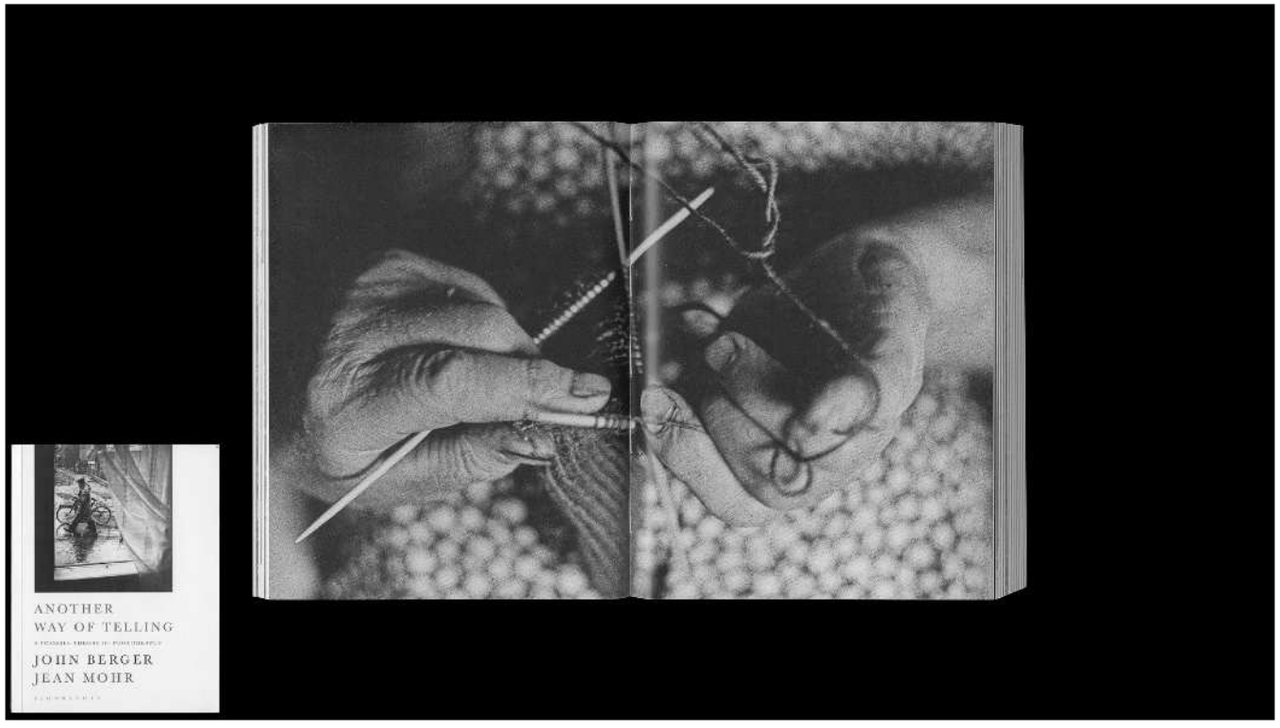
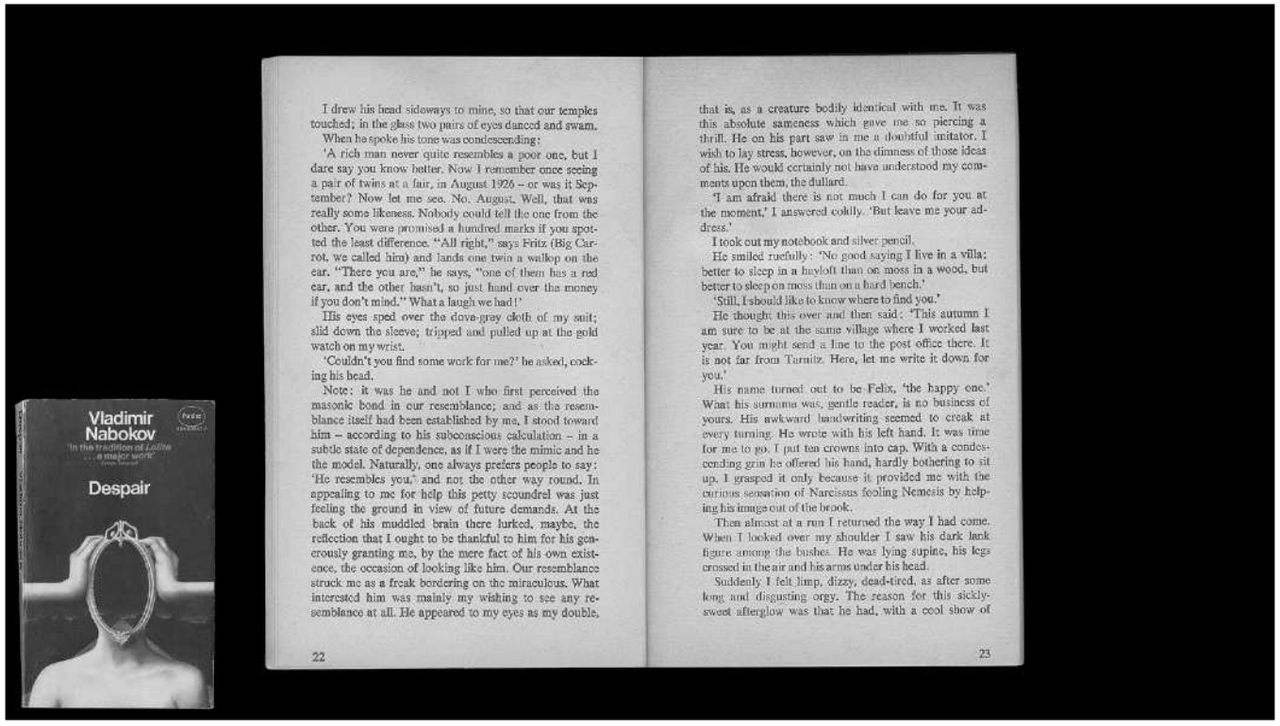


I want to talk about the binding of books. Not as a technical process but as a set of structural forces. I think the binding of every book exerts contrary forces on its content.



Binding enables content — various, messy, disorganised content — to be presented as a unified proposition, as a singular thing. This is how an editor regards binding. As the material embodiment of processes like compiling, relating, anthologising.



But I mean binding as the graphic designer understands it. I want to follow through what the Mexican artist and publisher Ulises Carrión meant when he wrote that books are the accidental containers of content.

I think this is what he meant. He would call this a novel where nothing happens. Page after page of sentences and paragraphs that never acknowledge that they are in a book. They just happen to be in a book. But they don’t *belong* there. Except sometimes they do, whether by accident, or design.

rot, we called him) and lands one twin a wallop on the ear. "There you are," he says, "one of them has a red ear, and the other hasn't, so just hand over the money if you don't mind." What a laugh we had!'

His eyes sped over the dove-grey cloth of my suit; slid down the sleeve; tripped and pulled up at the gold watch on my wrist.

'Couldn't you find some work for me?' he asked, cocking his head.

Note: it was he and not I who first perceived the masonic bond in our resemblance; and as the resemblance itself had been established by me, I stood toward him – according to his subconscious calculation – in a subtle state of dependence, as if I were the mimic and he the model. Naturally, one always prefers people to say: 'He resembles you,' and not the other way round. In appealing to me for help this petty scoundrel was just feeling the ground in view of future demands. At the back of his muddled brain there lurked, maybe, the reflection that I ought to be thankful to him for his generously granting me, by the mere fact of his own existence, the occasion of looking like him. Our resemblance struck me as a freak bordering on the miraculous. What interested him was mainly my wishing to see any resemblance at all. He appeared to my eyes as my double,

He smiled ruefully: 'No good saying
better to sleep in a hayloft than on mos
better to sleep on moss than on a hard ber
'Still, I should like to know where to fir
He thought this over and then said:
am sure to be at the same village whe
year. You might send a line to the po
is not far from Tarnitz. Here, let me v
you.'

His name turned out to be Felix,
What his surname was, gentle reader,
yours. His awkward handwriting seer
every turning. He wrote with his left h
for me to go. I put ten crowns into cap
cending grin he offered his hand, hardl
up. I grasped it only because it provi
curious sensation of Narcissus fooling
ing his image out of the brook.

Then almost at a run I returned the
When I looked over my shoulder I sa
figure among the bushes. He was lying
crossed in the air and his arms under his

Suddenly I felt limp, dizzy, dead-tir
long and disgusting orgy. The reason
sweet afterglow was that he had, with

I'll read from the chance encounter at the beginning of Nabokov's 'Despair':

'Naturally, one always prefers people to say: "He resembles you," and not the other way round. In appealing to me for help this petty scoundrel was just feeling the ground in view of future demands. At the back of his muddle brain there lurked, maybe, the reflection that I ought to be thankful to him for his generously granting me, by the mere fact of his own existence, the occasion of looking like him. Our resemblance struck me as a freak bordering on the miraculous. What interested me was mainly my wishing to see any resemblance at all. He appeared to my eyes as my double,

to mine, so that our temples
rs of eyes danced and swam.
s condescending:
resembles a poor one, but I
ow I remember once seeing
August 1926 – or was it Sep-
No. August. Well, that was
could tell the one from the
hundred marks if you spot-
right," says Fritz (Big Car-
ls one twin a wallop on the
ys, "one of them has a red
just hand over the money
ugh we had!'
love-grey cloth of my suit;
d and pulled up at the gold

ork for me?' he asked, cock-

t I who first perceived the
iblance; and as the resem-
ished by me, I stood toward
conscious calculation – in a
s if I were the mimic and he
ways prefers people to say:
ot the other way round. In

that is, as a creature bodily identical with me. It was this absolute sameness which gave me so piercing a thrill. He on his part saw in me a doubtful imitator. I wish to lay stress, however, on the dimness of those ideas of his. He would certainly not have understood my comments upon them, the dullard.

'I am afraid there is not much I can do for you at the moment,' I answered coldly. 'But leave me your address.'

I took out my notebook and silver pencil.

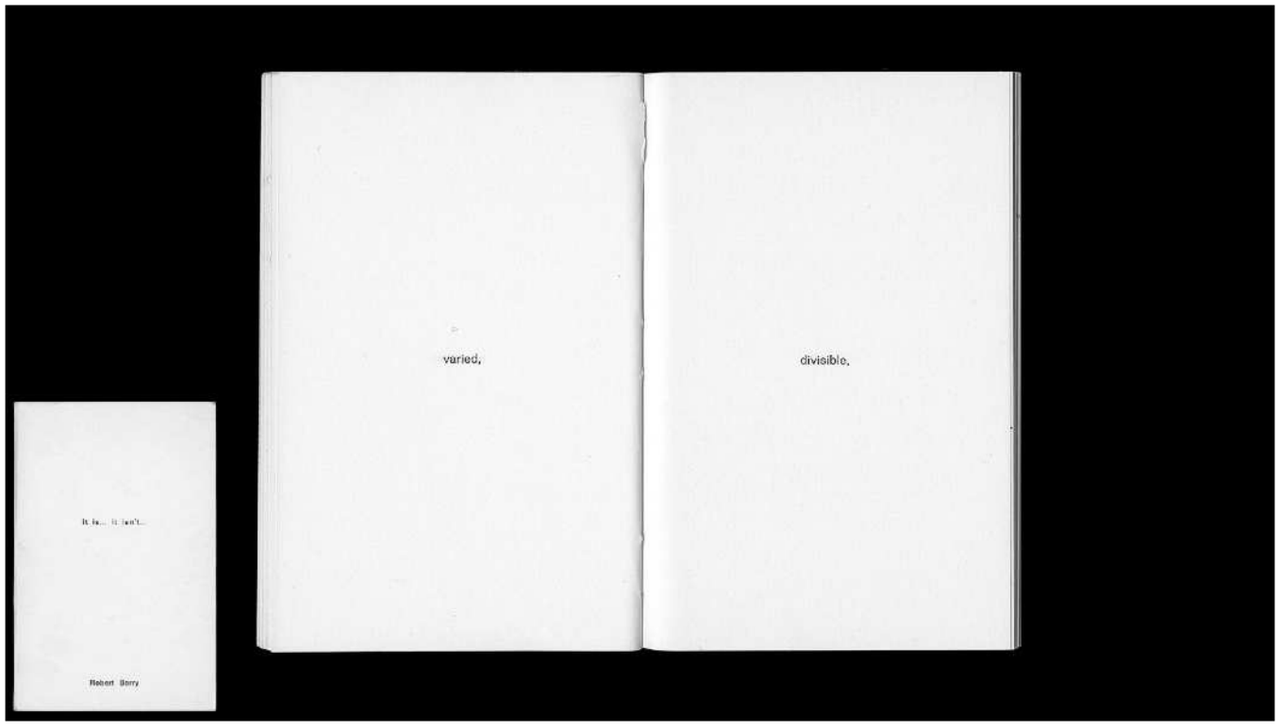
He smiled ruefully: 'No good saying I live in a villa; better to sleep in a hayloft than on moss in a wood, but better to sleep on moss than on a hard bench.'

'Still, I should like to know where to find you.'

He thought this over and then said: 'This autumn I am sure to be at the same village where I worked last year. You might send a line to the post office there. It is not far from Tarnitz. Here, let me write it down for you.'

His name turned out to be Felix, 'the happy one.' What his surname was, gentle reader, is no business of yours. His awkward handwriting seemed to creak at every turning. He wrote with his left hand. It was time for me to go. I put ten crowns into cap. With a condescending grin he offered his hand, hardly bothering to sit up. I grasped it only because it provided me with the

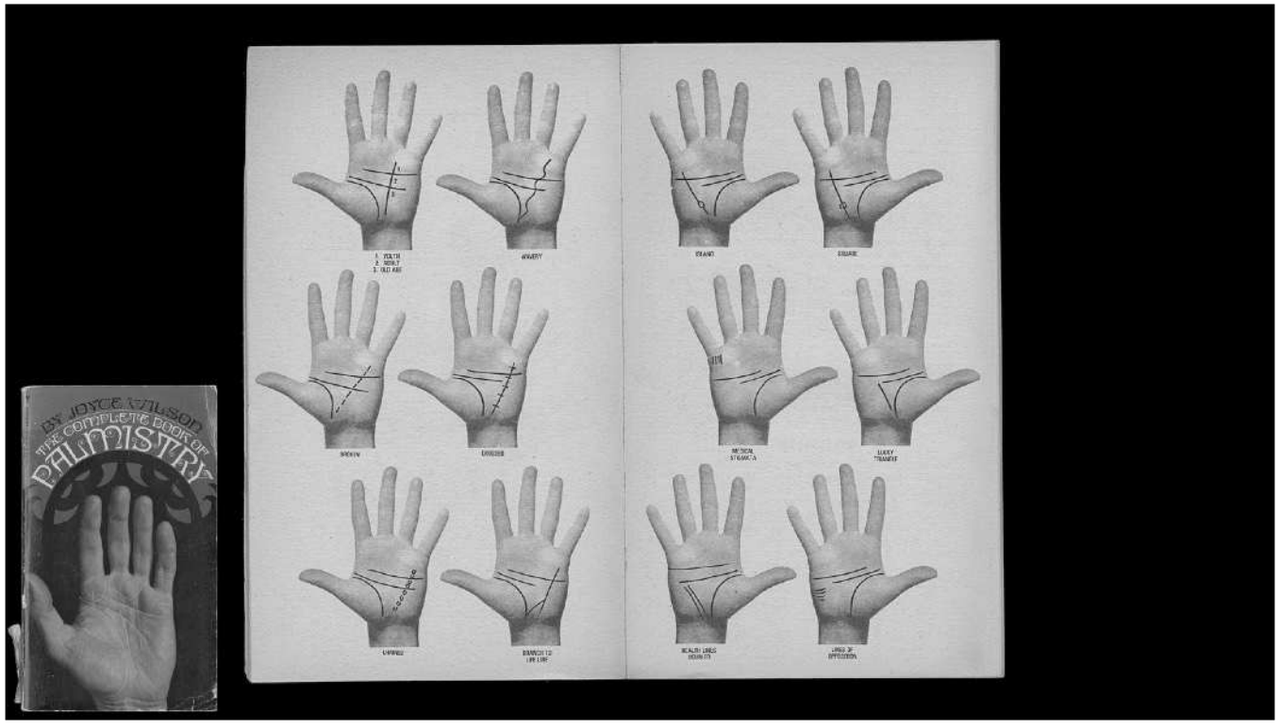
that is, a creature bodily identical with me. It was this absolute sameness which gave me so piercing a thrill. He on his part saw in me a doubtful imitator. I wish to lay stress, however, on the dimness of those ideas of his. He would certainly not have understood my comments upon them, the dullard.’



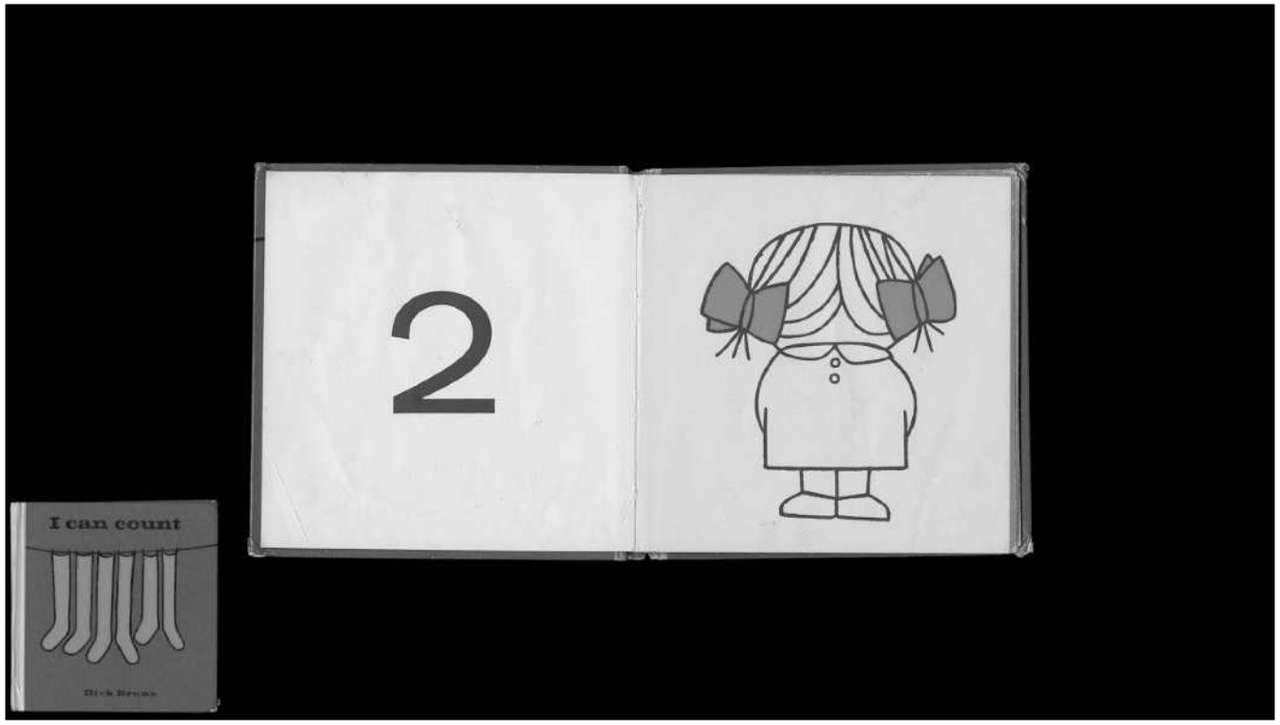
Binding keeps the book together. Until the book is opened. Now the binding divides the opening.



