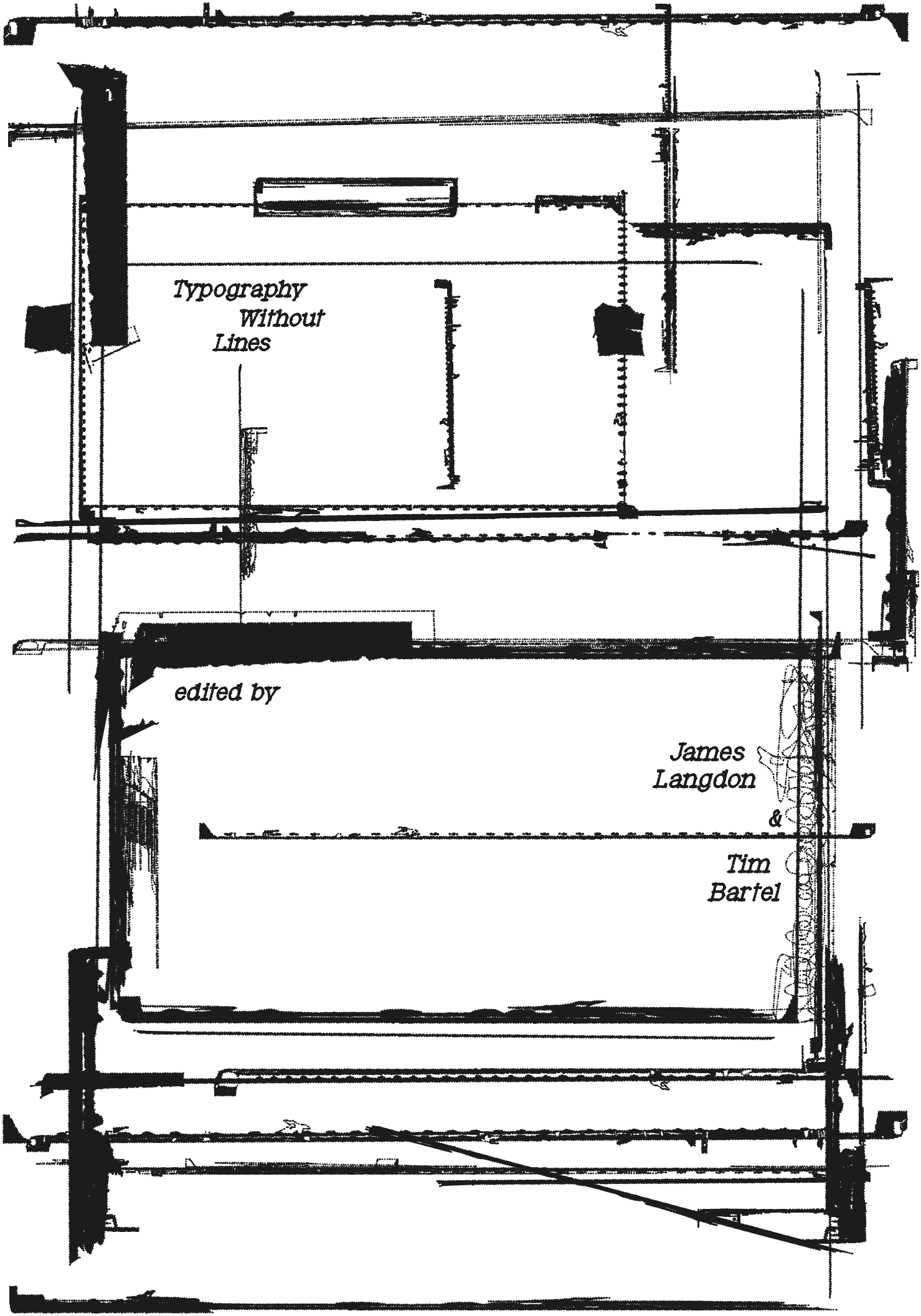

Typography
Without
Lines
edited by
James
Langdon
&
Tim
Bartel

This publication contains

19 (*numbered*) **typographic objects* — text quotations that maintain the typographic arrangement of their original layouts.*

We understand Johannes Gutenberg's invention of the printing press in Europe, in the mid-fifteenth century, as the inception of a radical, epoch-making technology. But Gutenberg only became *Gutenberg* approximately 250 years later. In terms of its graphic production, and not its historical consequence, the beginnings of printing in Europe were conservative. Gutenberg's printing press was a machine for making books. Obviously. But in transforming the production of books, Gutenberg did nothing to challenge the conventions of their form. Gutenberg's books maintained continuity with the books of the scribes: from their codex format, to their mise-en-livre, right down to the most elementary proposition of visible language: their presentation of words in lines.

