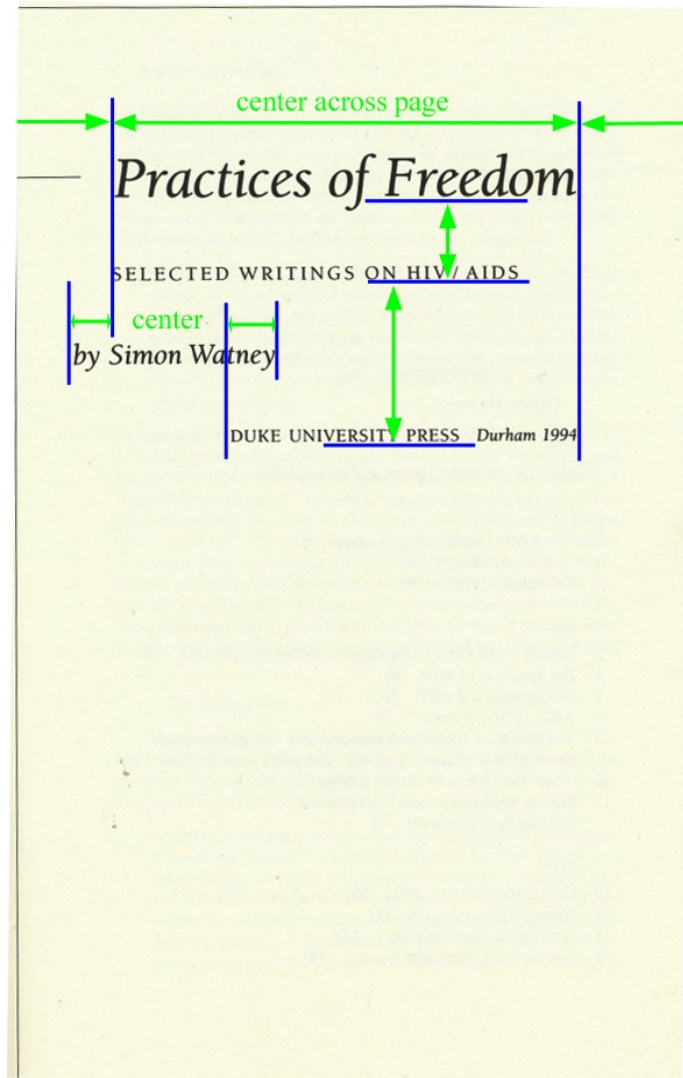


... or perhaps not so simple after all



- Distances specified as baseline to baseline spacing
- Main title text is shifted to the right
- Chapter text may be required to be always in the same place (red)

... and so much for the unsuspecting title



- The title is centered on the page
- The sub-title is flush-left on the title
- The publisher information is set flush-right
- The author name is centered on the free space between left edge of the title and left edge of the press info
- And again some vertical b2b spacing between the objects

And what about this?

The image shows the front cover of a book titled 'THE CUBIST POETS IN PARIS'. The title is printed in a bold, black, sans-serif font, with 'THE CUBIST' on the top line, 'POETS' on the right side, and 'IN PARIS' on the bottom line. To the left of the title, the words 'AN ANTHOLOGY' are printed vertically. At the bottom, it says 'EDITED BY L. C. BREUNIG'. In the center, there is a circular logo for the 'University of Nebraska Press, Lincoln and London'. The book is shown at a slight angle, revealing its yellowish-gold spine on the right side.