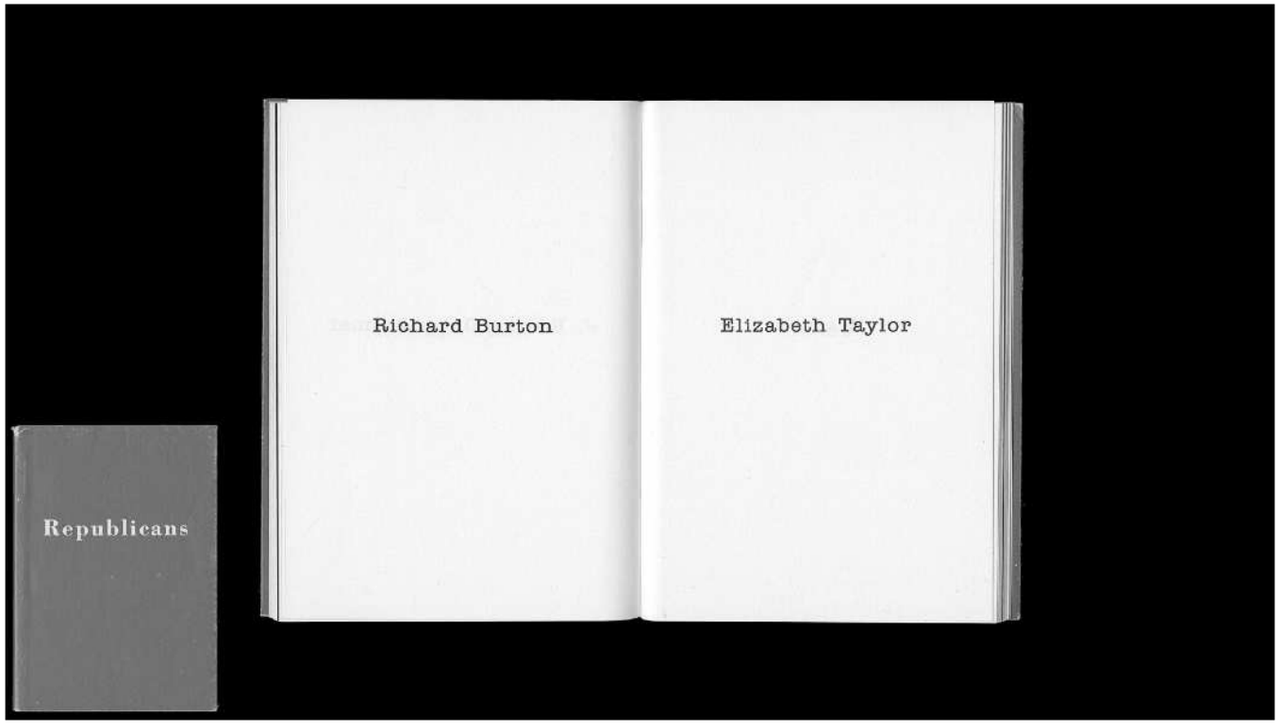
As a display device, an open book is symmetrical. Made for pairs of eyes.



and hands.



And so, unavoidably, a book has two-ness.



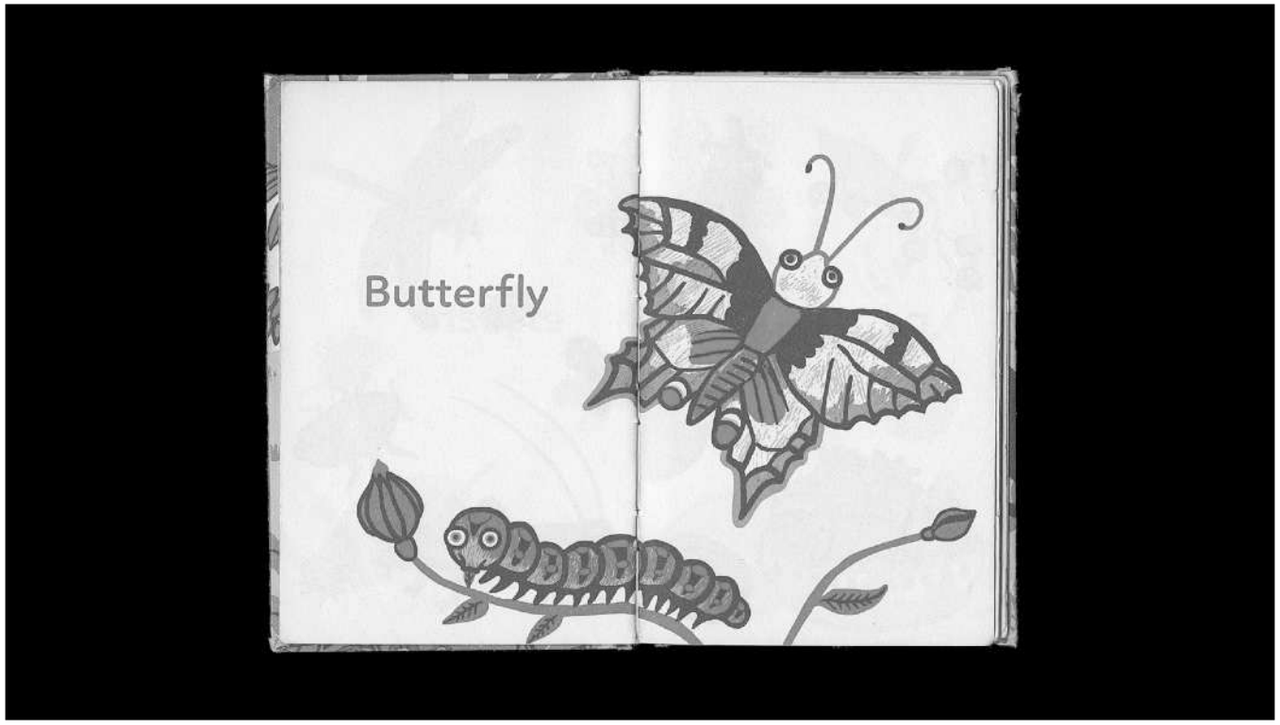
Its facing pages are two equal parts.



They are intertwined.



Like text and image.



But text and image operate at different frequencies. On different channels.

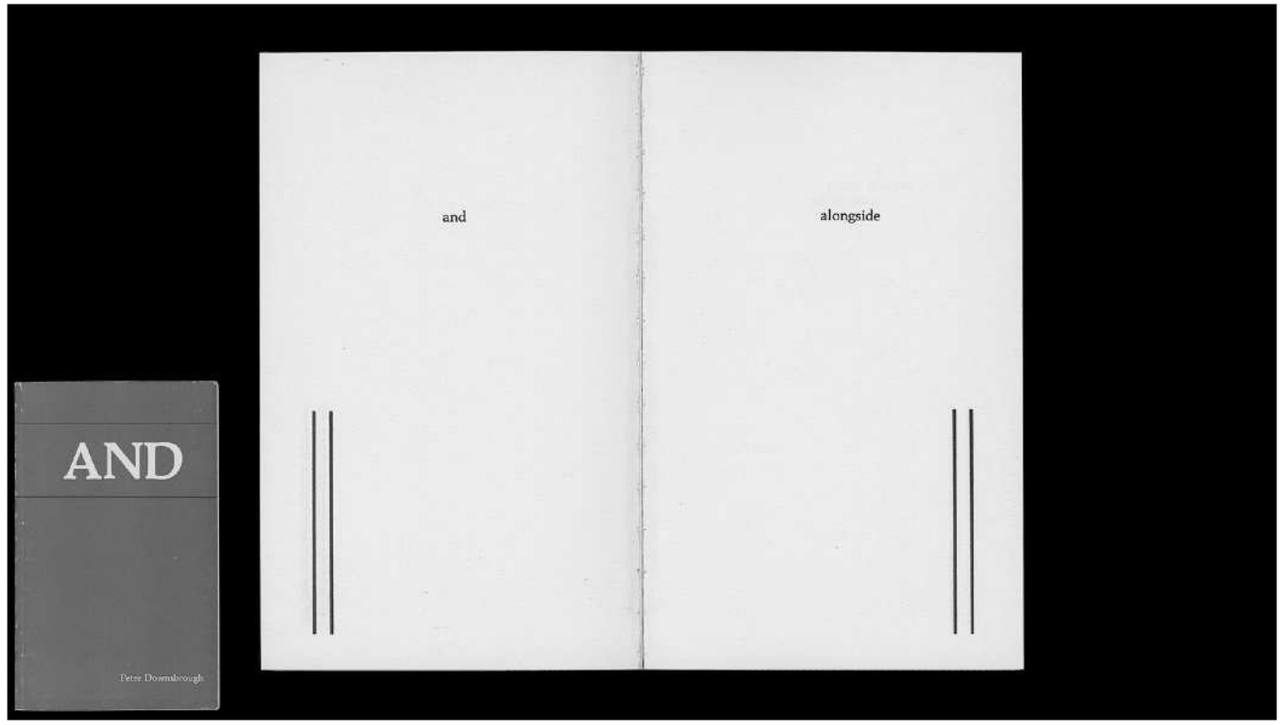


Text and image have different economies.

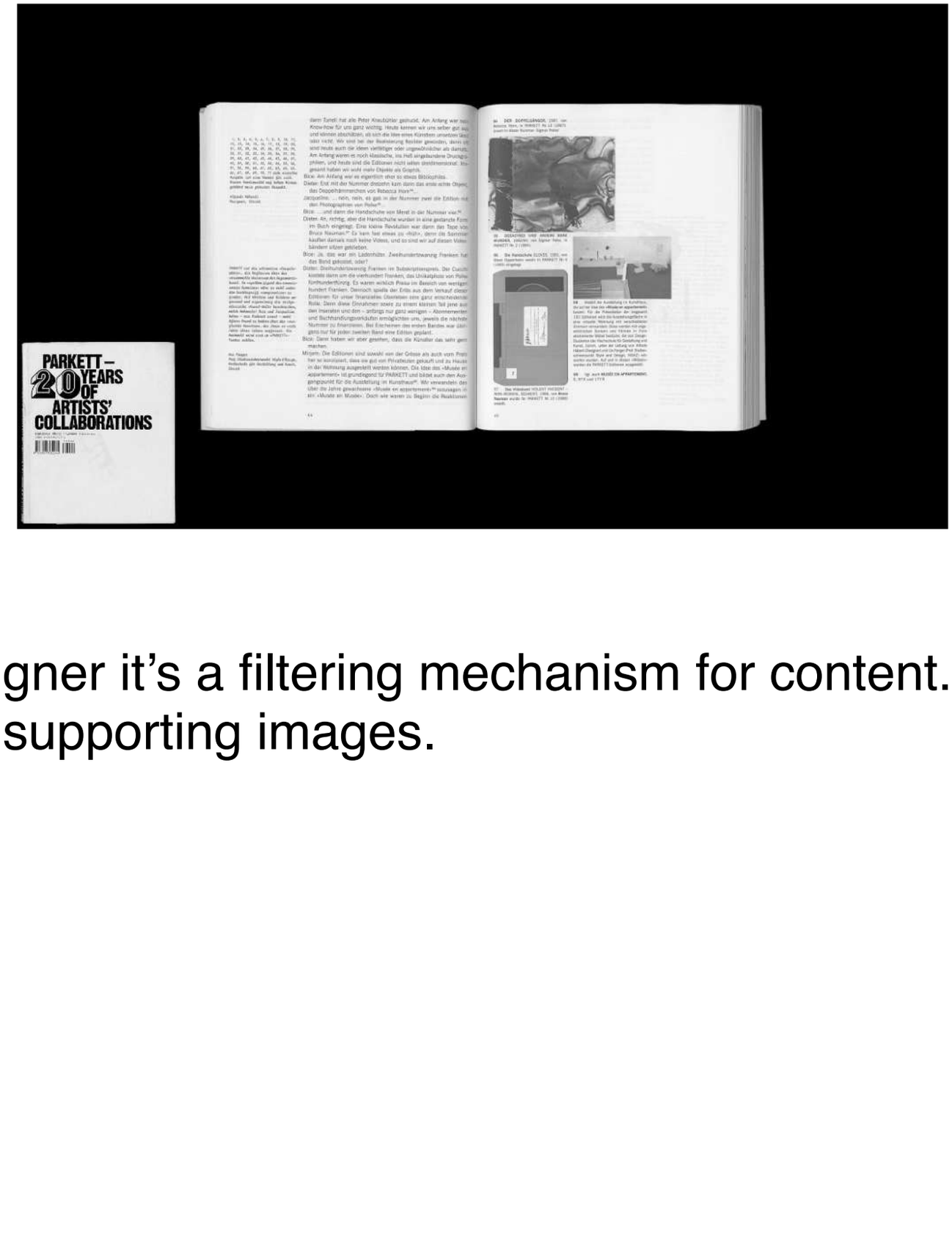
This is an artist book by Sol Lewitt. The verso page reads:

“A line equal in length to half the distance from a point halfway between the centre of the page and the lower left corner to a point halfway between the midpoint of the left side and the upper left corner, drawn from a point halfway between the centre of the page and the upper right corner toward a point halfway between the midpoint of the right side and the lower right corner.”

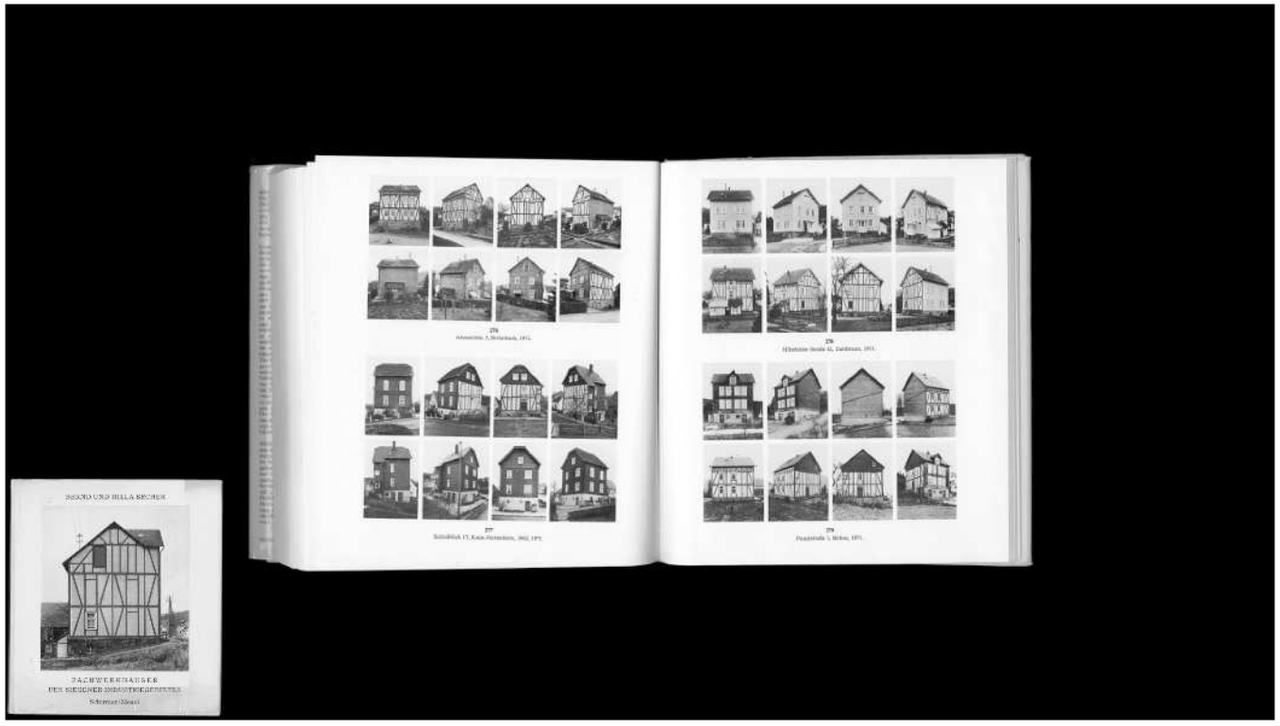
The recto page just is that. Different economies.



So what is two-ness good for?



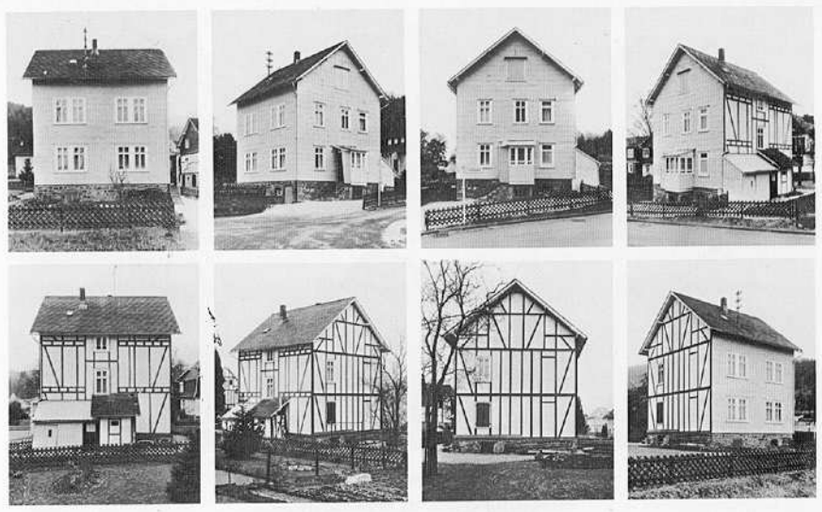
For a graphic designer it’s a filtering mechanism for content. Here is the main text. Here are the supporting images.