Gutenberg took the skilled, concentrated performance of writing lines of text by hand — informed as it was by centuries of practice — and reimplemented it in wood and metal hardware. There were slight, but telling, graphic innovations on Gutenberg's pages. The typography is 'justified', meaning every line of text extends to the full width of the column, and hyphens are used to assist the reader in identifying words that had to be split and carried onto the next line to achieve an exact fit. This was a new way of constructing the page, with modular, movable, elements whose optimal position could be determined by making micro-adjustments in spacing before a mark was made on the paper. Text could now be planned — *designed* — with an anticipatory overview of the space it was to occupy. With this move Gutenberg confirmed the ascendancy of the page as a site for economising. We know Gutenberg as the heroic protagonist of typography, but he might actually have hindered its development, by creating the economy of mainstream publishing and confining typographic experiment to its fringes.

If Reality does not run along the neat straight lines of the printed page.

(1)

why

do we persist in reading text in long, thin lines of type? Why do those lines end arbitrarily, when no more words fit in the given space, and not deliberately, in service of the rhythm and meaning of the text? What is reading even, if not the action of moving one's eyes along a line of words in order to comprehend their meaning? The answers to these question are not as self-evident as they might seem. They are entangled in centuries of writing and reading practices.

Practices of organising language on surfaces that became conventions, understood and habitually expected by readers. *Conventions* that later informed the technics of a paradigm shift from writing to typography. *Technics* whose incredible industrial proliferation continues to define the presentation of language in contemporary digital contexts, where the material constraints of the printed page should be irrelevant.

lines:

The economy of straight lines in agriculture became evident when the plough displaced the mattock; the value of straight lines in warfare became evident when the tactics of locked shields and short stabbing-swords displaced individual target and broad-sword fighting, and when straight military roads, radiating from the national capital, made it possible to defend threatened points of the frontier at speed and in considerable force. Admittedly, straight ploughing has since proved a curse to agriculture by its creation of dust bowls; and linear military thinking has proved a curse when countered by the nonlinear tactics of infiltration; also, the ordering of people and things on linear principles has made for a deal of unnecessary human misery.

(2)

economical

(3)

As the metaphor of the text indicates, the straight lines of the ruled manuscript, which guided the writer's hand in weaving the letter-line, can be traced back to the parallel warp-threads of the loom. The threads were straight because they were taut. Leila Avrin describes how Hebrew scribes in the medieval Near East created ruled lines on parchment through the use of a frame, called a masara, on which parallel cords were strung tight as on a miniature loom. The frame was placed under the sheet to be ruled. All the scribe had to do was to press down the parchment with his finger on to the cord beneath it, whereupon the thread would show up as a crease on the surface which he could then use to guide his writing.

enduring

Changes occurred in the function and place of writing within the social order in the centuries following the decline of the Roman Empire. The activity of writing shifted emphasis — from the carving of monumental inscriptions, writing of classical poetry, and recording of legal and historical texts — to the copying of religious and classical texts within the province of religious communities. These transformations had been preceded by certain technical changes: vellum replaced papyrus as a material support for writing and the codex (sheets bound into books) replaced the scroll. The monumental capitals which had been produced for and in stone inscriptions were replaced by graphic forms originating from the use of the pen, rather than the chisel, stylus or brush. Finally, the division of elements within the text came to be visually marked so that titles, beginnings, endings, and commentaries came to be organized spatially and indicated by distinctions of size and design to a far more complex and nuanced degree than was practical within monumental inscriptions.



(4)

incumbent

lines:

(5)

Of course, narrative has to do with the temporal sequence of events, and thus in all narrative there is some kind of story line. As the result of a sequence of events, the situation at the end is subsequent to what it was at the beginning. Nevertheless, memory, as it guides the oral poet, often has little to do with strict linear presentation of events in temporal sequence. The poet will get caught up with the description of the hero's shield and completely lose the narrative track. In our typographic and electronic culture, we find ourselves today delighted by exact correspondence between the linear order of elements in discourse and the referential order, the chronological order in the world to which the discourse refers. We like sequence in verbal reports to parallel exactly what we experience or can arrange to experience. When today narrative abandons or distorts this parallelism, as in Robbe-Grillet's Marienbad or Julio Cortázar's Rayuela, the effect is clearly self-conscious: one is aware of the absence of the normally expected parallelism.