**THE CUBIST
POETS
IN PARIS**

AN ANTHOLOGY

EDITED BY L. C. BREUNIG

University of Nebraska
Press, Lincoln and London

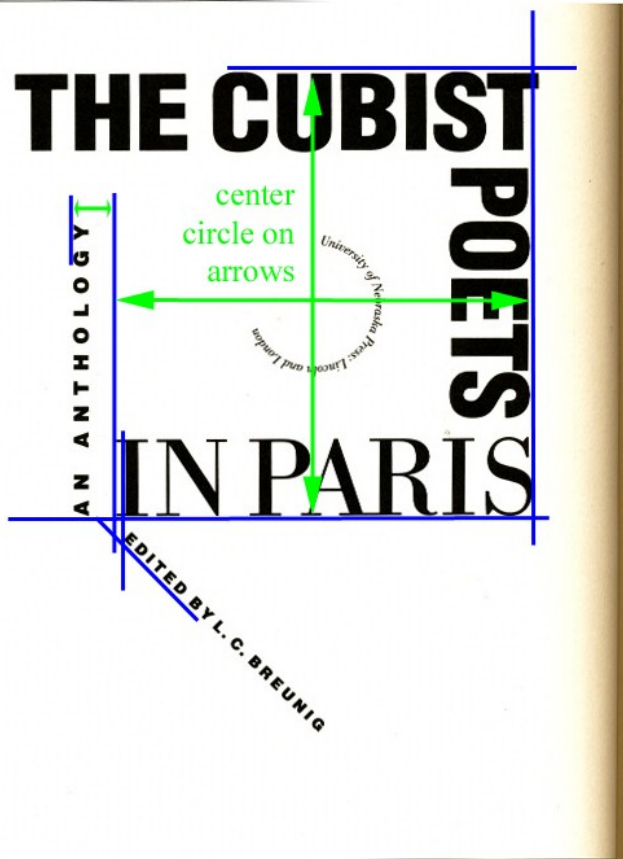
Not quite mainstream,
true ...

- but how would you describe its design?

And ...

- would that be in any way related to the way you would specify it in LaTeX?

A „natural“ design description...



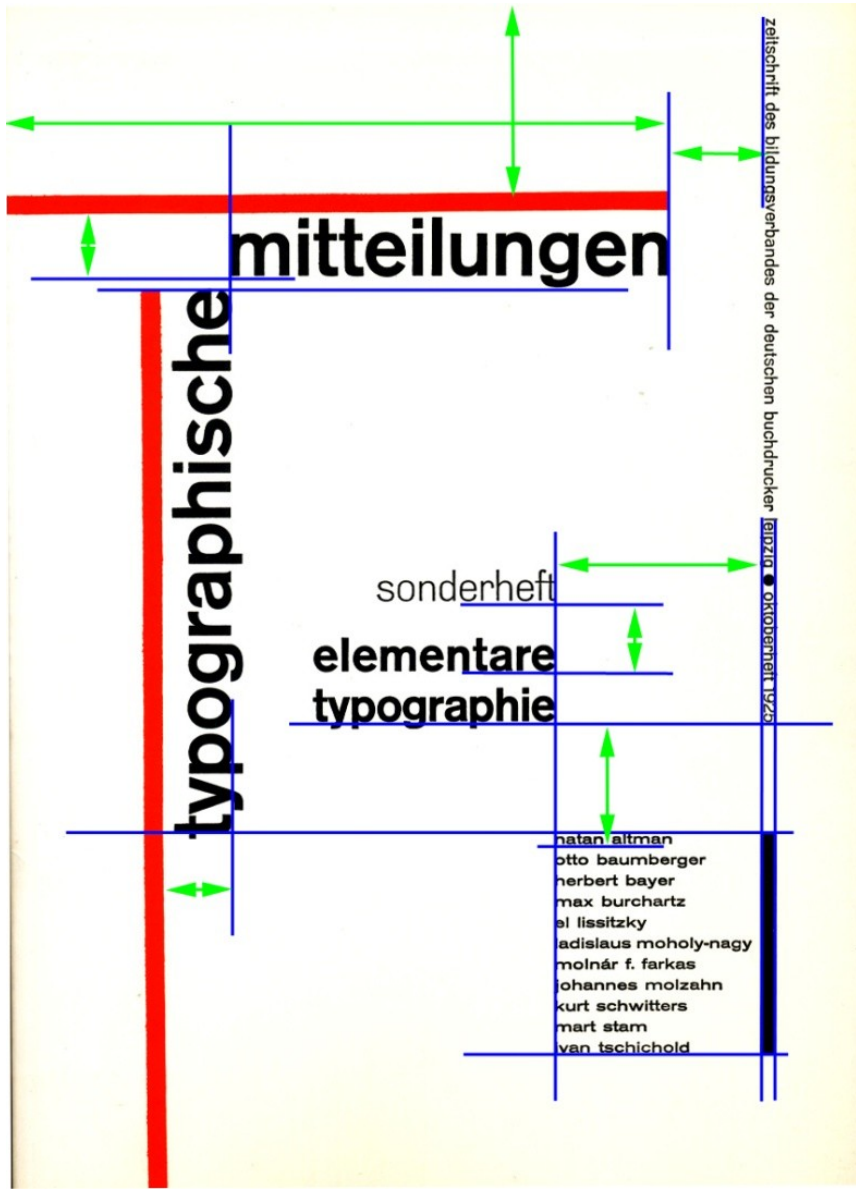
- involves relations between objects
 - that are easy to describe
 - use naturally available aspects of objects
- does not force the use of hard-wired metric information where unnecessary