Two-ness naturally stages comparison. Eyes scan back and forth over this binding registering difference and similarity. That was precisely the project of its authors, the German photographers Bernd and Hilla Becher.

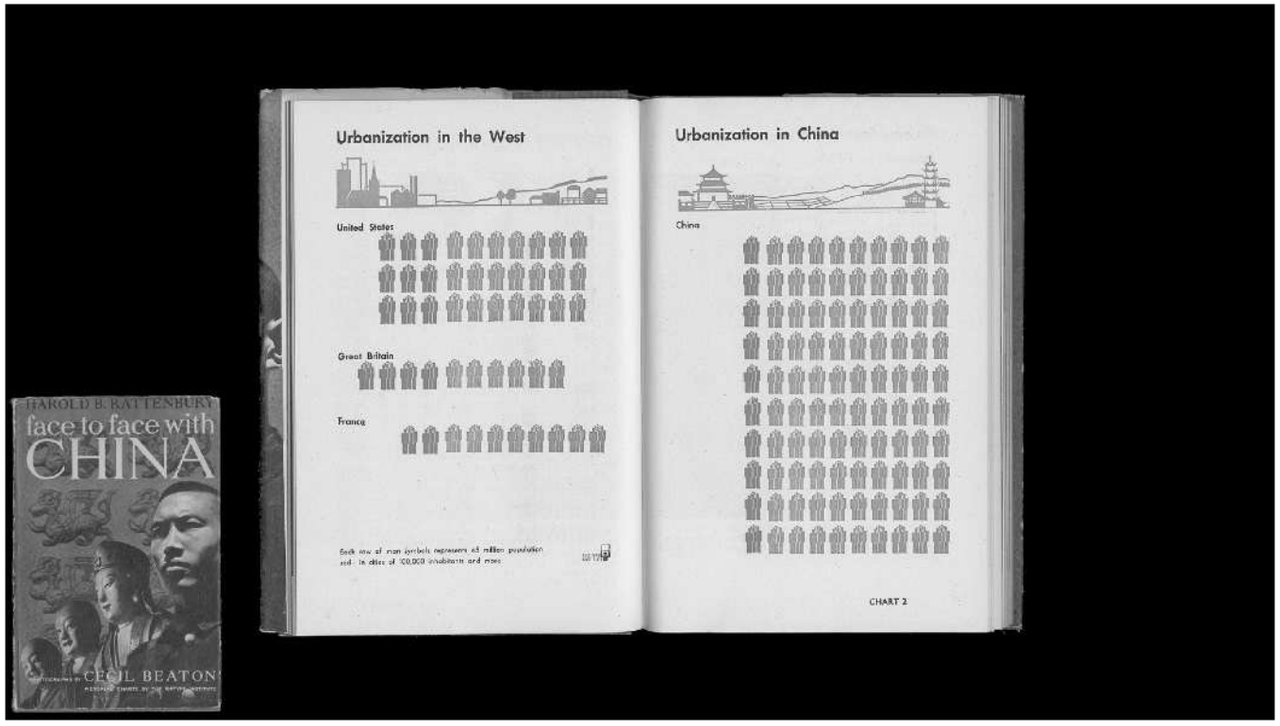


276
Abendröthe 3, Birlenbach, 1972.

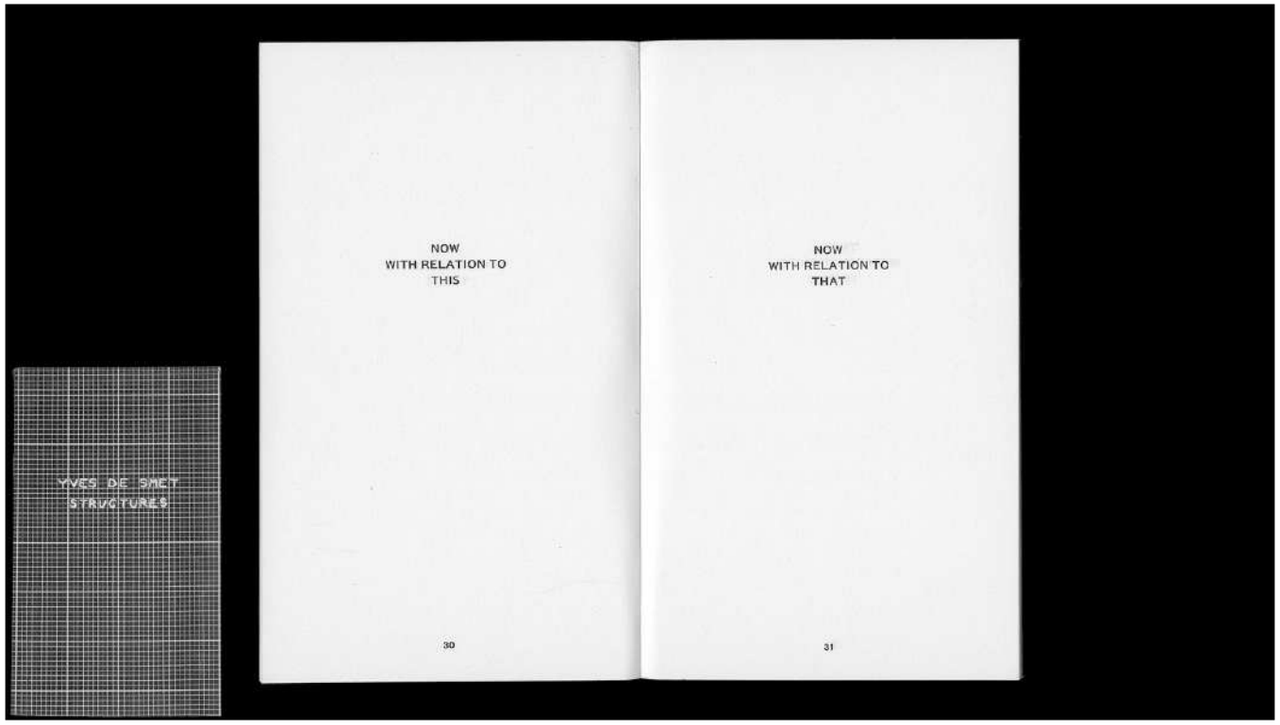


278
Hillnhütter Straße 62, Dahlbruch, 1971.

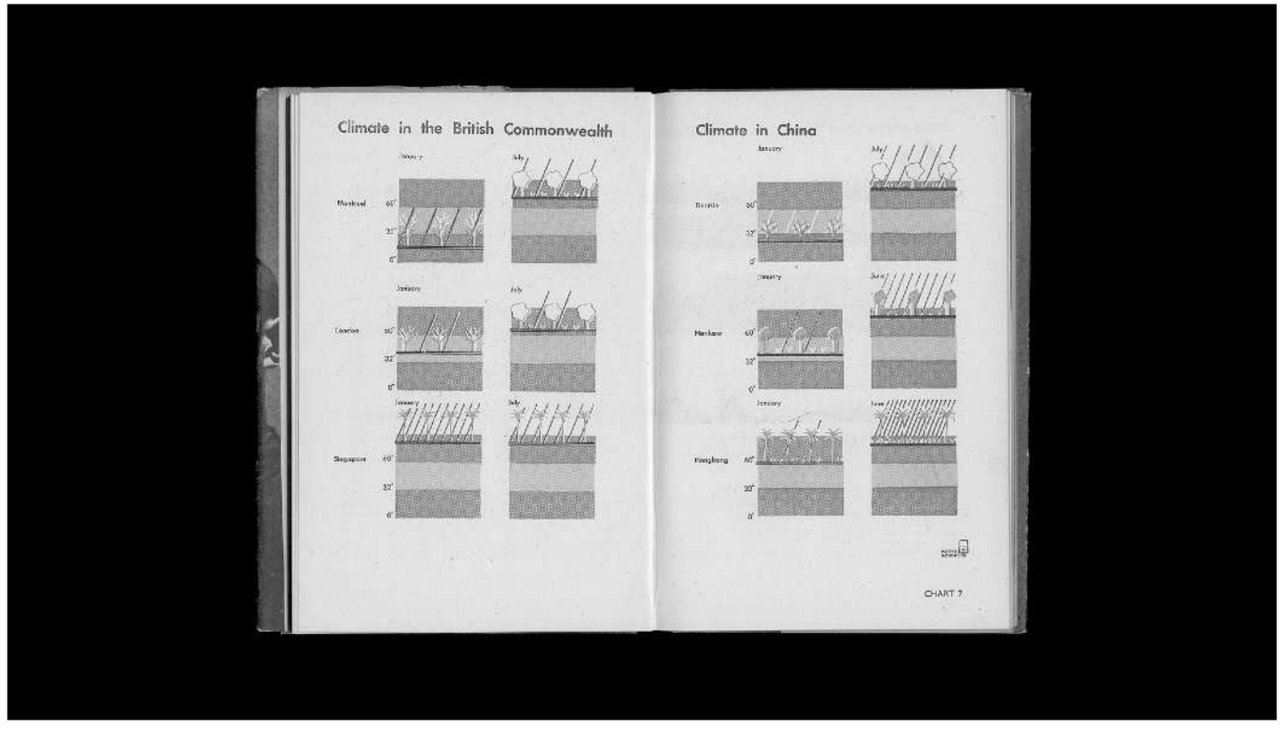
No exhibition could stage this content as perfectly as a book.



Here two-ness simply registers quantitative difference.

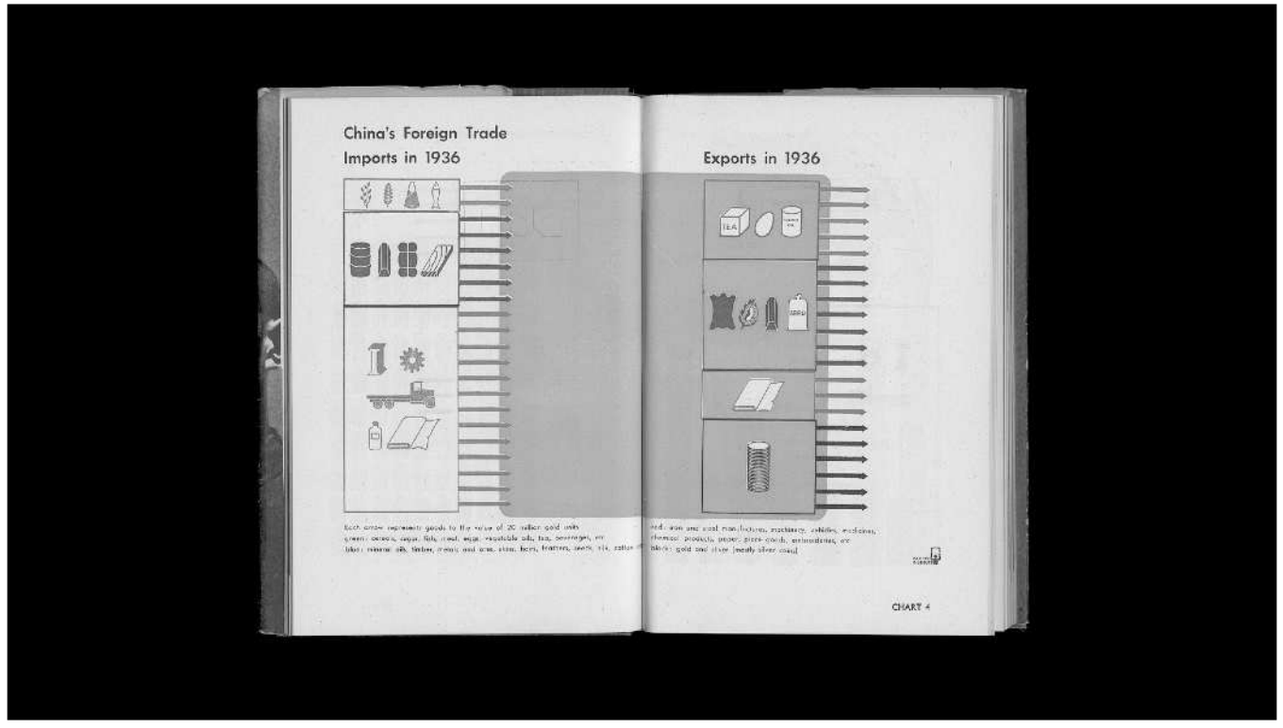


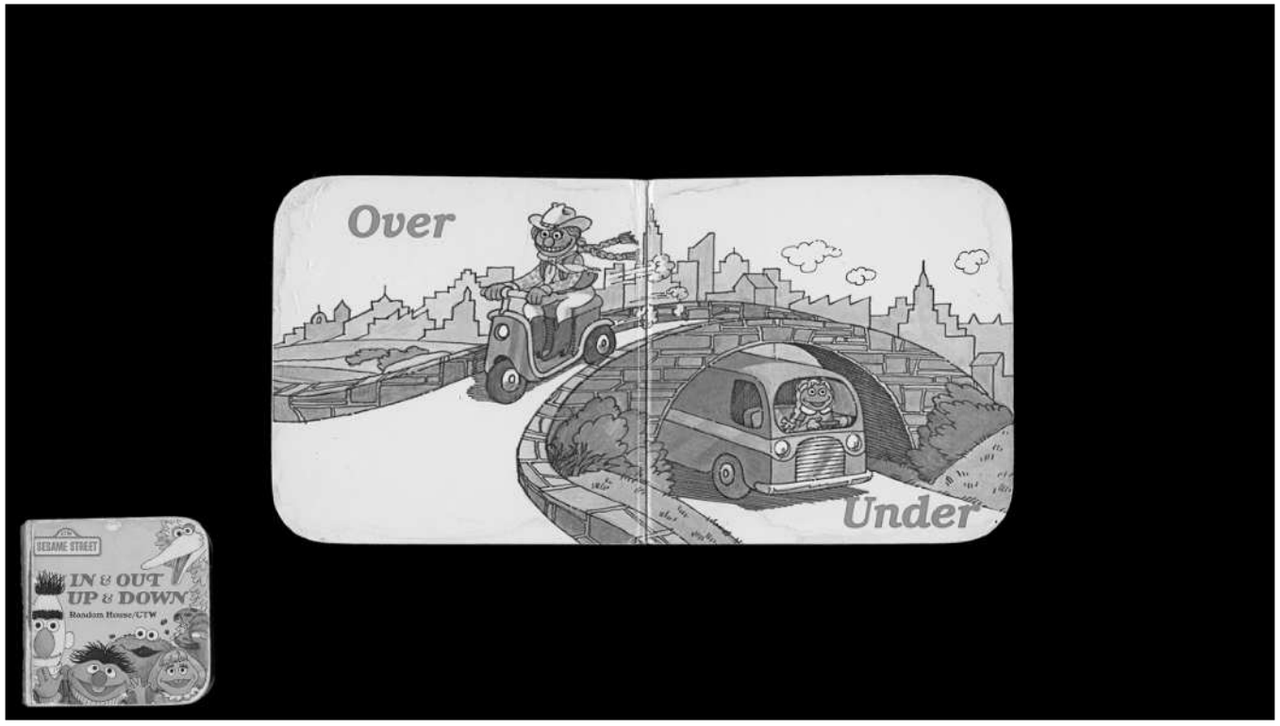
Difference in time. We cannot read both pages of an open book at once. Now with relation to this. Now with relation to that.



Here data are related through horizontality and alignment. West and East.

In and out.

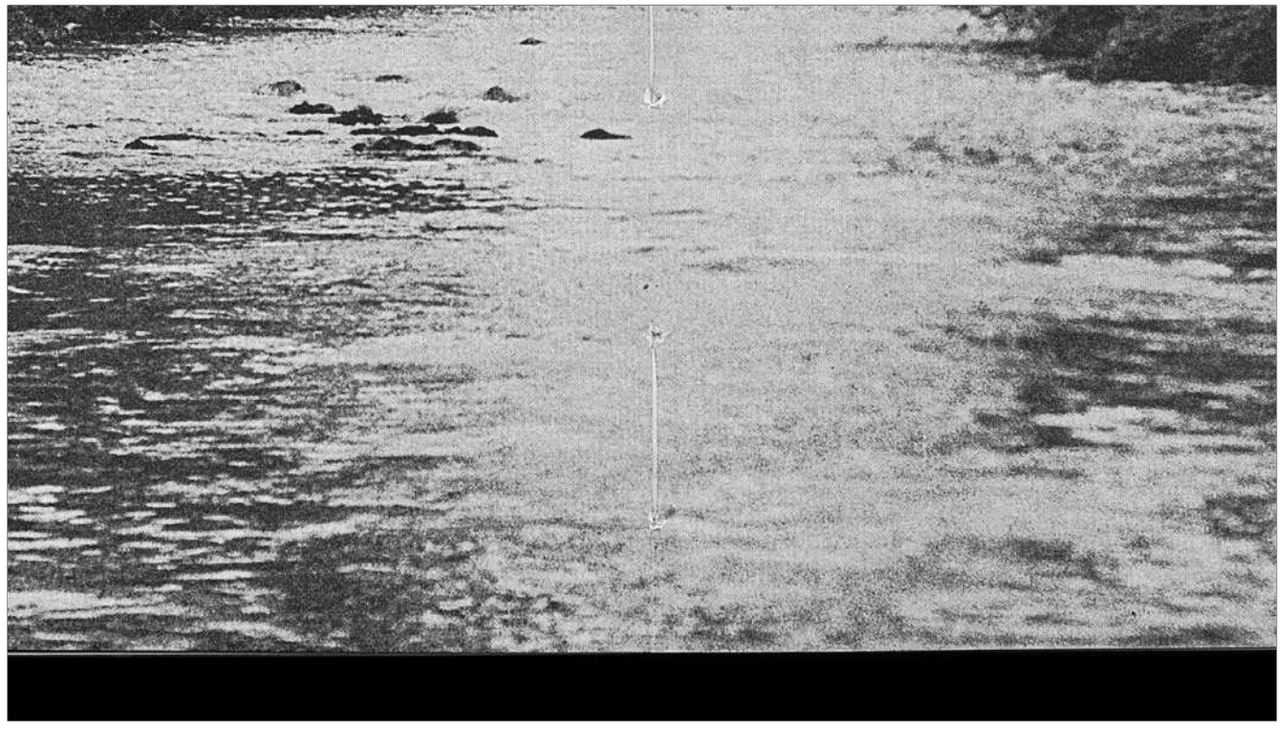

China's Foreign Trade
Imports in 1936
Exports in 1936
CHART 4



Up and down. Over and under.