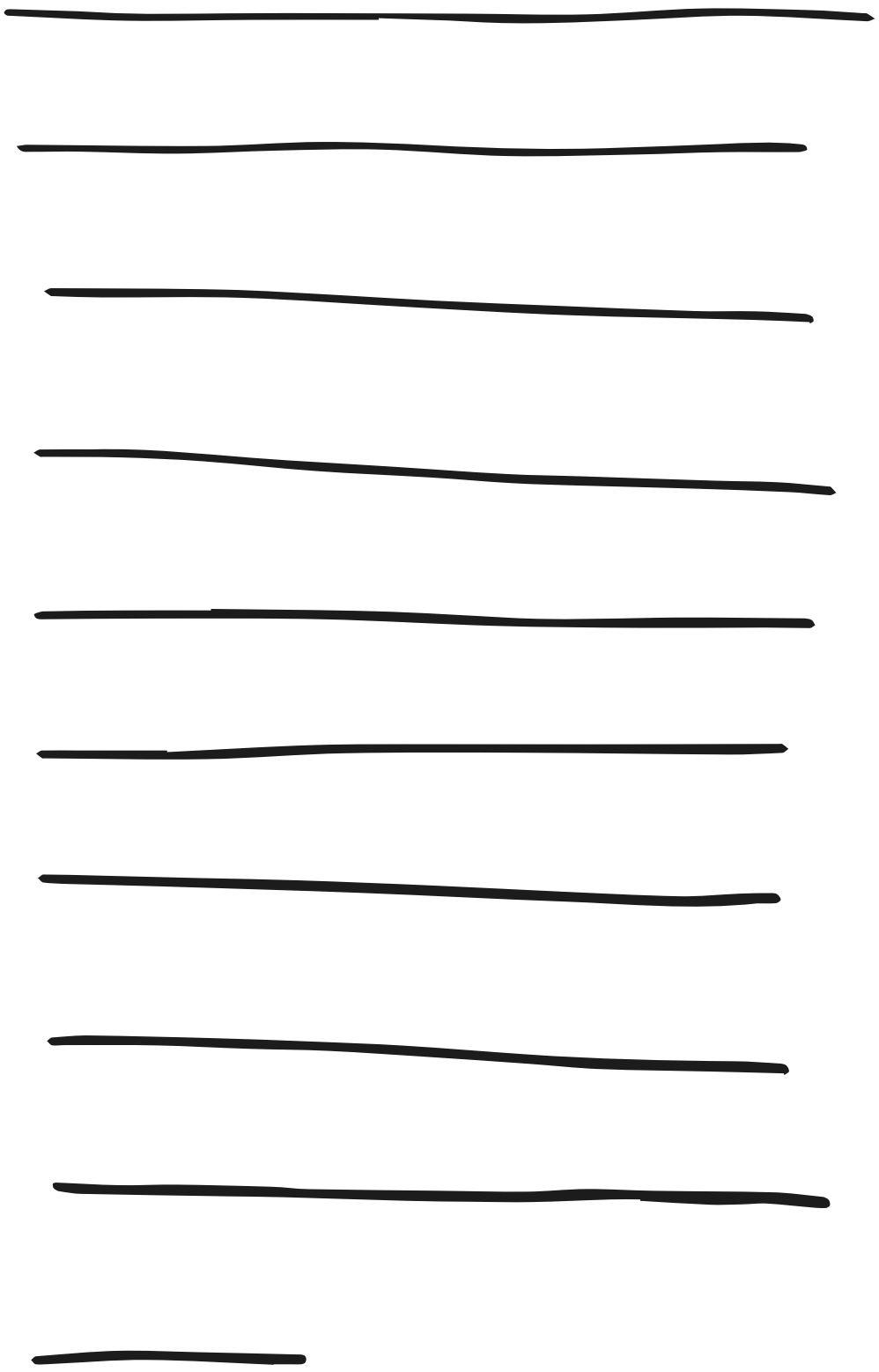
narrate

Writing thus tends toward the constriction of images, toward a stricter linearization of symbols. For classical as well as modern thinking, the alphabet is more than just a means of committing to memory the progressive acquisitions of the human mind; it is a tool whereby a mental symbol can be noted in both word and gesture by a single process. Such unification of the process of expression entails the subordination of graphism to spoken language. It avoids the wastefulness of symbols that is still characteristic of Chinese writing, and it parallels the process adopted by technics over the course of its development.

However, it also entails an impoverishment of the means of nonrational expression. If we take the view that the course humankind has followed thus far is wholly favorable to our future—if, in other words, we have complete confidence in settled agriculture and all its consequences—then we should not view the loss of multidimensional symbolic thought otherwise than we do the improvement achieved in the running ability of Equidae consequent upon the reduction of the number of their digits to one. But if, conversely, we tend to believe that human potentiality would be more fully realized if we achieved a balanced contact with the whole of reality, then we may ask ourselves whether the adoption of a regimented form of writing that opened the way to the unrestrained development of technical utilitarianism was not a step well short of the optimum.

(6)

constrict



Taking
space

and
wasting it

(8)

16

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structure

line

There is an obscure twentieth century history of undermining the typographic line. Or, at least, a history of tempering it with a concern for the intelligent — not arbitrary — arrangement of words.

(9) phrase

This is not intended to be
free verse.
Writing each phrase on a separate line
facilitates rapid reading,
and everyone
is in a hurry
nowadays.