elementare typographie 1925



- Design by Jan Tschichold
- Complex horizontal and vertical alignments between various elements
- How would you describe this layout to somebody?

Graphically depicting the design



- well ...

And what has this to do with coffins?



Some history

sometimes it takes long to realize ...

- A stroll through the English countryside, in 1997 perhaps, discussing the need for general handles on boxes
- As a result coffins were born and implemented and put aside again (in a mausoleum?)
- Last year I tried in vain to provide good templates for heading designs ... and then I remembered ...
- Now in 2010 coffins are back
 - exhumed, cleaned up
 - and ready for display



Coffin End

Private house off Market St in Thornton village

Poles and handles



Natural poles and handles

TeX's box handle

The first line ...
⋮
... more lines ...
⋮
... even more lines
⋮
and the last line. |

(H,l)

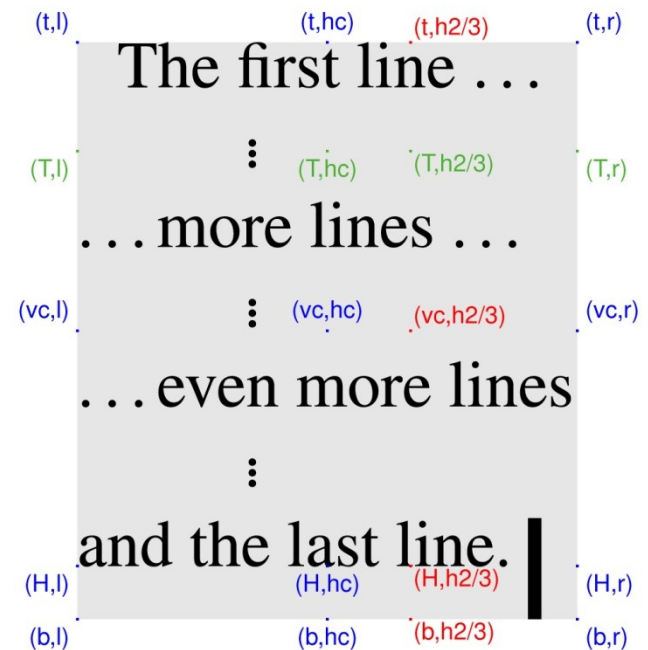
Default coffin handles

(t,l) (t,hc) (t,r)
The first line ... (T,l) (T,hc) (T,r)
⋮
... more lines ... (vc,l) (vc,hc) (vc,r)
⋮
... even more lines
⋮
and the last line. | (H,l) (H,hc) (H,r)
(b,l) (b,hc) (b,r)