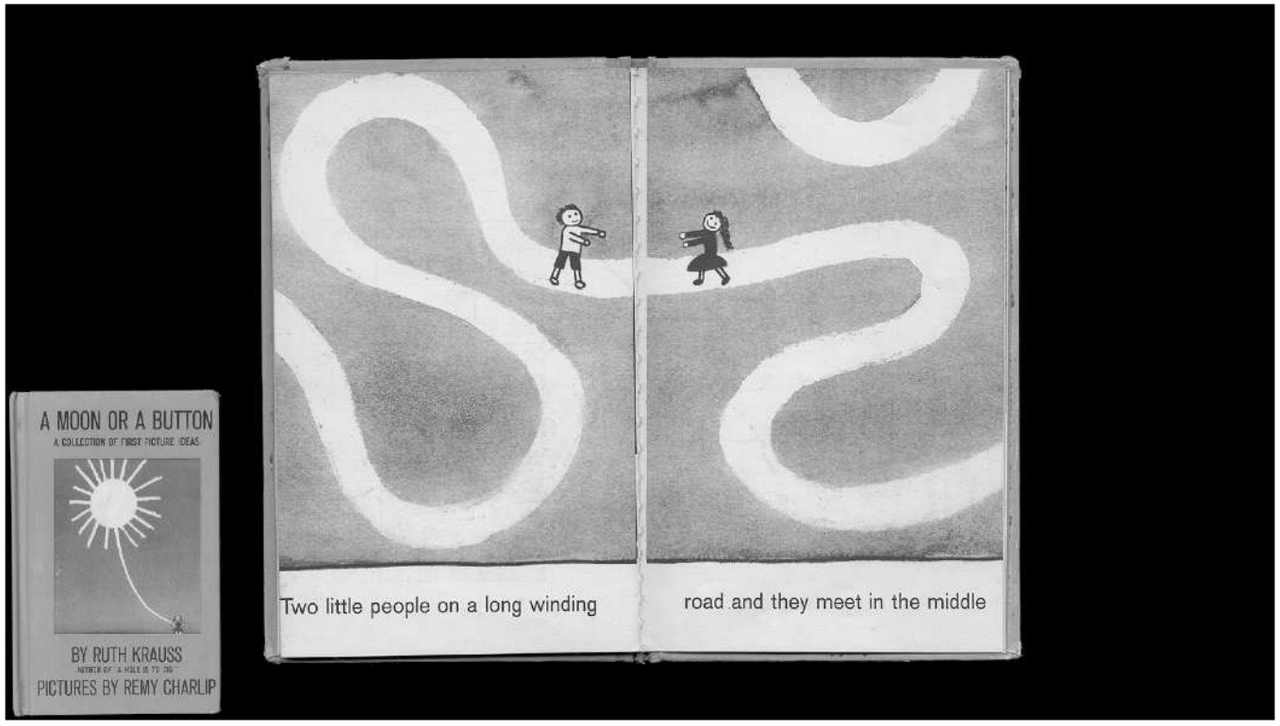
Not all openings in a binding are the same. This is a *true* spread.



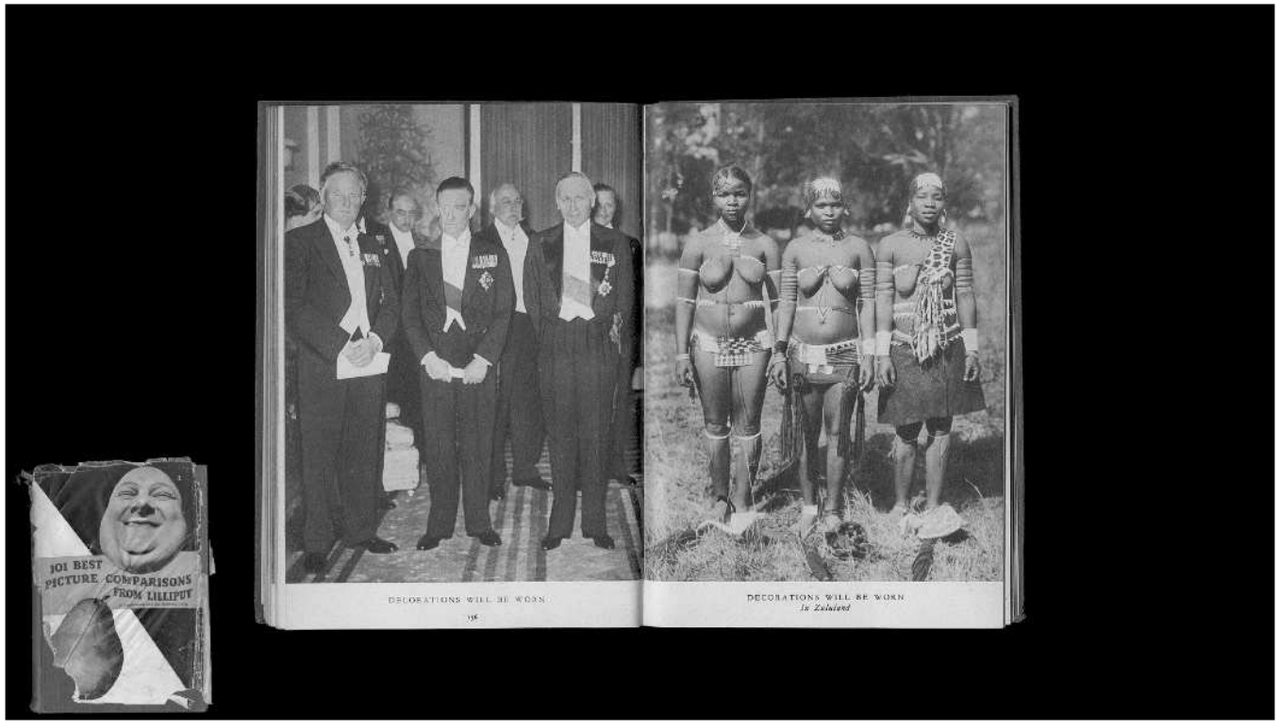
The point in the middle of a signature where the opening is a continuous surface of paper.



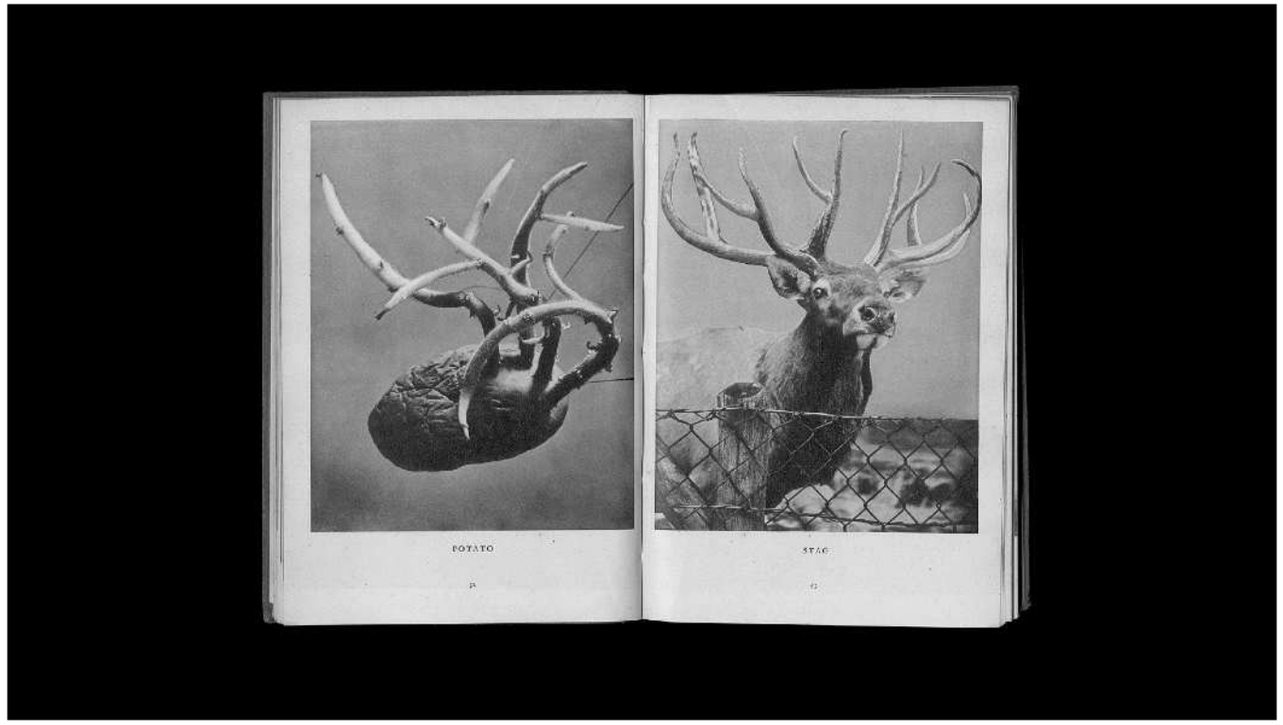
Here is the two-ness of a meeting.

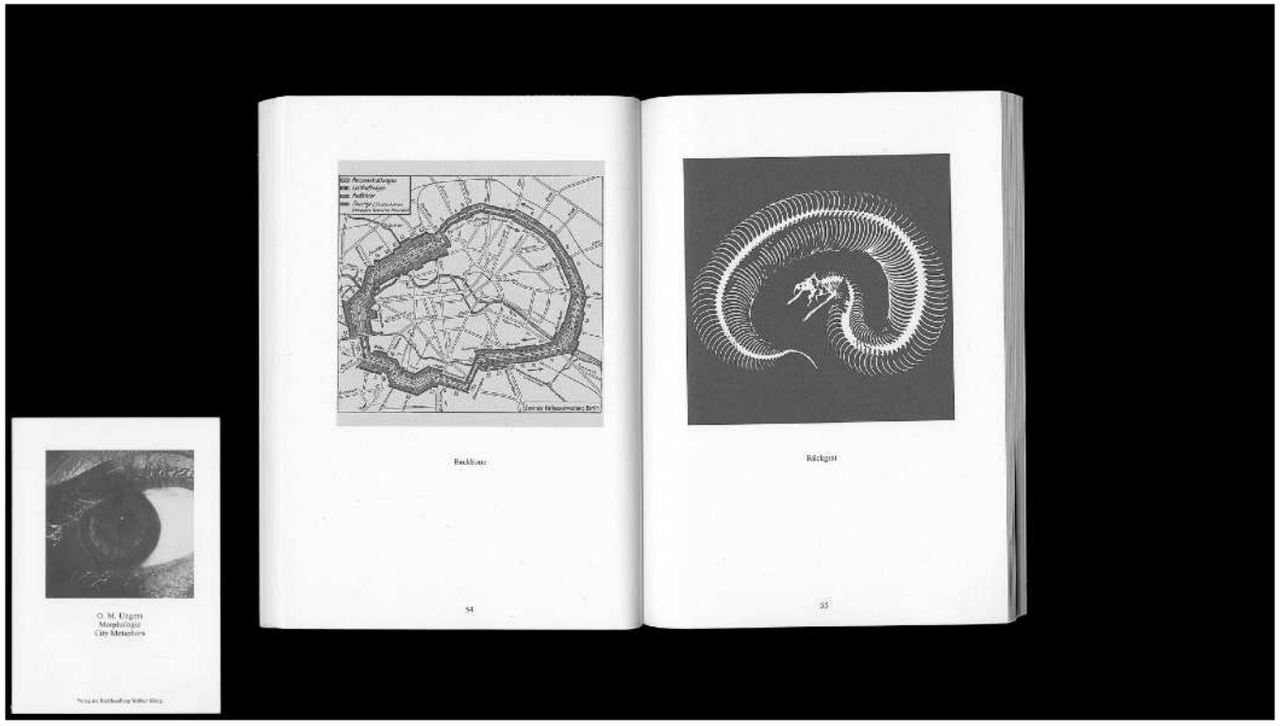


The binding is a meeting point.

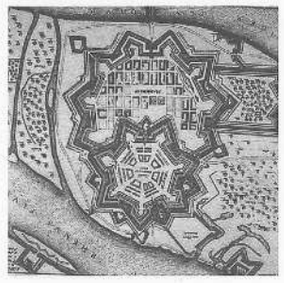


I said that the binding at once unites and divides. Binding engineers analogy, likeness, as distinct from sameness. Things that are not alike find a family resemblance through binding. The German picture editor Stefan Lorant was the master of this force.


POTATO
STAG



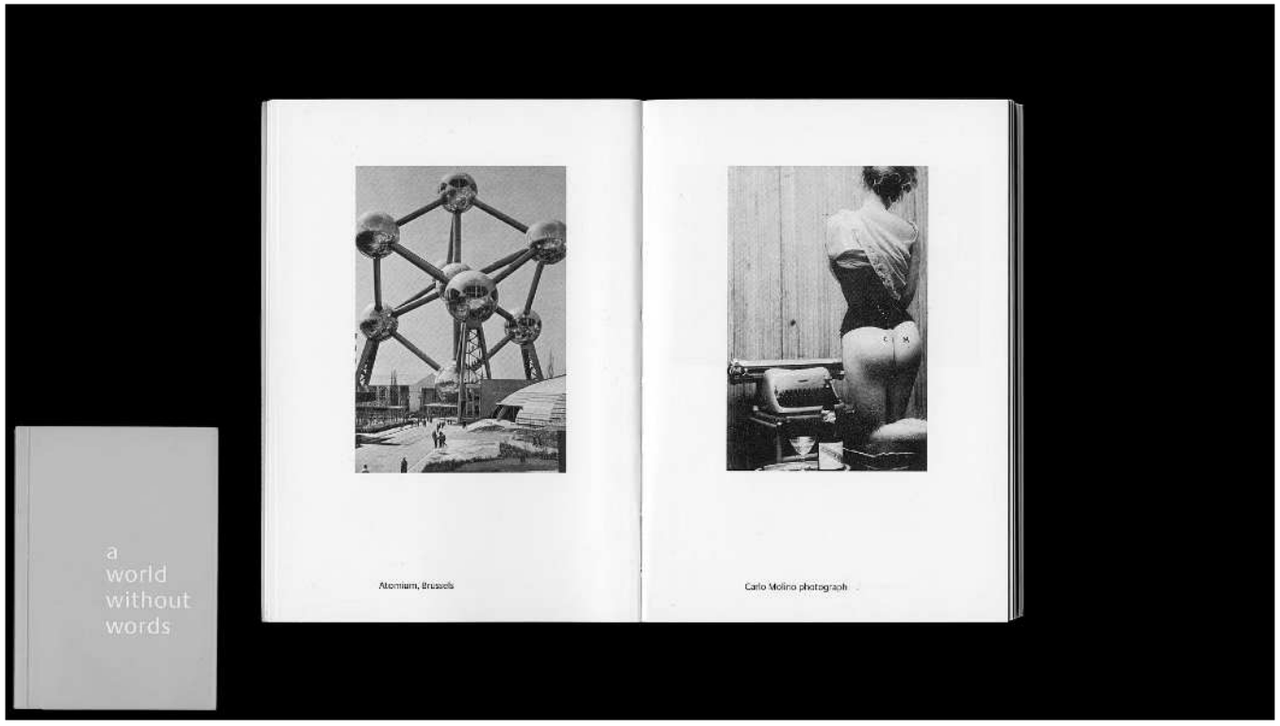
Others, like Oswald Ungers, used it to reimagine the city through metaphor, appealing to some universal likeness of form and structure.



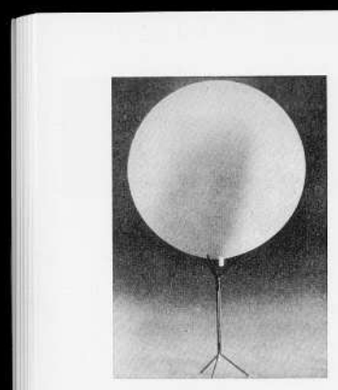
Duplication



Verdoppelung



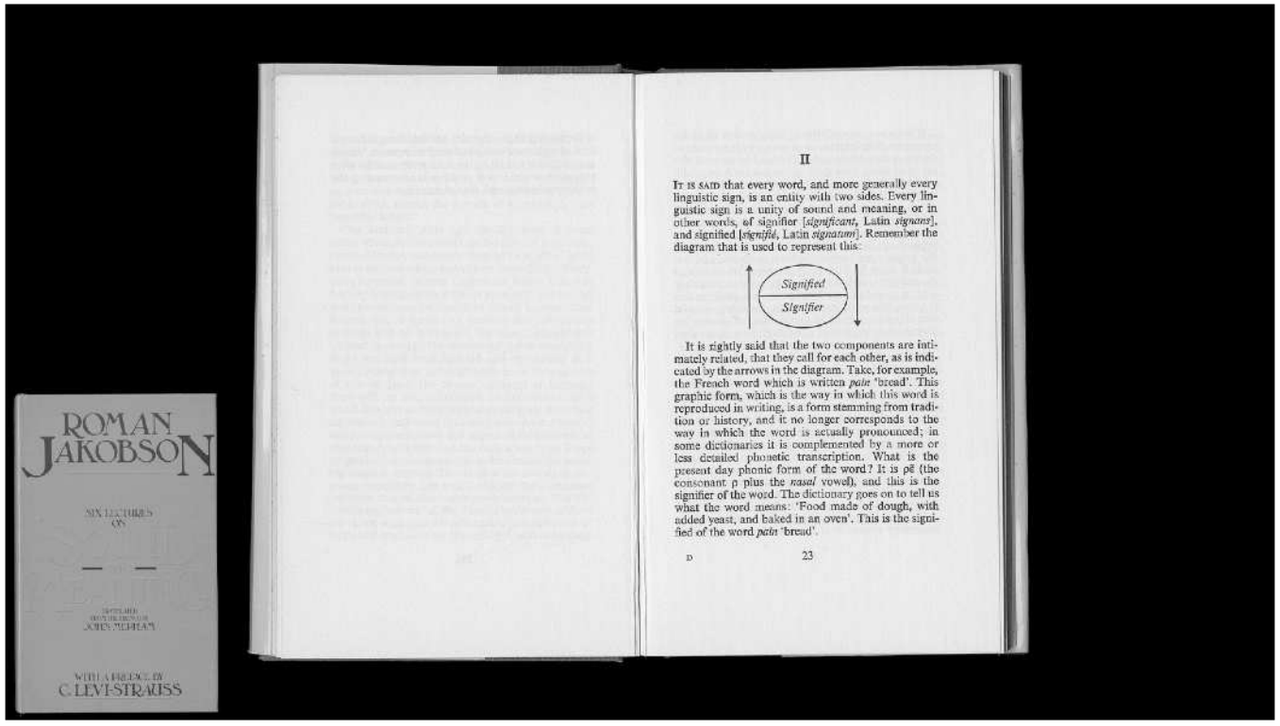
Jasper Morrison and Tony Arefin used it to create formal unions.