Journal of Applied Psychology

Vol. 35, No. 4 August, 1951

Reading Speed and Comprehension as a Function of Typography

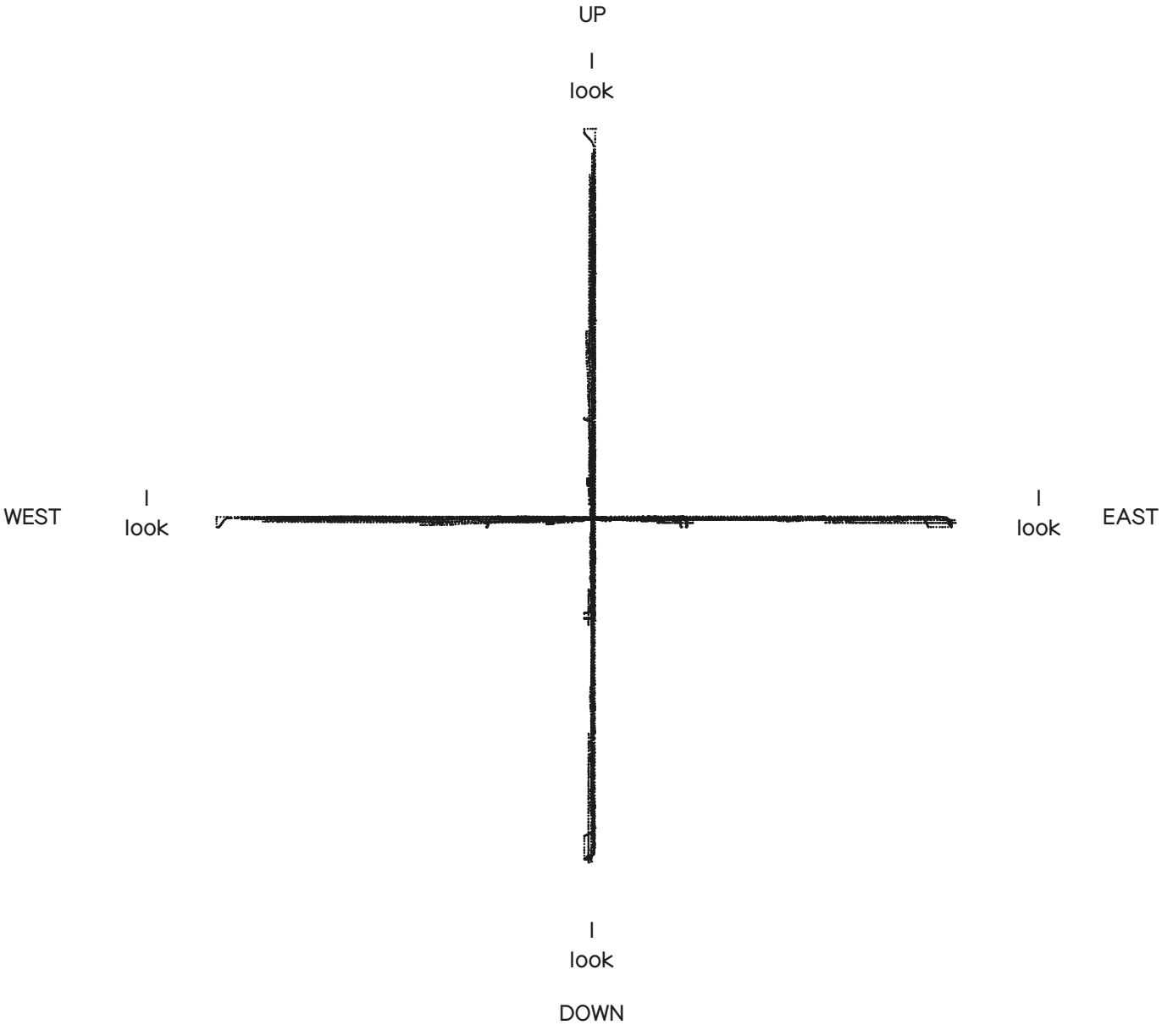
Alvin J. North and L. B. Jenkins

Southern Methodist University

This is an example of the square span style of presentation

This is an example of the spaced unit style of presentation

(10) [unit]


UP
I
look
WEST
I
look
I
look
EAST
I
look
DOWN

(11)

Heigh
my large flowing mane
three powerful coarse and
solid-hoofed long tail
domesticated mammals with

shape

(12)

Relation of space ^{3} to hyperspace ^{4}

representation
in the hyperspace ^{4}

A plane cuts a space ^{3} along a (straight) line
= i.e. every line of space ^{3} is the or more
possible
section (visible to the eye ^{3}) of one planes
coming from the hyperspace.

sense

The industrialisation of the typographic line created print culture's mainstream economics. The legacy of Gutenberg's hardware has subjected readers to five centuries of pages densely-packed with lines that break at arbitrary points. The sense-making function of typography has been made subservient to economy: the most number of words, at their smallest readable size, simply *must* be unloaded onto the scarce graphic space of the page. Every reader is so accustomed to the conventions of the economical page that they wouldn't even question why the words *Gutenberg's* and *hardware*, above, are positioned at the extreme edges of *this* column of type. That's right, this discontinuity just happened, on the very page that you are reading. *Gutenebrg's hardware*: for the purposes of this argument these two words are one typographic object, one unit of meaning. Their uncoupling is quite typical of the arbitrary violence of linear typography.