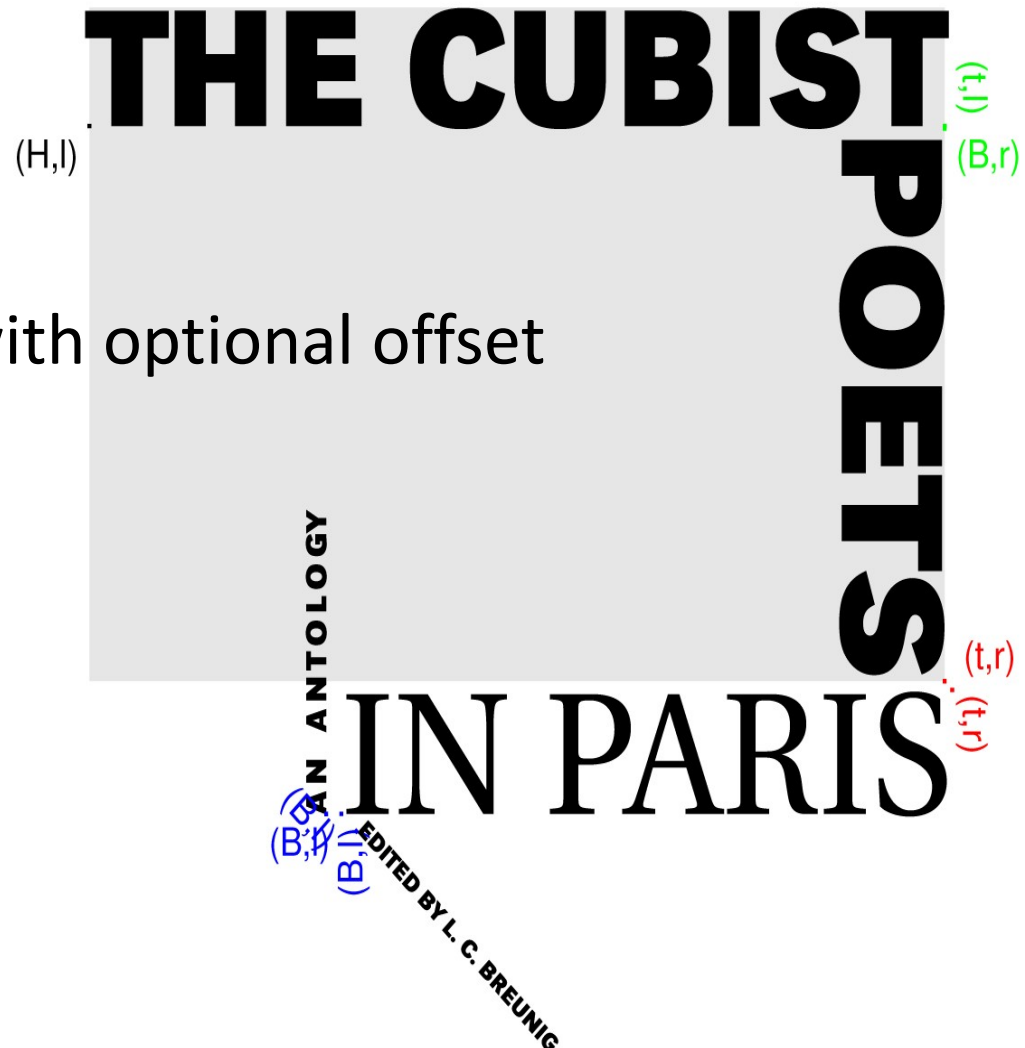
Available operations on individual coffins

- Declare new coffin
- Add poles (red)
- Reposition poles (green)
- Rotate coffin
- Typeset coffin with offset



Available operations with several coffins

- Align at handles with optional offset
- Manage resulting
BB-box



Applying coffins:

Recreate elementare typographie

- Rules

```
\sbox \rulei {\color{red}\rule{6.5in}{1pc}}
\sbox \ruleii {\color{red}\rule{23.5cm}{1pc}}
\sbox \ruleiii{\color{black}\rule{1.52pt}{10pt}}
```

```
\setvcoffin \BOXd {140pt}
{\raggedright \fontsize{13}{14}\sffamily\bfseries
natan altman \ otto baumberger \ herbert mayer \
max burchartz \ el lissitzky \ladislaus moholy-nagy \
moln\ar f.~farkas \ johannes molzahn \
kurt schwitters \ mart stam \ ivan tschichold}
```

- H-Coffins

```
\sbox \BOXa {\fontsize{52}{50}\sffamily\bfseries
mitteilungen}
\sbox \BOXb {\fontsize{52}{50}\sffamily\bfseries
typographische}
\sbox \BOXc {\fontsize{12}{10}\sffamily\quad
zeitschrift des bildungsverbandes der
deutschen buchdrucker leipzig \textbullet{ }
oktoberheft 1925}
\sbox \BOXf {\fontsize{28}{20}\sffamily sonderheft}
```