Piero Manzoni

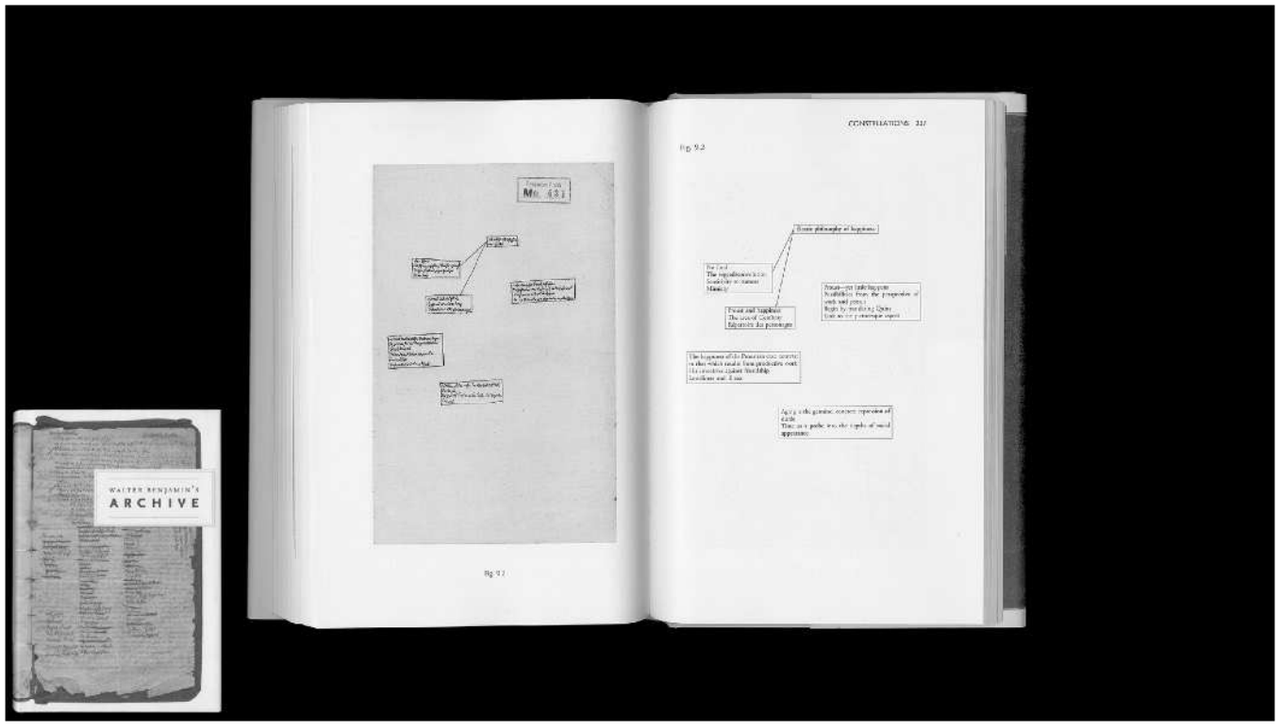


Piaggio scooter



Two-ness is elementary.

‘It is said that every word, and more generally every linguistic sign, is an entity with two sides. .. It is rightly said that the two components are intimately related, that they call for each other ...’



Like a boundary between an original and its transcription,

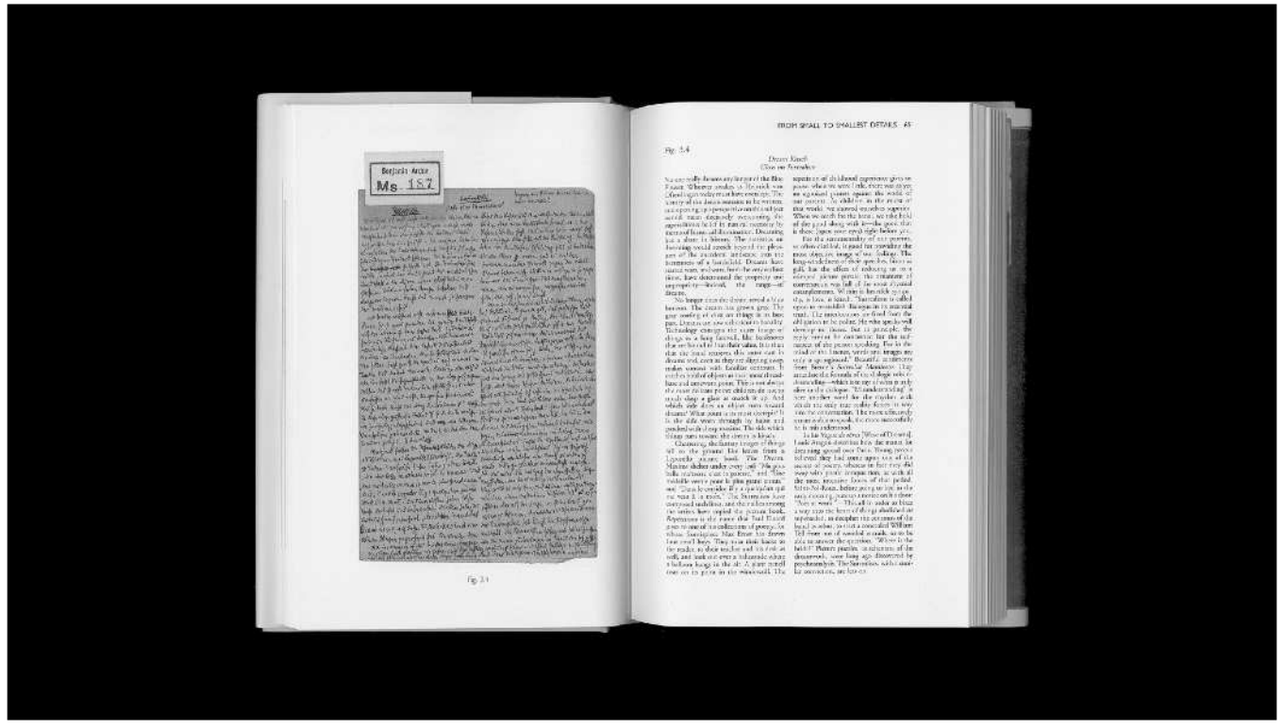
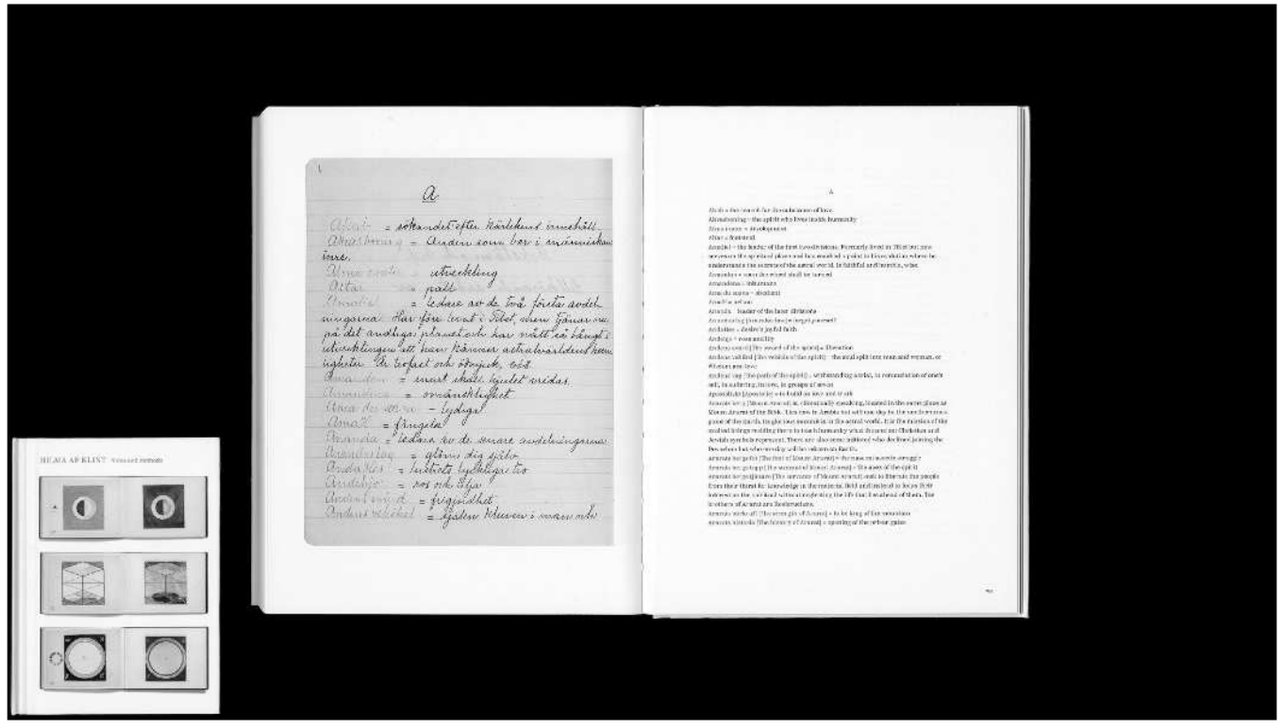

Beinecke Rare
Ms 157

Fig. 3.4

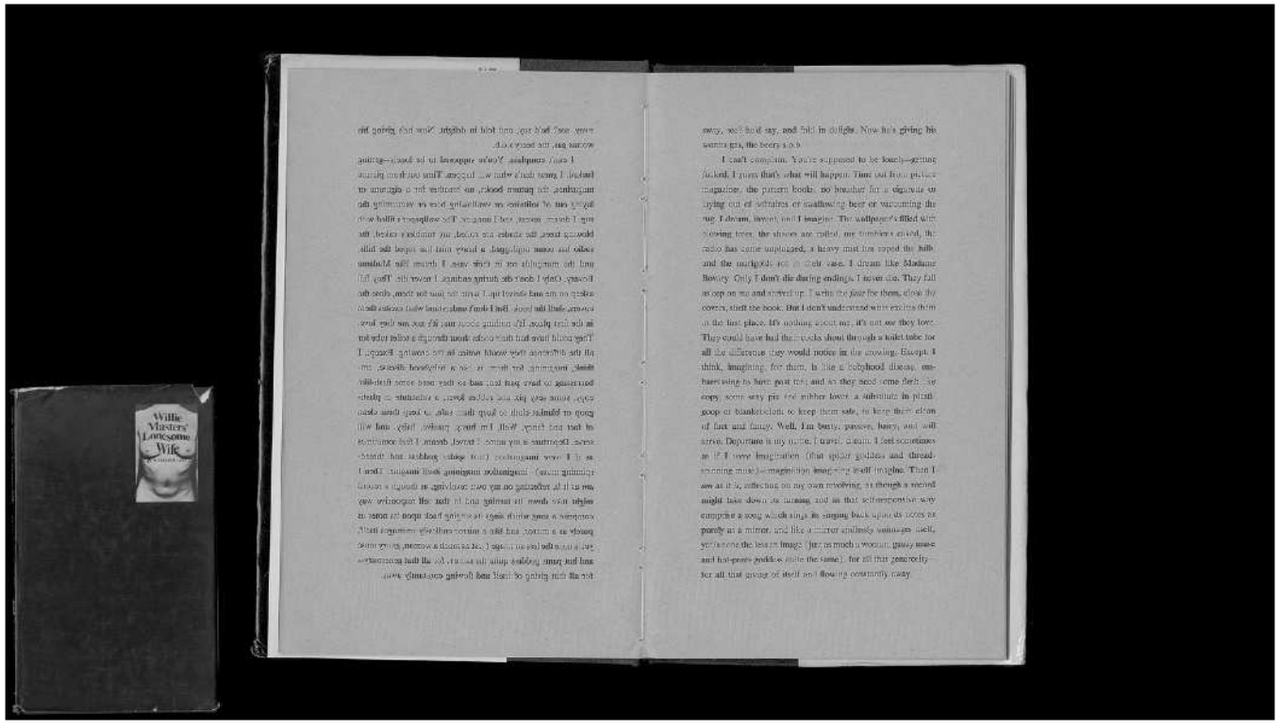
Fig. 3.4

Dream Knoll
Close-up Perception

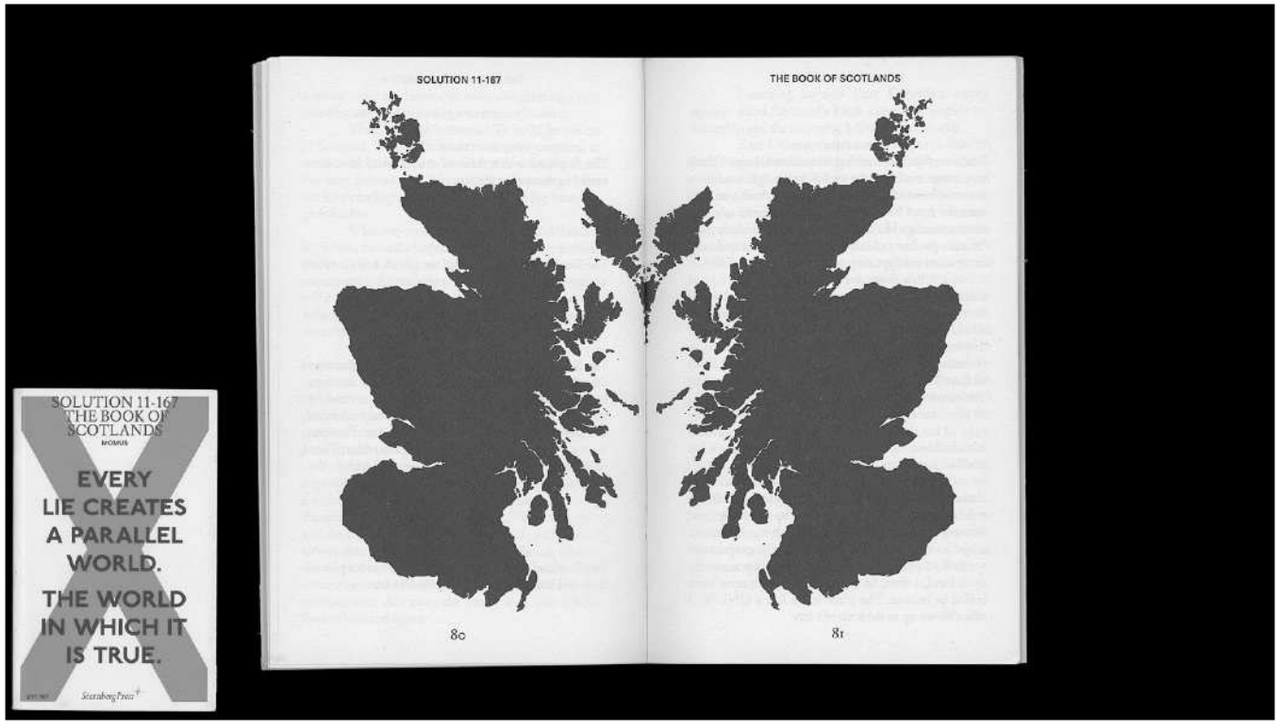
translation,



interpretation.



But true two-ness in a book is unnatural, strange. Resemblance becomes reflexive,