During these barren centuries of typographic inertia, this *age of a billion bad line breaks*, a small number of minor affordances emerged that betrayed the shortcomings of linear typography by introducing adaptations — workarounds — to smooth over the most absurd of its irrational discontinuities. Graphic designers have, for instance, been trained to remain alert to the occurrence of *widows* and *orphans*. These two forbidden, familial abandonments of the page are absolutely to be avoided by any self-respecting typesetter. But the insistence on these corrective measures is quite perverse! Is not every page of linear typography a relentless sequence of widows and orphans? Why should the last example in a given paragraph be treated any differently? In the twentieth century, to resist the linear was to go up against the capital imperative of the economical page, to be against the logic of the machine, to wilfully waste graphic labour in pursuit of inessential and esoteric typographic syntax.

hardware

The computerisation of typography is absolute. The computer makes typography *easy*. The computer creates a surplus of graphic labour. Typesetting a page of text once took hours, but now it might take mere moments. Some typographers spend this surplus on experimentation, and the computer permits — tolerates — that. But the computer, like the printing press, is *optimised* for economy. The most ultimately perfect page of letterpress typography is, only now, finally manifested by the computer.

perfectly

Am Anfang stand ein überwachsenes	long line
und vermoostes Loch, inmitten des	short line
Waldes am Eingang zum Val d'Uina im	long line
Unterengadin. Auf einem Morgenspa-	short line
ziergang machte mich Joannes Wetzel,	long line
der Maurer, Steinmetz und Kalkspe-	short line
zialist, auf diese geheimnisvolle Erschei-	long line
nung im Wald zwischen Strasse und	short line
Fluss aufmerksam. Er führte mich an	long line
eine Stelle im Dickicht, die - für den	short line
Laien kaum erkennbar - Geschichten	long line
über frühe baukulturelle Entwick-	short line
lungen im Tal zu erzählen schien. «Da-	long line
rin verbirgt sich ein alter Kalkofen»,	short line
sagte Joannes und fügte hinzu: «Können	long line
wir den Ofen wiederaufbauen und	short line
in Betrieb nehmen?» Fasziniert von	long line
dem geheimnisvollen Fund und	short line
ohne lange zu überlegen, antwortete	long line
ich: «Ja, das machen wir.»	short line
Die Engadiner Kulturstiftung	long line
Fundaziun Nairs hat in der Folge das	short line
Projekt «Kalkofen» lanciert. Die Reste	long line
des ehemals funktionsfähigen Kalk-	short line
ofens in Sur En da Sent wurden frei-	long line
gelegt, rekonstruiert und wieder in	short line
Betrieb genommen. Die Sanierung und	long line
ein erster erfolgreicher Kalkbrand	short line
sind im Herbst 2017 unter der fachkun-	long line
digen Leitung von Joannes Wetzel	short line
mit unzähligen freiwilligen Helferin-	long line
nen und Helfern realisiert worden.	short line
Dabei wurden 5 Tonnen Brandkalk ge-	long line
wonnen. Dieser wird an Kalk-Work-	short line
shops mit Schwergewicht auf Mörtel-	long line
herstellung, Putztechniken und	short line
Sgraffito-Technik sowie bei denkmal-	long line
pflegerischen Gebäudesanierungen	short line
verarbeitet. Die Kalkproduktion im	long line
historischen Ofen gibt uns die ein-	short line
malige Chance, das Wissen rund um	long line
den Kalk anschaulich und erlebnis-	short line
reich zu vermitteln - von der natürli-	long line
chen Ressource über die Eigenschaf-	short line
ten des Kalks in den verschiedenen Sta-	long line
dien seiner Transformation bis hin	short line
zu seiner Verwendung am Bau.	long line
Der Kalk besass in früheren	short line
Zeiten eine zentrale Bedeutung als	long line
Grundlage für die regional Baukultur.	short line

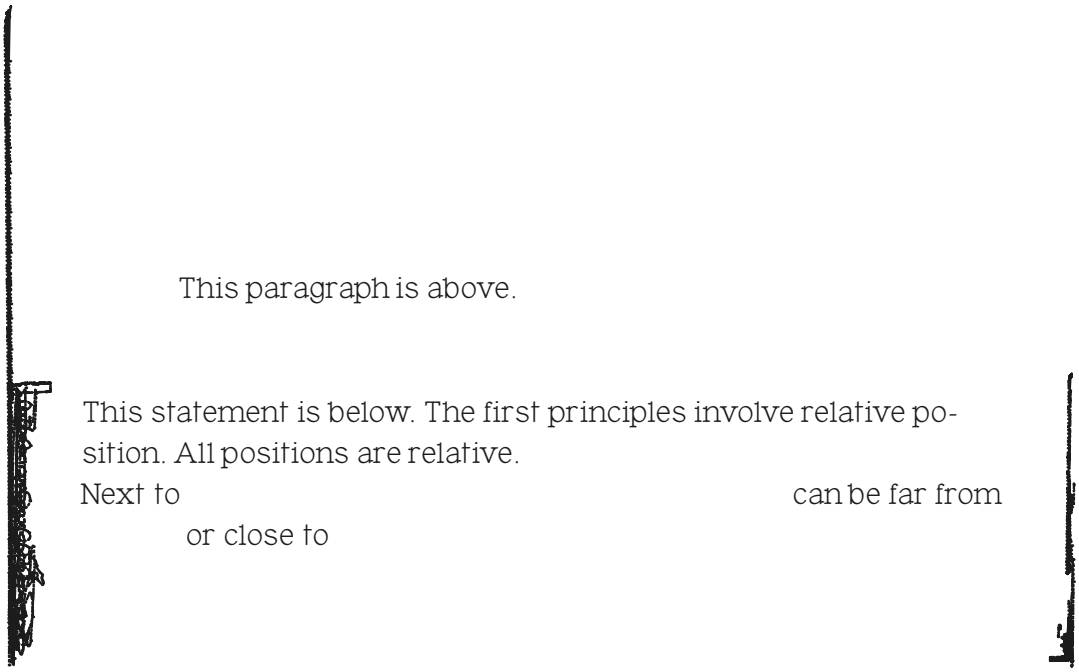
(13)