- V-Coffins

```
\setvcoffin \BOXe {80pt}
{\raggedleft\fontsize{31}{36}\sffamily\bfseries
elementare\
typographie}
```



mitteilungen
typographische

zeitschrift des bildungsverbandes der deutschen buchdrucker leipzig • oktoberheft 1925

sonderheft

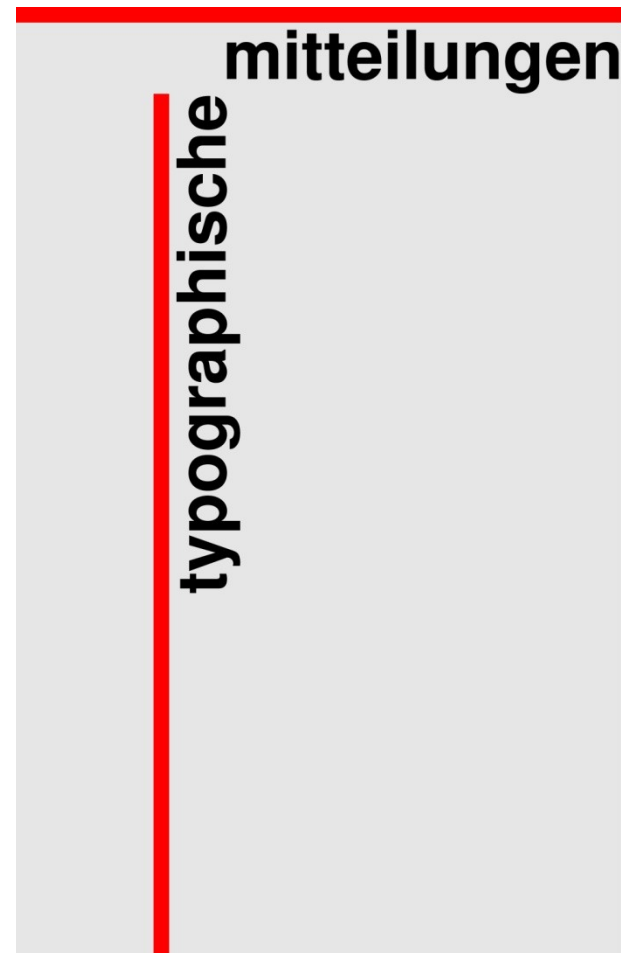
natan altman
otto baumberger
herbert mayer
max burchartz
el lissitzky
ladislaus moholy-nagy
molnár f. farkas
johannes molzahn
kurt schwitters
mart stam
ivan tschichold

elementare
typographie

Applying coffins:

Recreate elementare typographie 2

```
\sbox \result {}  
\aligncoffins \result \BOXa  
  
%syntax  
\aligncoffins *result <BOXa> \BOXa-r  
  <box?> [<handle?> ](<offset>)  
  
%join typographische  
\rotatecoffin \BOXb{90}  
\aligncoffins \result[\BOXa-b,\BOXa-l]  
  \BOXb[B,r](2pt,0pt)  
  
% add rule  
\rotatecoffin \ruleii {90}  
\aligncoffins \result[\BOXb-t,\BOXb-r]  
  \ruleii[b,r](-2mm,0pt)
```



Applying coffins:

Recreate elementare typographie 3

% add vertical text on the right

```
\rotatecoffin \BOXc {270}  
\aligncoffins \result [\BOXa-B,\BOXa-r]  
                \BOXc [B,l](66pt,14pc)
```

% align „authors“ on two poles

```
\aligncoffins \result [\BOXb-l,\BOXc-B]  
                \BOXd [t,r](-2mm,0pt)
```

% show the handle defined by the poles

```
\displaycoffinhandle \result {\BOXb-l}{\BOXc-B} {blue}
```



Applying coffins:

Recreate elementare typographie 4

```
% add black rule
```

```
\rotatecoffin \ruleiii {90}
```

```
\aligncoffins \result [\BOXd-b,\BOXd-r]  
  \ruleiii [t,l](2mm,0pt)
```

```
% add main title (again using two poles from  
%   different boxes and bb-spacing)
```

```
\aligncoffins \result [\BOXc-r,\BOXd-l]  
  \BOXe [B,r]
```

```
\displaycoffinhandle \result {\BOXc-r}{\BOXd-l} {blue}
```

```
% add word „sonderheft“ (bb-spacing)
```

```
\aligncoffins \result [\BOXe-T,\BOXe-r]  
  \BOXf [B,r](0pt,4pc)
```



... and why is this exciting?