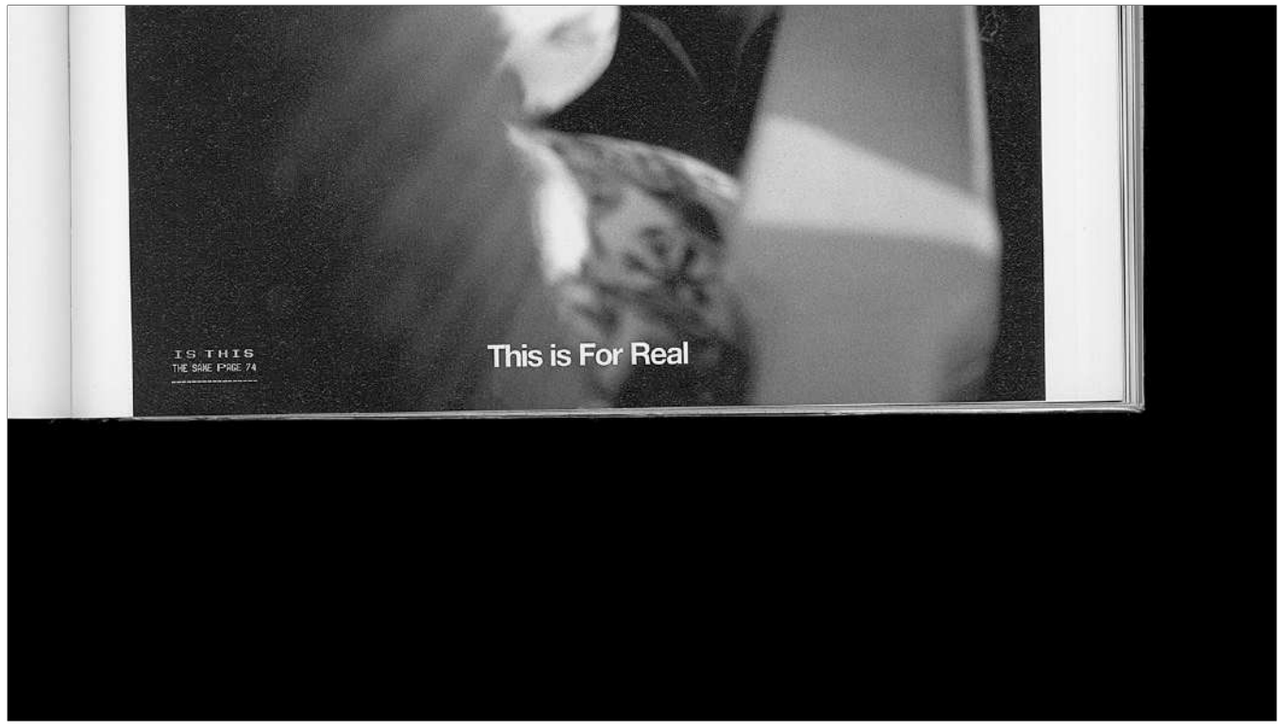


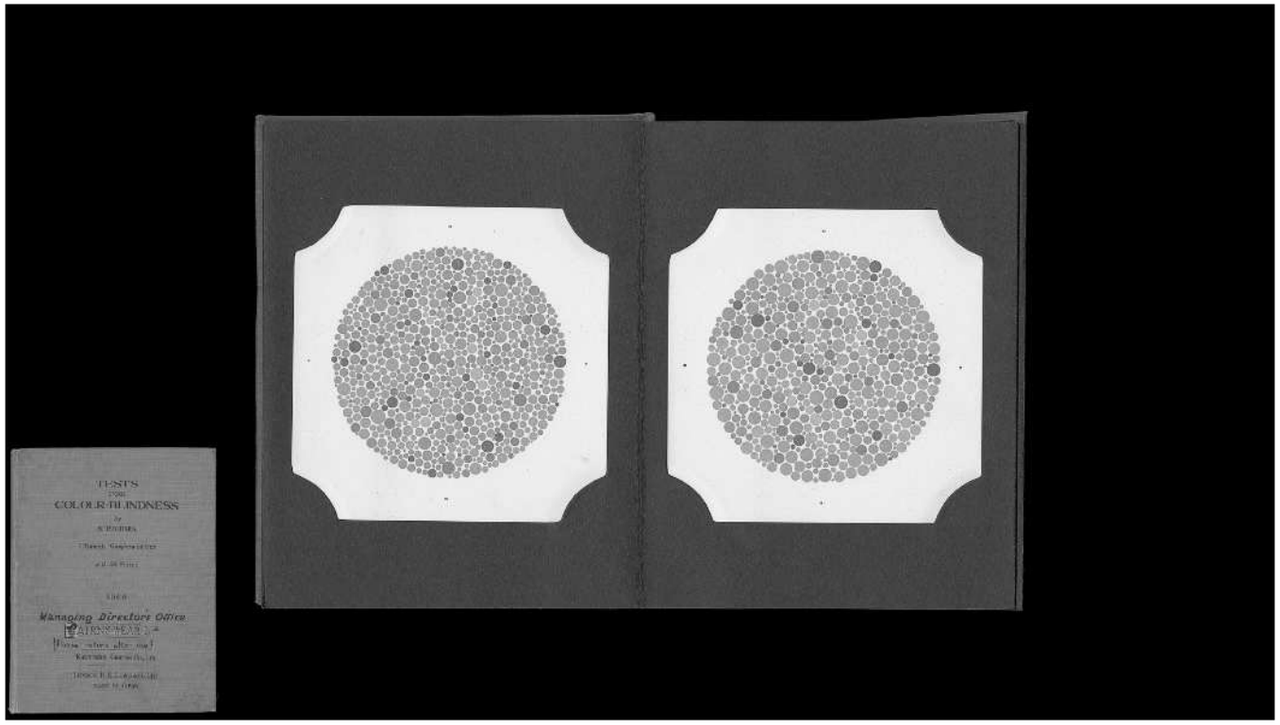
speculative,



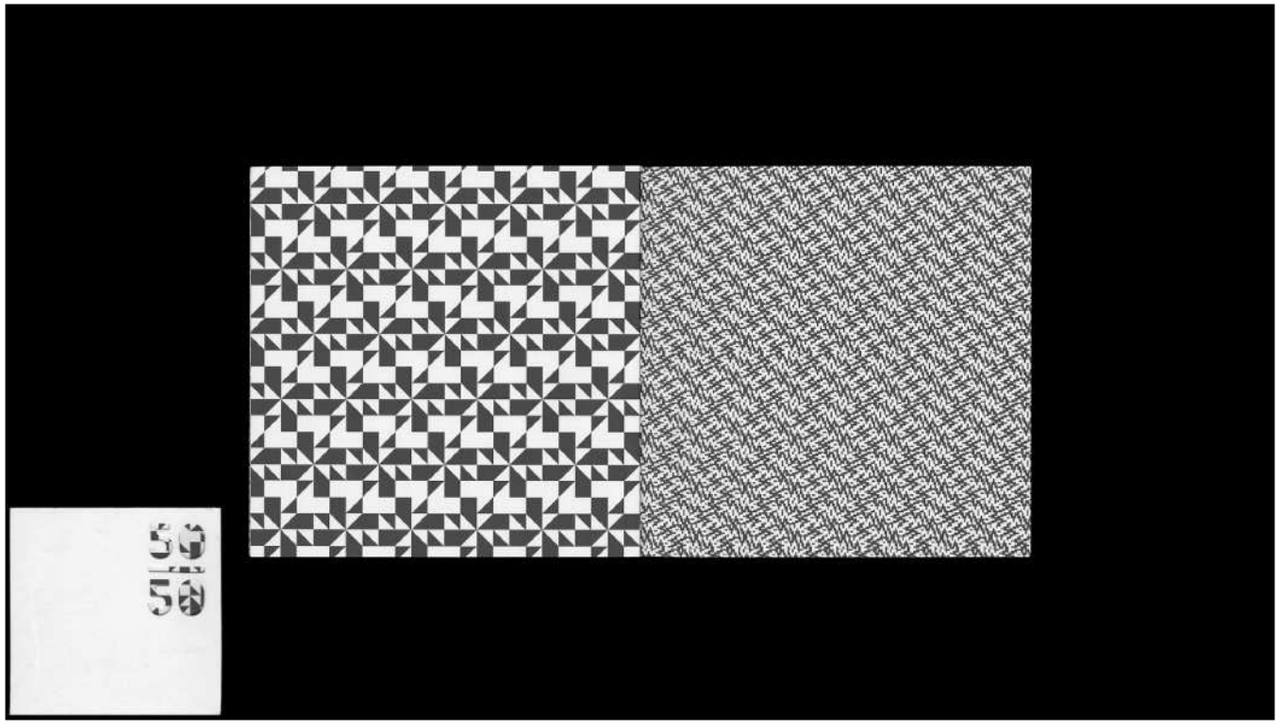
counterfactual.


THIS IS
PAGE 74
This is fiction


IS THIS
THE SAME PAGE 74
This is For Real



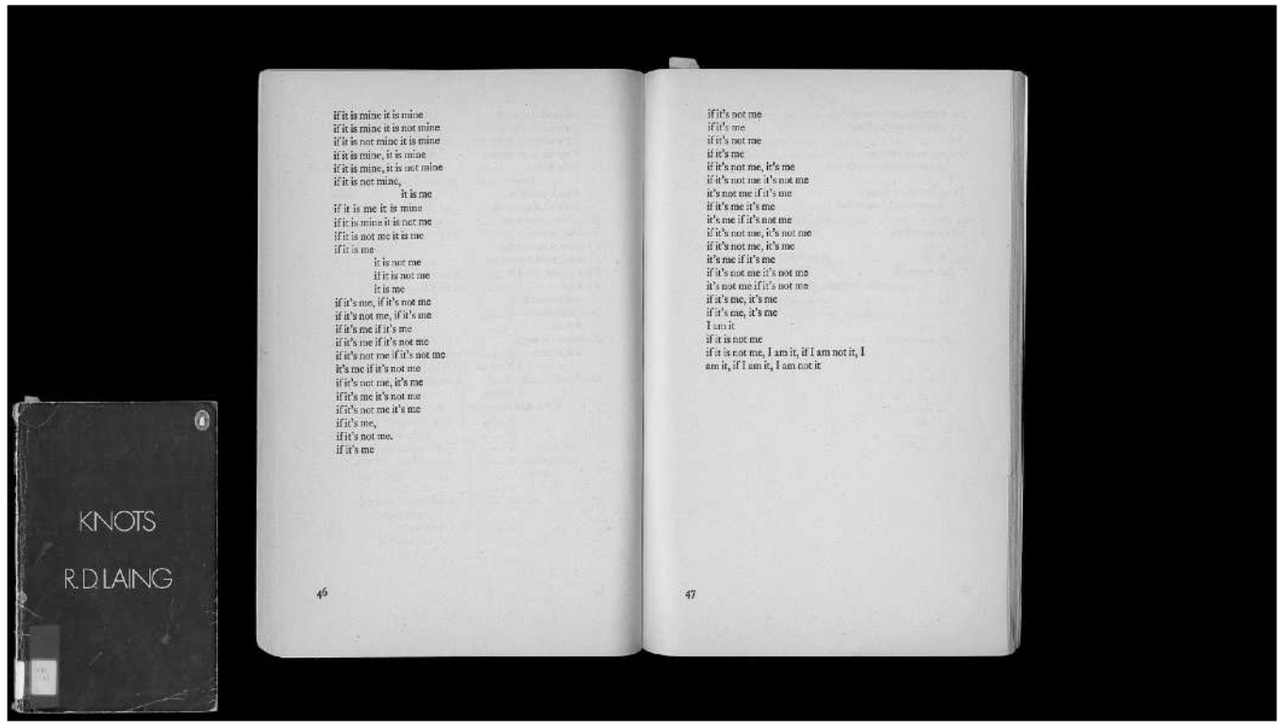
When likeness is stretched, the force of a binding comes under tension



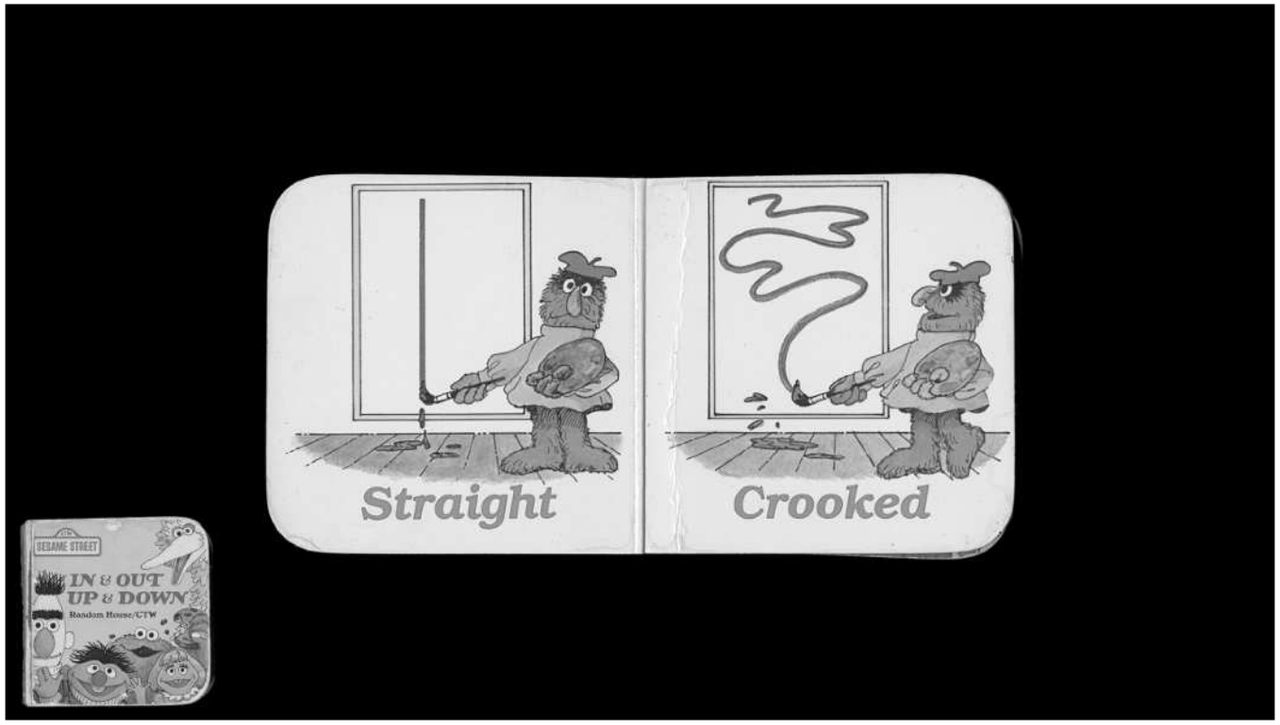
becomes uncomfortable.



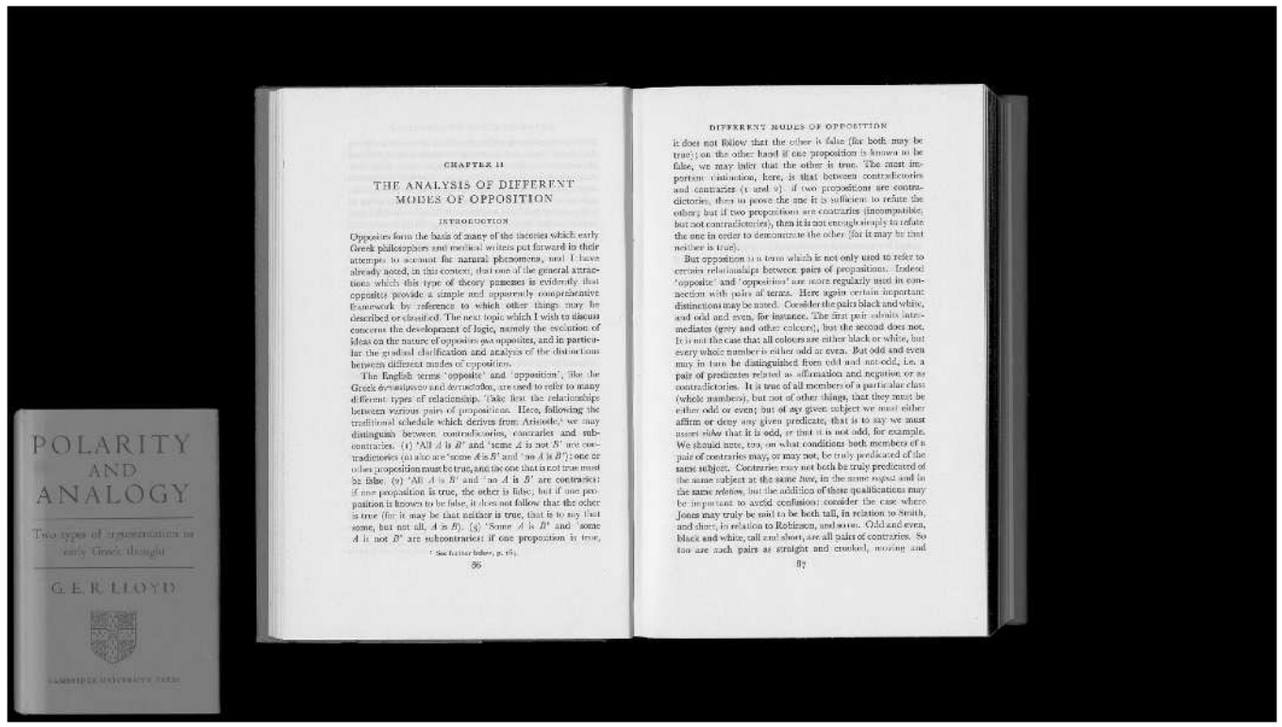
Discordant. A broken analogy. A monstrous resemblance.



If it’s not me
If it’s me
If it’s not me
If it’s me
If it’s not me, it’s me
If it’s not me it’s not me
It’s not me if it’s me
If it’s me it’s me

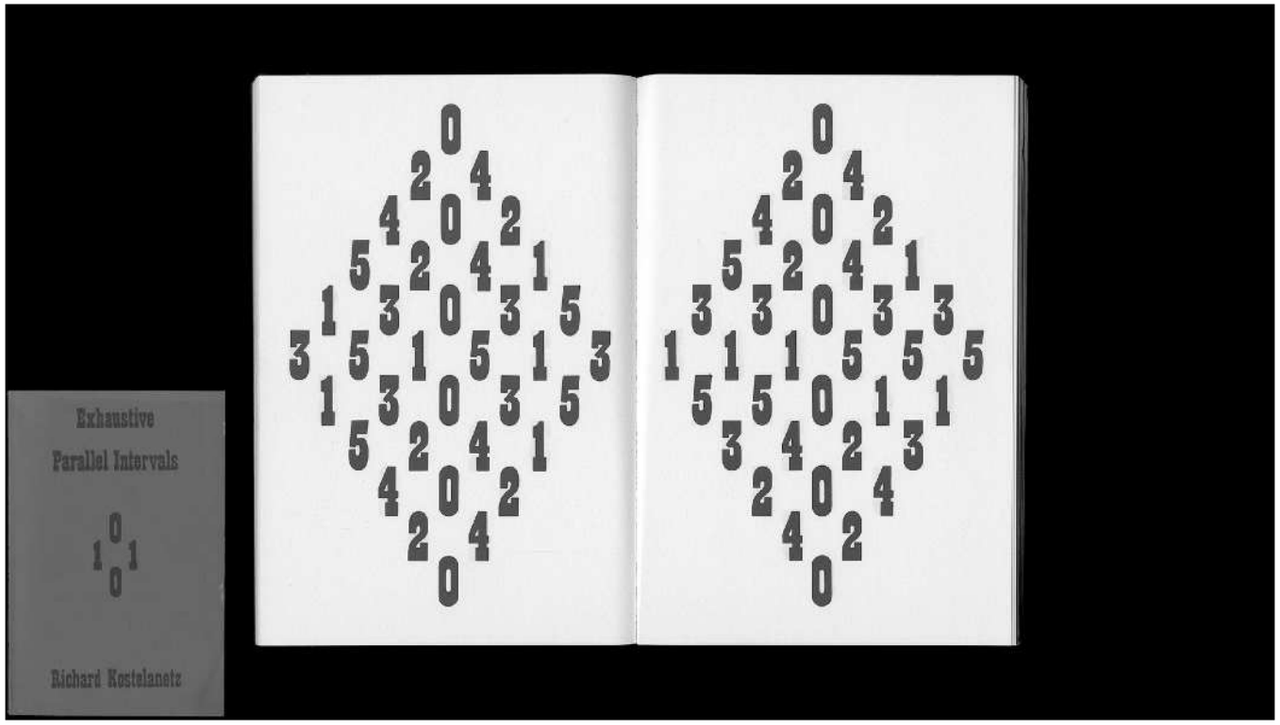


Now we see the book as a differentiator.