This paragraph is a thoroughly computerised object.
It inherits our five centuries of typographic traditions and practices,
distilled now into a set of software functions
for processing text collectively named the Adobe Paragraph Composer.
The superpower of these functions
is their ability to act on an entire text
as if it were a single typographic object.

The size, the word- and line- spacing, the modulation between technical attributes of a text running across hundreds of pages can be transformed with a single operation.

An entire sequence of related typographic operations can be automated and triggered simply by certain textual conditions being met within the document. By now the text typeface is far more than a simple digital representation of physical letterforms. It is itself a multi-functional and potentially autonomous piece of software.

(14)



This paragraph is above.

This statement is below. The first principles involve relative position. All positions are relative.

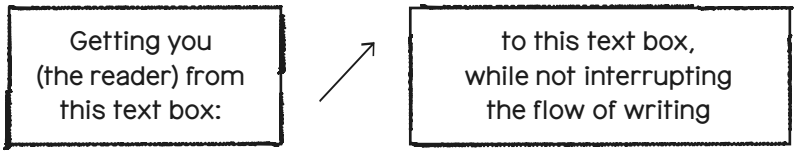
Next to can be far from or close to

MuTypography

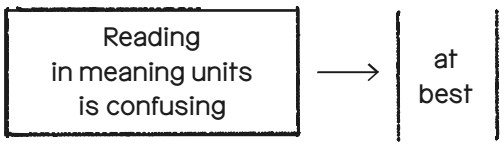
MuTypography is an invention
of the MuDoc corporation
in Tempe, Arizona, USA.
In MuTypography,
texts are presented
in Meaning Units,
small groups of words
that are spatially organised
according to the syntactical structure
of the text.

The Mudoc Corporation
Email: mudocman@gmail.com
Phone: 602-265-1864
FAX: 480-347-2701
Website: www.mudoc.com
Mail: 616 E Julie Dr, Tempe, AZ 85283-2914

Wayne Reed Porter,
the founder of MuDoc,
has spent almost 50 years
promoting MuTypography
to investors and
educational institutions,
but his work remains trapped
in a space of
technological untimeliness.
The computerisation of typography
makes Porter's vision
eminently achievable,
yet it remains outside the scope
of the canonical, *Gutenbergian*, page,
around which
digital typography is organised.


Getting you
(the reader) from
this text box:
to this text box,
while not interrupting
the flow of writing


Meaning
Unit
Meaning Unit


Reading
in meaning units
is confusing
at
best

By 2020 the elimination of the world's last pockets of illiteracy will be underway. Humankind will be rapidly transforming itself from its present partially literate condition into an era of universal literacy – and everyone will be being conscripted into the war against ignorance.

In the 15th century, the invention of movable metal type made possible an era of mass literacy and public education. In the 21st century, a new kind of movable type will propel the world into an age of superliteracy and high enlightenment. That new kind of movable type is a software invention, interactive movable type. This new type will make possible a new and different kind of relationship between readers and text. The constraints that are presently imposed on the readers of today's conventional text will not be there with text set in interactive movable type (see "How We Handicap Readers"). The opacity that conventional text now has for the illiterate individual will be gone. The words that are set in interactive movable type will be highly transparent. The words set in the interactive text will be supported by extensive reference substructures that will answer any question the reader may have about any word in the text. The data about the word in the substructure will include pronunciations, definitions, grammatical characteristics, etymology, and (when they exist) synonyms, antonyms, homophones, and homographs. To make a word fully comprehensible, the reader may be provided with examples of use, pictures, drawings, maps, charts, tables, voices, music, sound effects, computer graphic representations, video segments, and any other descriptive information about the word that may be available in the pertinent reference substructure (which, in a widely used language like English, will often contain the equivalent of millions of pages of explanatory reference materials). Another major change in the relationship between each reader and interactive text will be the reader's role in designing each publication before it is to be read.

With today's publications, readers have few choices in how a publication is to be presented to them. With today's publications, the publisher makes most or all of the design decisions. Thus, fixed, static "one size fits all" images are delivered to the reader who is able to make few changes in how the publication is presented. With text set in interactive movable type, the reader will have available an array of powerful, but easy to use, flexible display tools that will facilitate the apprehension and understanding of the publication's text elements. With publications set in interactive movable type, the reader will be able to function as the co-designer of each of the publications he or she is about to consume. Readers will have many choices when consuming the digital publications set in interactive movable type that are called mudocs. ("Mudoc" is a contraction of "meaning unit document" – and the interactive movable type software used to control each mudoc is usually called "the mudoc software".) When a mudoc is delivered to a reader, it will come with two sets of display specifications that are provided by the publisher. One set will be for displaying pages of static text. The

other set will be for displaying the document as a muvie. The reader will be able to change any of those specifications before reading – or after starting to read – the document. Most readers will have developed default sets of specs that satisfy their particular needs and desires. So, before starting to read,

the reader can choose to have the mudoc presented using the specs provided by the publisher – or they can proceed using the personal default specs they have developed for their own use. And, they can change any of those specs at any time.