- It allows to describe the placement of objects in relation to each other
- It enables parameterising designs in a natural way combining
 - object relations
 - absolute positions



What next ...

- Extend functionality
 - add support for ornaments and rules
 - support „glue“ in offset specification (?!)
- Decide final syntax – change name 😊?
- Apply in templates for
 - headings,
 - TOC entries,
 - floats, and page design



“No app
English-lang
pointles
baggage t

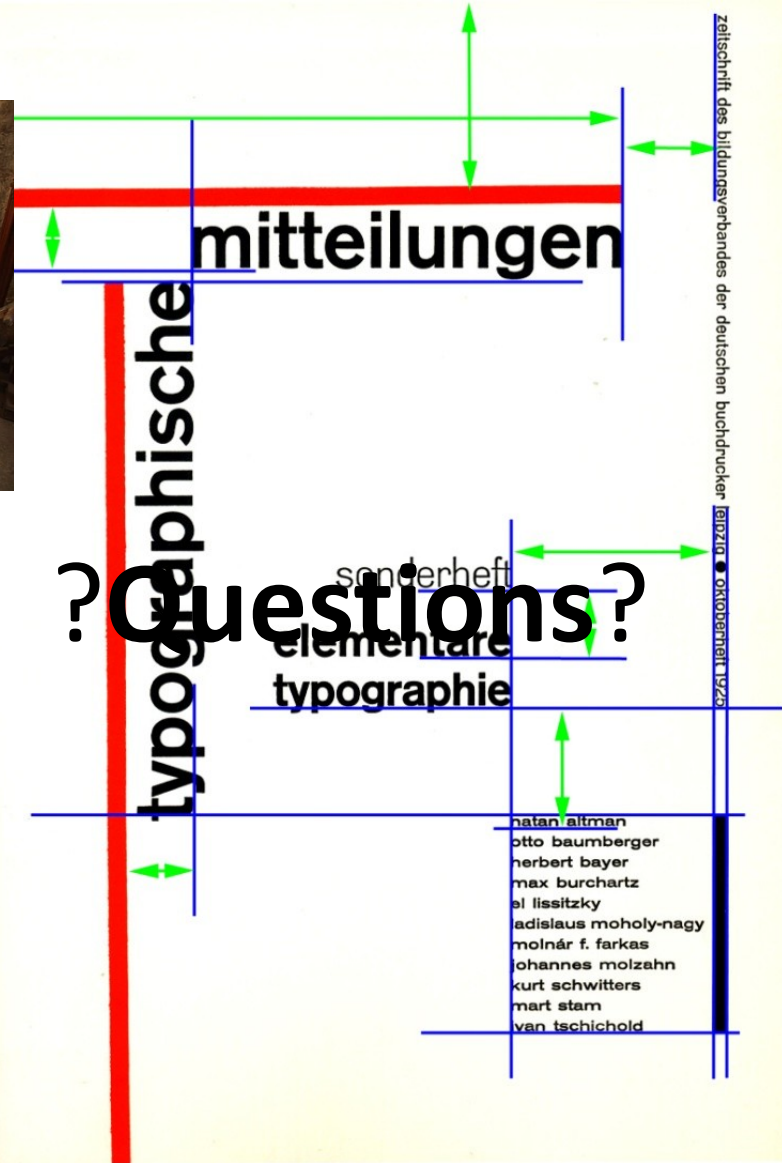
**THE CUBIST
POETS
IN PARIS**

AN ANTHOLOGY

center
circle on
arrows

University of
London Press, London and
London

EDITED BY L. C. BREUNG



...day that (TEXT) BOXES were
...e will tell whether or not this was a
fundamental error!”