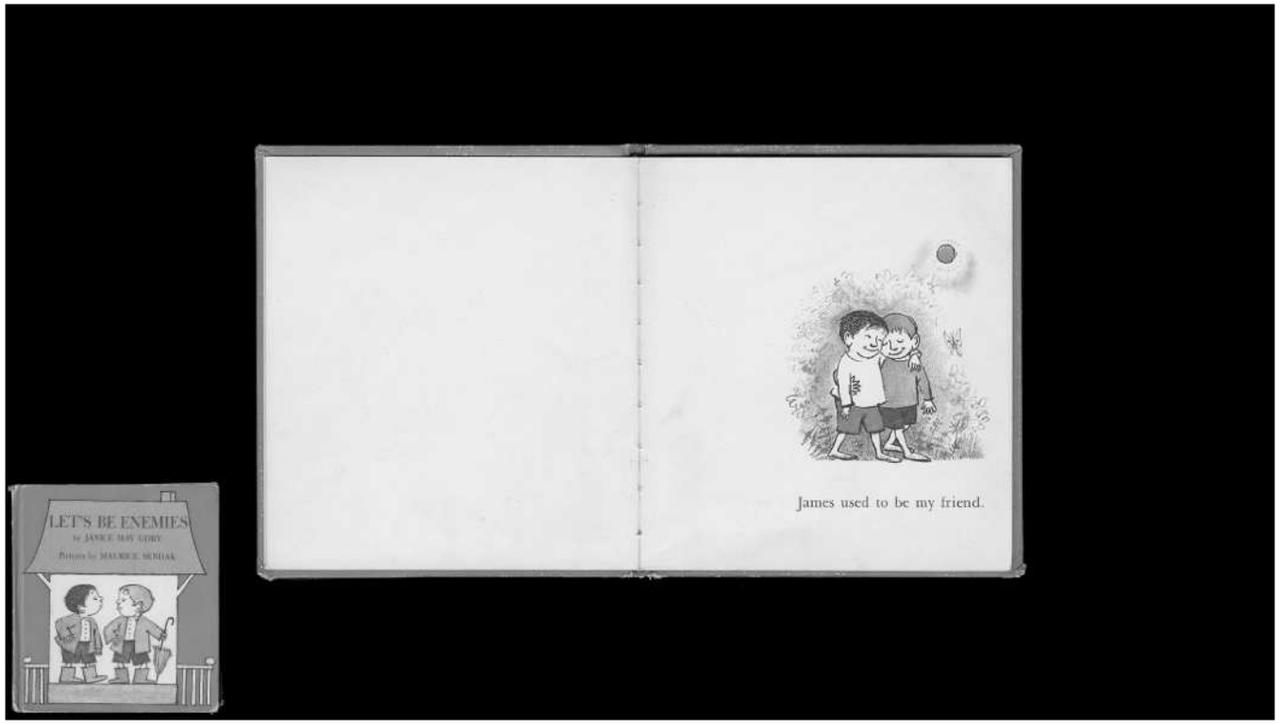


In Polarity and Analogy, Two types of argumentation in early Greek thought, G. E. R. Lloyd wrote:

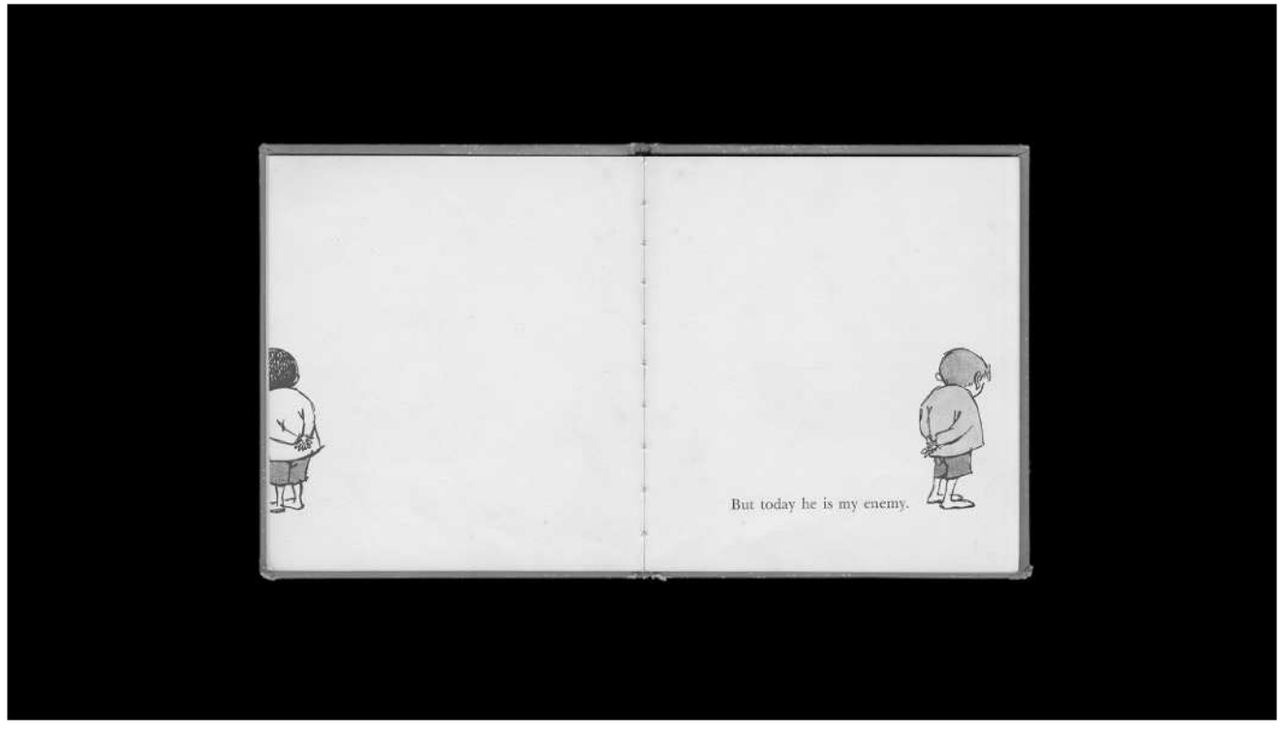
‘The most important distinction, here, is that between contradictories and contraries: if two propositions are contradictories, then to prove the one it is sufficient to refute the other; but if two propositions are contraries (incompatible, but not contradictories), then it is not enough simply to refute the one in order to demonstrate the other (for it may be that neither is true).’

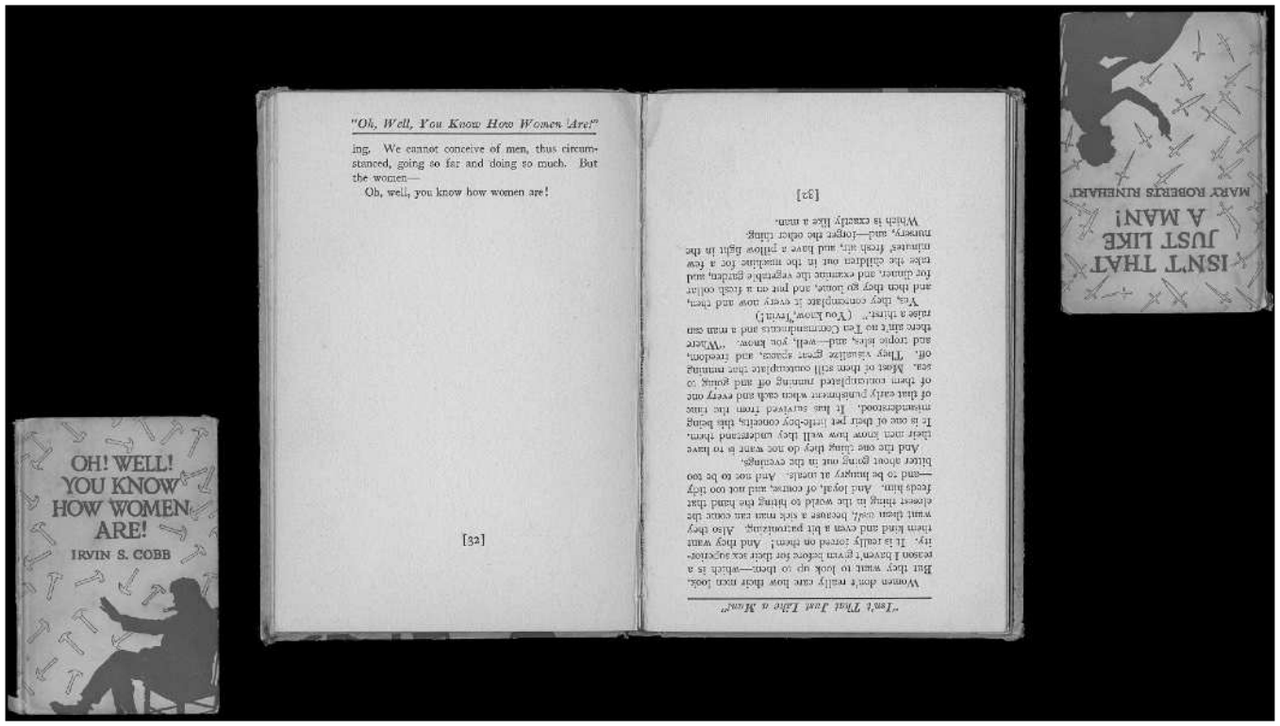


It is not the case that all colours are either black or white, but every whole number is either odd or even.

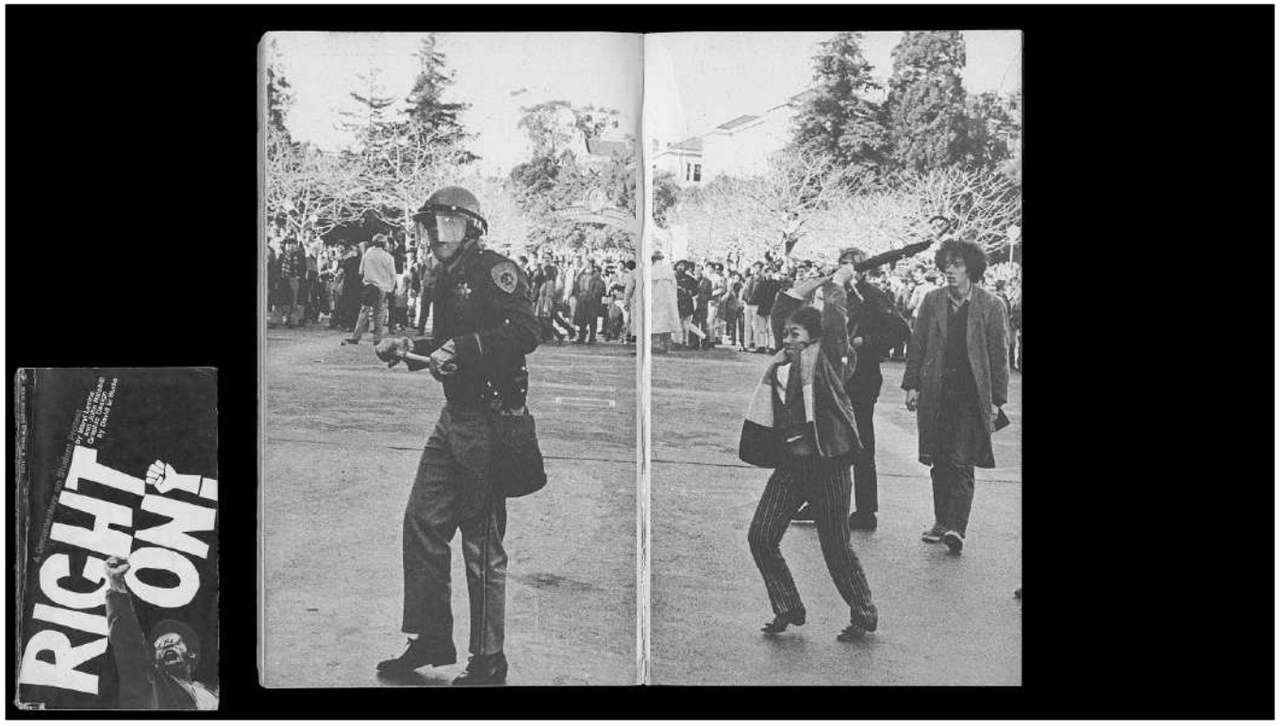


Swiss artist Thomas Huber said books are for reporting on good and evil.


But today he is my enemy.



Facing pages stage conflict. Be it gendered,



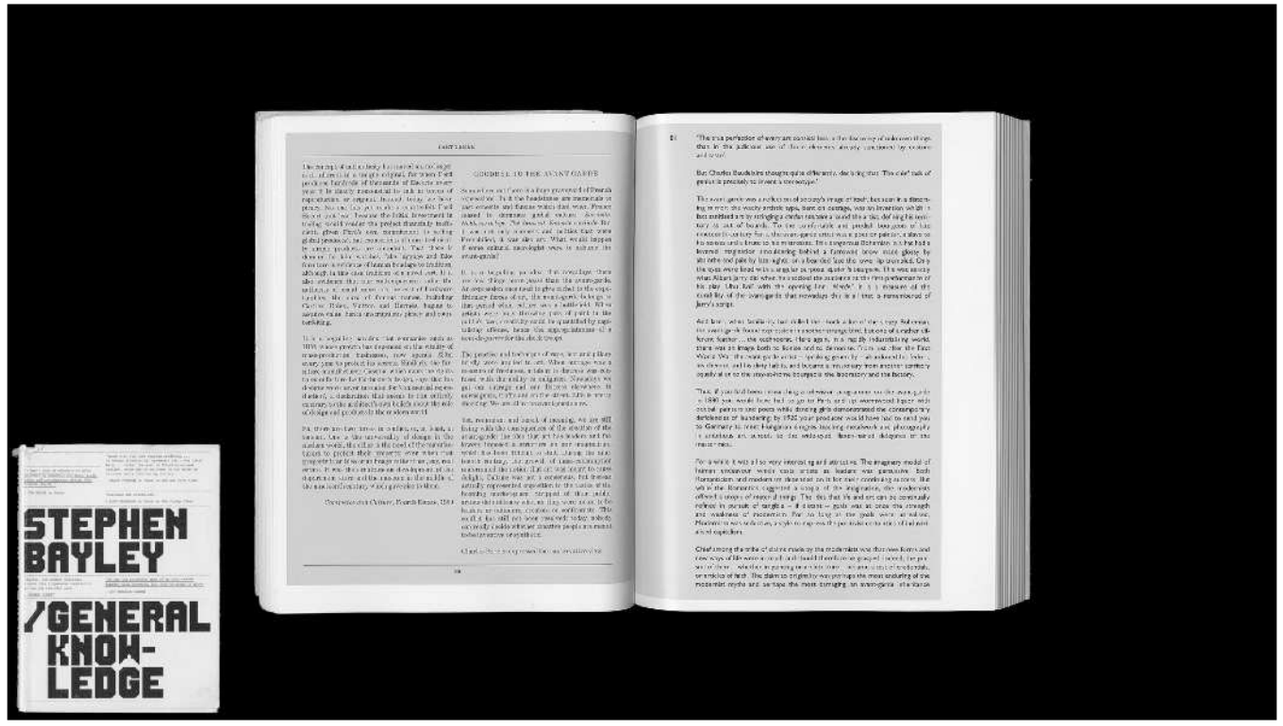
politicised,



intergalactic.



I said that not all openings are the same. As well as true spreads there are openings between sections of a binding. This is where binding works hardest, uniting two completely different paper surfaces that might have been printed on different presses at different times.



Graphic designers are normally obliged to smooth over these breaks. But not always: this book designed by GTF changes its graphic design for each section of its binding, even if that happens, by accident, to be in the middle of a sentence.

the purposes of modern industrial design. A Rockwell teapot, for instance, is both a geometry lesson and a sermon.

The apparent universality and brilliant timelessness of Keats's judgement is made less clear and more poignant by the clutter of metaphor surrounding the poem. In order to come to terms with the problem of beauty and decay in concert of other poems, including 'Ode to Melancholy' and 'Ode to a Nightingale', and, saddened by the mutability of natural beauty, he sought consolation in the more permanent beauty of art". But the perception of value in art changes.

A century and more nearer our own time the pioneer American design consultant Norman Bel Geddes, addressing the spirit of the age, claimed that if Keats had been writing in 1940 he would have used the same simile as he had about that old Grecian urn. In the middle Ages the attainment of heaven constituted beauty to be an attribute of God, rather than of man or manufactured beauty and art were not universally related. Indeed the idea of 'art' as a discrete activity was not acknowledged. Ruskin's neo-classicism, the prevailing taste of his day, restored him to admire the Hellenistic past, while Norman Bel Geddes, suffused with the spirit of the twentieth century, was so awed by the place...in design that any Goddess's contemporary, whether female, apparently without form, compared one of the Venuses finishing statuettes in his workroom in the twilight of Greece.

Each age finds its own expression in material things and the faculty we use to identify those we find palatable or repellent we call taste. With the spread of consolation, amusement and commodity befuddler, outside aesthetic criteria are being established on the basis for mental social orientation for the high time of civilisation. Everyday things we consume are - if perhaps only briefly - acquiring the certain assurance of great art.

Because it considers everything we do, taste can also become a neurosis. Total quality in design is most conveniently exhibited by the use of meaningless terms like decent, decent and sounds which have their origins in observations of human behaviour. Taste is similarly rooted in preferences, in that the exercise of it is somewhat akin to manners. The architect Vladimir Nedvetsky, an eloquent spokesman for structural rationalism in building design, applied the same principles to personal behaviour, believing that, 'La mode consiste en procédures au sujet desquelles on est tout à fait, et sans ne que n'en pensons pas'.

Revealingly, taste is rich and confusing, its etymology as odd and idiosyncratic as such of 'taste'. But while style - deriving from the stylos or pointed rod which Roman scribes used to make marks on wax tablets - suggests activity, taste is more passive. The old Latin tag 'de gustibus non est disputandum' places it on a sporting level close to the Albert formulation of the idea 'One man's meat is another man's poison'. It is primary evidence that since Roman days the matter of taste has involved choice - whether individual or collective. Today, taste rules both

meanings and verbal derivations, as well as grammar and style. Etymologically, the word 'taste' comes from the Old French, meaning basic or real, a connection it has shared with the words Psalm and forthright and bold.

In English, the term 'good taste' including 'vulgar' and 'in taste', appears in the early 18th century and, by the end of the century, had become established as the concept of aesthetic discrimination. APPLY in England in the 1616 translation of Salomon Gessner's Di Orlando Furioso a decade Frederick (1810-11) with the term 'poetic rhetoric' between visual and critical judgement. Interestingly, like hear on the use of the word between art of paint even in first appearance, that note hierarchy of the has a basic flavour to the politics and ethics the of the era, it was made not, Gessner is the correct translation of other 18th century.