Below are some of the choices that will be available to the reader when consuming a mudoc. Each reader can . . . 1. Have the text displayed in either the conventional linear typography – or in the mu typography in a one-line, two-line, three-line, four-line, or five-line mu format. 2. Specify the type

size, typeface, and the spacing specifications they desire. 3. Have the text presented either visually or aurally – or as synchotext (that is both visually and aurally at the same time). 4. Have text that is aurally presented delivered as compressed speech at any rate from one word to

900 words per minute. 5. Choose to have text that is presented aurally employ either of two methods of delivery. The first is to use the synthetic text-to-speech software that will be available with the mudoc software. Alternatively, the reader can choose the digitized speech recording that may

be provided with the mudoc. (Many of the documents offered as mudocs will include synchronized voice recordings that have been made by the author or a professional reader.) 6. Have the text presented either as pages of static displays or as muvies. 7. Have muvies delivered at any rate from one

muglyph (meaning unit) per second to 20 muglyphs per second. 8. Stop a muvie at any point and have a page of static text displayed with the stopped-on muglyph shown in the center of the page. 9. Stop a text presentation on any word and bring up any desired data about the word

from the mudoc reference substructure.

(16)

spine to neck
head turned forcefully to the right
mouth open
tongue
nose
wide cheeks
below eyes

in an upward stare
brows bent
forehead
round
becomes scalp
into lock of hair
falls through hand

onto left shoulder
upper arm exposed
mirrors chest
elbow pressing against waist
lower arm
traversing crotch

becomes left hand
resting
on upper right leg

(17)



by its lack of homophones
*homonyms
by its efficiency
by its euphony

and by the ease
with which most people will be able to learn it
The regular relationship

between the sounds
and
written symbols
will largely eliminate

the need for spelling training
Conversely the pronounciation
of
any written word



(18)

MEANING UNITS (SHORT MU) ARE TEXT BLOCKS

BREAKING LINEAR TEXT INTO SMALL CONTAINERS OF WORDS

CREATING CONTEXT AND NEW RELATIONSHIPS OF WORDS WITHIN CONTAINERS

AS WELL AS CONTAINERS WITHIN SENTENCES

CREATING BREAKS FOR CONTENT TO BREATHE AND TAKING A STEP BACK

FROM GETTING LOST IN LINEAR STORYTELLING

Two Gnomes sharing breakfast in silver forest

There's
cheese little even a tiny
bread red blanket

to sit maybe even
on rest.

Tiny resting
legs.

Cats could
mean anything

anything
means trouble

for little restless
minds.

Not a cat
in sight

this could
change anytime

anything
anytime

that's what
cats mean to little
minds

troubled by
anything

anything but
certainty.

A trickster draped in
spirit cat attire

enormous horns
behind cat ears

most cats dark toothed
are not grimace but

being here so long
I can't tell anymore

it's the mud
sight.

Two Gnomes sharing
breakfast in silver forest there are no cats in
this depth of the forest

so there may
be a little rest

for tiny resting
legs.

If (1) Sadie Plant 'Zeros + Ones' (1997)

(2) Robert Graves 'Comments on Lineal and Non-lineal Codifications' (1954)
economical

(3) Tim Ingold 'Lines' (2007)
enduring

(4) Johanna Drucker
'The Alphabetic Labyrinth' (1995)
incumbent

(5) Walter J. Ong 'Orality and Literacy, The Technologising of the Word' (1982)
narrate

(6) André Leroi-Gourhan
'Gesture and Speech' (1964)
constrict

(7) Masanao Hirayama 'Book (9222)' (2022)
take space

(8) Michael Twyman
'Typography Without Words' (1981)
structure

(9) Lillian Lieber
'The Education of T. C. MITS' (1942)
phrase

(10) Alvin J. North and L. B. Jenkins 'Reading Speed and Comprehension as a Function of Typography' (1951)
[unit]

(11) Stefan Themerson 'Bayamus' (1949)
shape

(12) Richard Hamilton's typotranslation of Marcel Duchamp 'The Green Book' (1960)
sense

(13)'Chalchera – Kalk in Transformation', designed and typeset by Kasper-Florio (2020)
perfectly

(14) Johanna Drucker
'Diagrammatic Writing' (2013)
space

(15) Wayne Reed Porter 'The End of Illiteracy' (1999) typeset automatically using an Adobe InDesign script developed by Timo Rychert for the seminar HfG Department for MuTypography
MuTypography

(16) Jesper List Thomsen 'Avoiding the Genius' (2017) re-typeset by James Langdon, preserving basic word grouping from the original
implied

(17) Wayne Reed Porter 'Languages of the Future' typeset by Neele Seidel, Sven Krahl, Tim Bartel for HfG Department for MuTypography Seminar Presentation (2020)
place

(18) Neele Seidel & Tim Bartel
'MuTypography Sticker for Short Stories Vol. I' (2021)
breaks

(19) Tim Bartel 'Short Stories Vol. I' (2023)
natural

Typography Without Lines
edited by James Langdon & Tim Bartel
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Historically morphing Metafont by Simon Knebl:
MF Reading Power 100
MF Reading Power 200
MF Reading Power 300
MF Reading Power 400
MF Reading Power 500
MF Reading Power 600
MF Reading Power 700
MF Reading Power 800
MF Reading Power Serif 300
MF Reading Power Serif 400
MF Reading Power Serif 500
MF Reading Power Rounded

MF Reading Power was created for MuTypography, with short g, p, q, j, y descenders to optimise readability in 'Meaning Units'

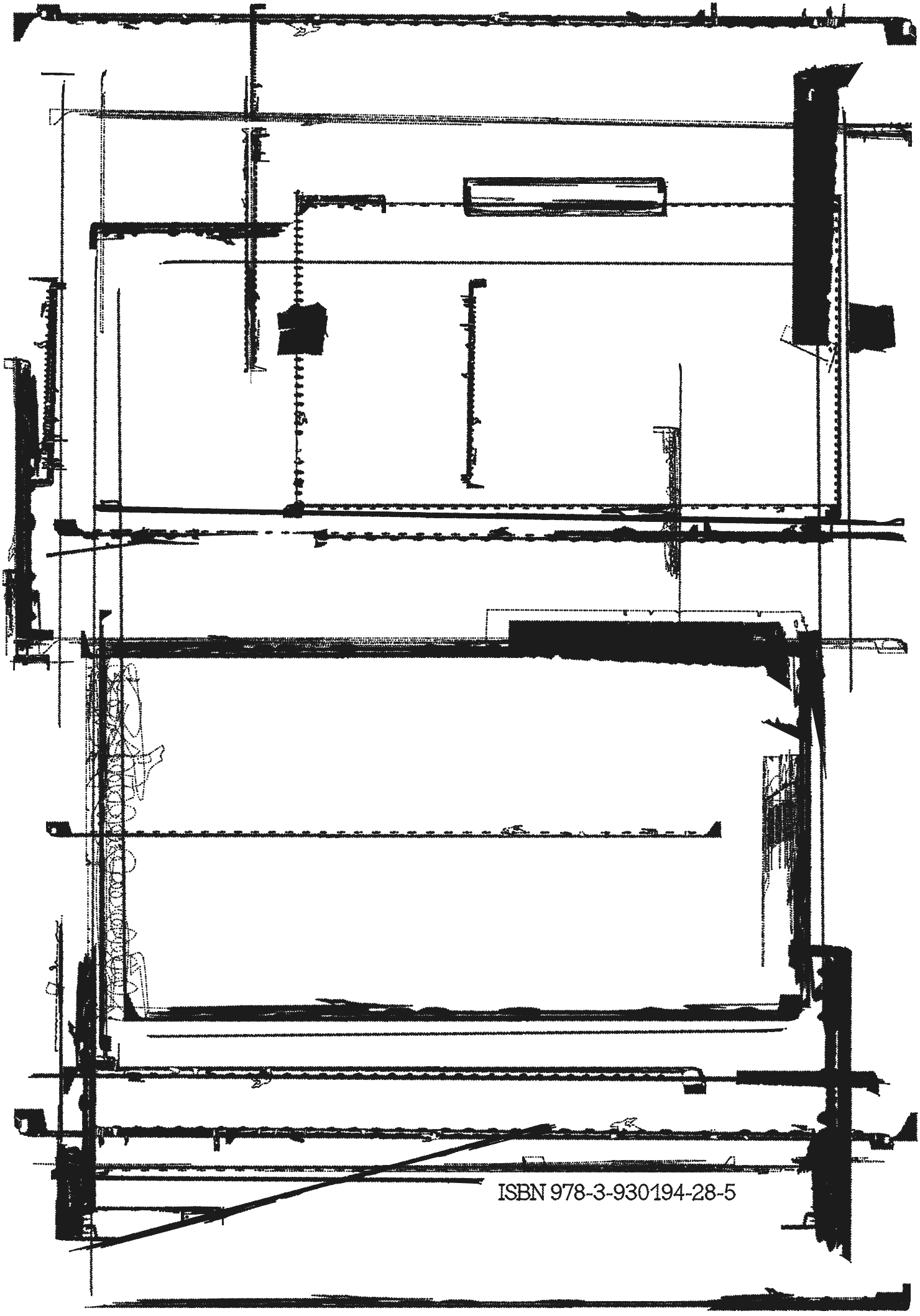
Graphic design by Tim Bartel (with additional help from Neele Seidel & James Langdon)

3D-models for spine clips made by Ben Hautmann (with additional help from Friederike Maier)

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