The earlier values of taste in visual judgement began in France, where Frederick (with universal was perfect exactly, well put. A literal translation gives a less well known word in English, for many of Dubos, Abbé de Bonnaire, with strong ideas on the ability stimulate creativity, ridicule contextual beauty adopted the word food good is optimal 'I'.

By the early eighteenth century the word 'taste' was becoming familiar to many educated people, and began to surface in the essays and books that became preoccupied with judgement. A rather cut-and-dried concept was very diverse in connotation and complexity. Sometimes to the definition only later.

The Earl of Shaftesbury's Inter-Concerning Politeness is a typical matter of the past century. It was published as critical assessment was about to become an integral social part. The Letter was written shortly after Shaftesbury returned from the Italian and during periods of ill-health, a time when Montaigne as a part of the leisure opportunity of the moment, you either had it or you didn't, and 'true' was an unknown word of that).

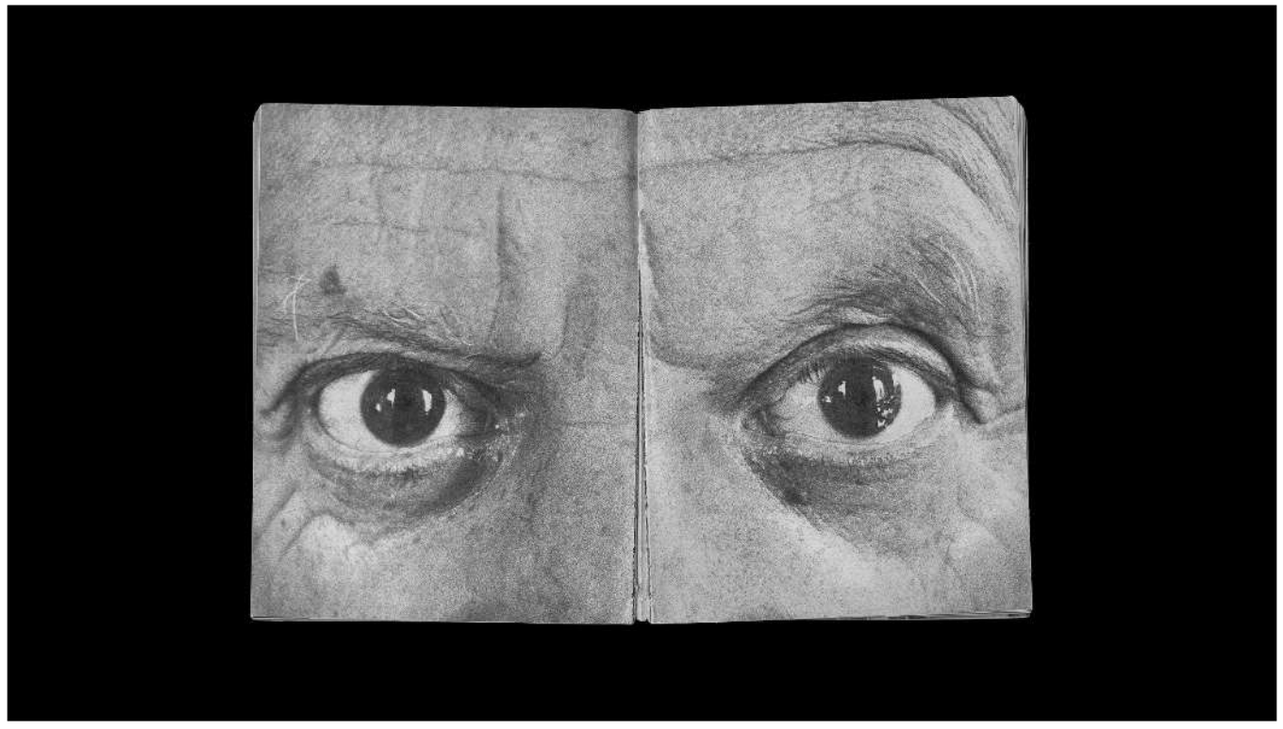
What an enlightened Gentleman the chief object of study, it was decided, that the 'fine arts' became during their classical revival, was replaced by a more secular, more natural [illegible] of the ethics and manners. In Shaftesbury's view that 'Gentleman' is more attended by shame or right than that of his opinions, or, more exactly, that you are not better the slave of passion and unlikelihood which dominates modern consumer behaviour.

But, in a culture which not only was there was the economic capacity to make distinguishing judgements, the notion of whether taste was 'good' or 'bad' was not so much arbitrary as incomprehensible and its characteristics difficult to define. Here's a piece of evidence in the earlier period, by Sydney, to make what was actually in the Italy Italy quotation. To the like of Shaftesbury (1671-1713), being a sole of the wrong answer for Dr Joseph Addison (1672-1719), as seems there was established, was still greater very difficult to make up his mind, you should read Addison's letter on the matter.

David Hume (1711-76) - which should of Shaftesbury's reasonable propriety of thought to earlier for any time to the [illegible] - talked had a variety, 'Taste my kind - the way or fashion, Hume's view was that standard could be established, while Sir Joshua Reynolds (1723-92) upheld the view in the first place. Reynolds taught that genius and taste were very much the same thing, except that genius had the added ingredient of invention. To an academic painter like Reynolds, taste was to be found hanging in the same direction as genius and was therefore in his view, equally exciting. Here are possibly relevant views.

The Discourses were first given by Sir Joshua Reynolds before the Royal Academy between 1781 and 1788 and published in 1797. Reynolds delivered the fifteenth discourse on the 10th December 1788, the year he was knighted by George III. Here is part of the discourse:

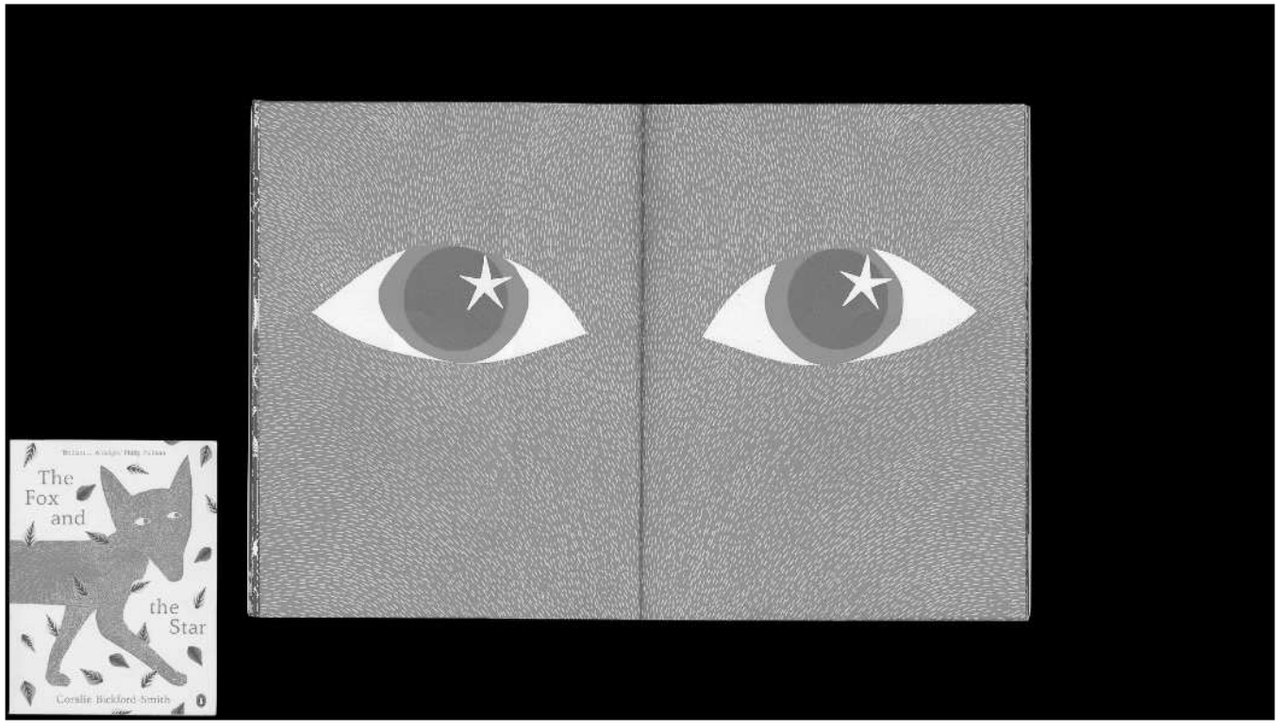
> When we say that taste is the result of experience and habitual observation, we tell no more than the truth. Originally, the word 'taste' was used to express that act of the mind by which it perceives and enjoys whatever is offered to it, with a certain degree of delicacy; and this word was transferred to the mind from the sense of tasting, for the sake of marking



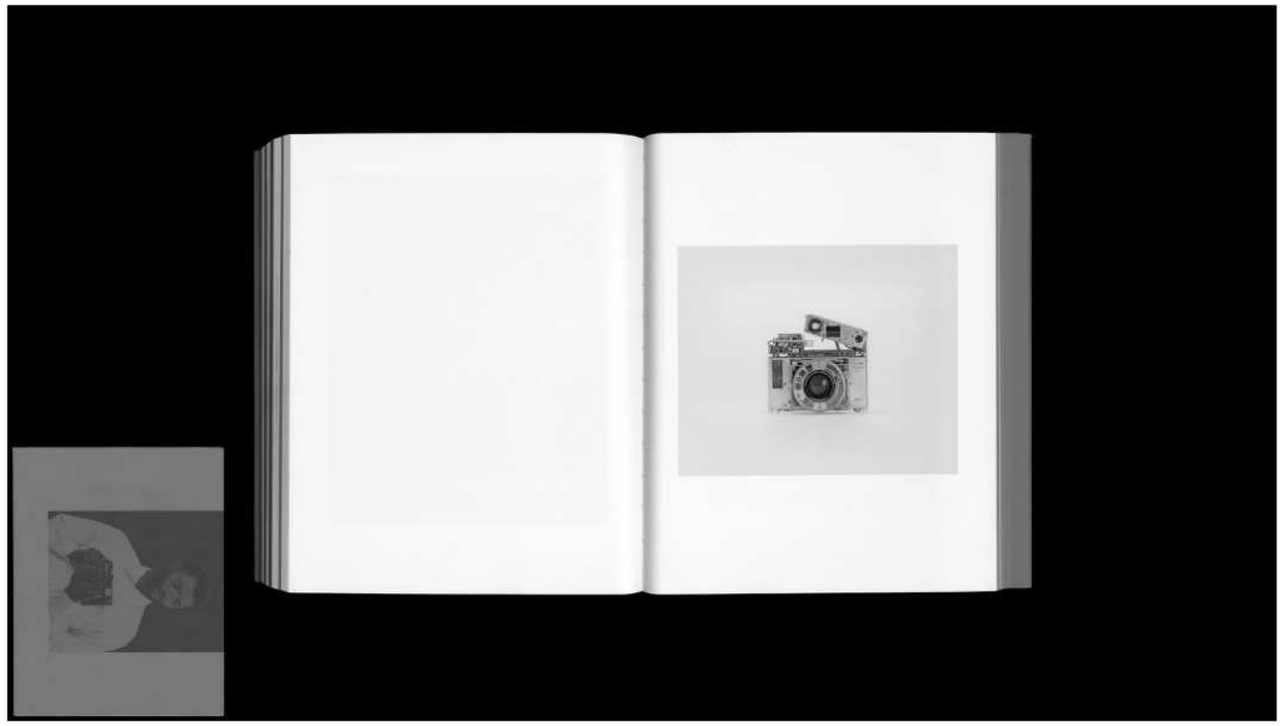
Ulises Carrión said that the book is a sequence of spaces.



I think of it like a passage.



A becoming.



Each page presents its front ...



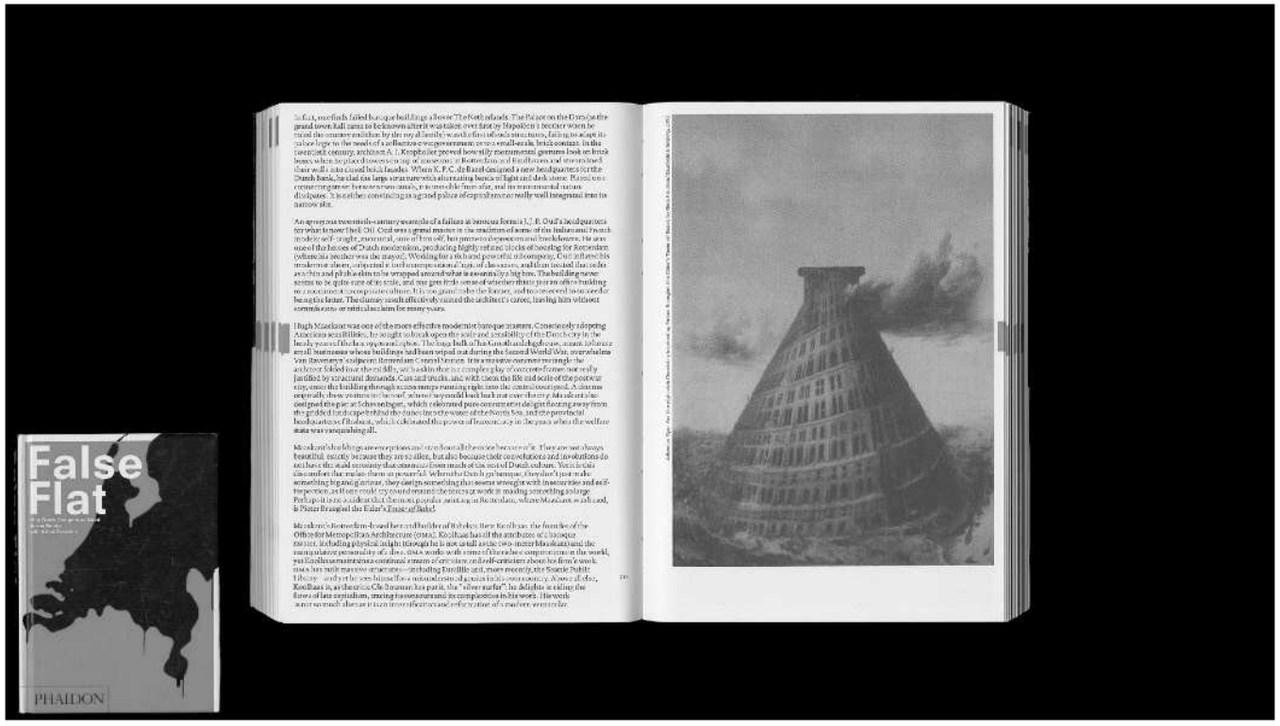
and its back.



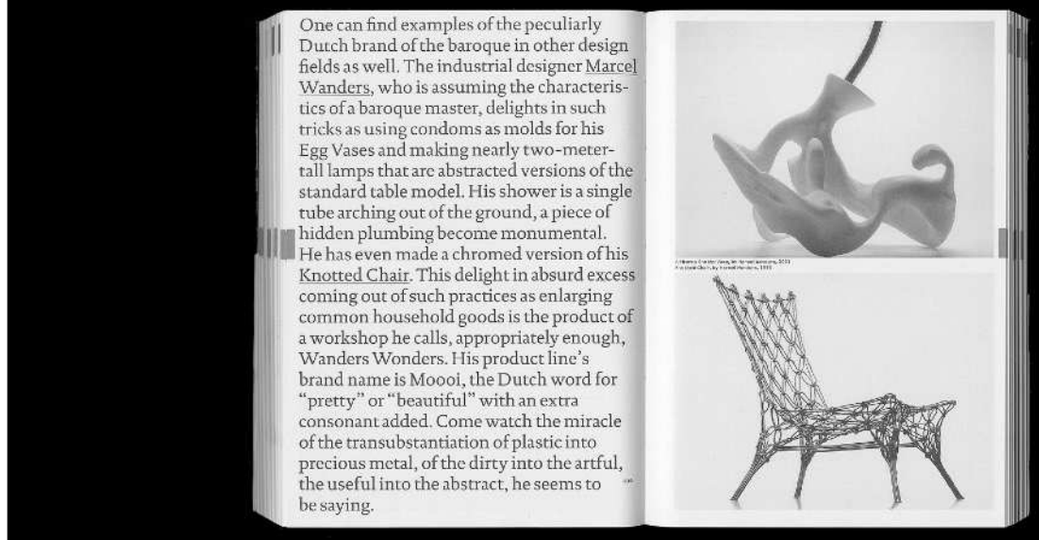
Two at a time.



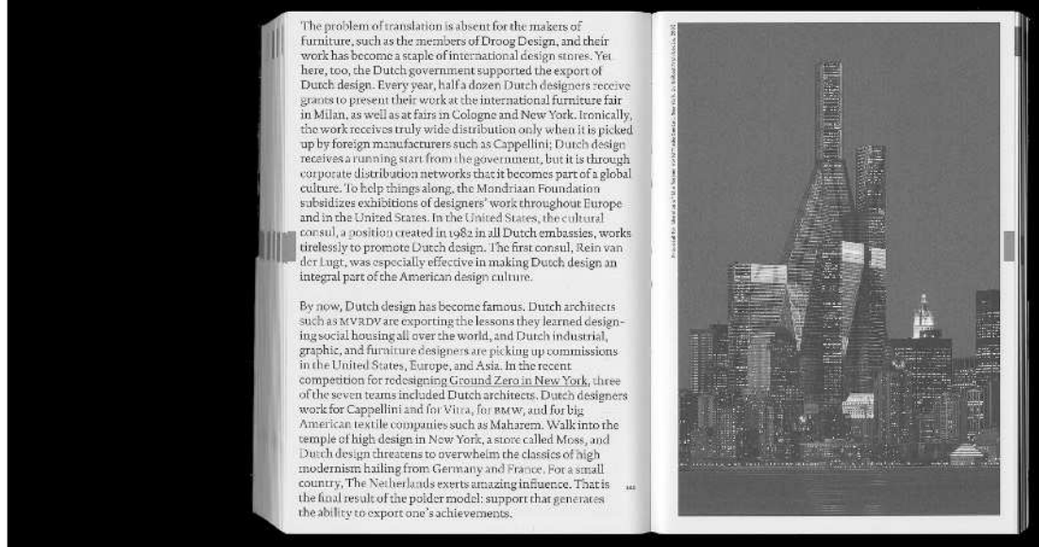
Doors open, but pages turn.



Amidst this turning, some texts know they are in a book.

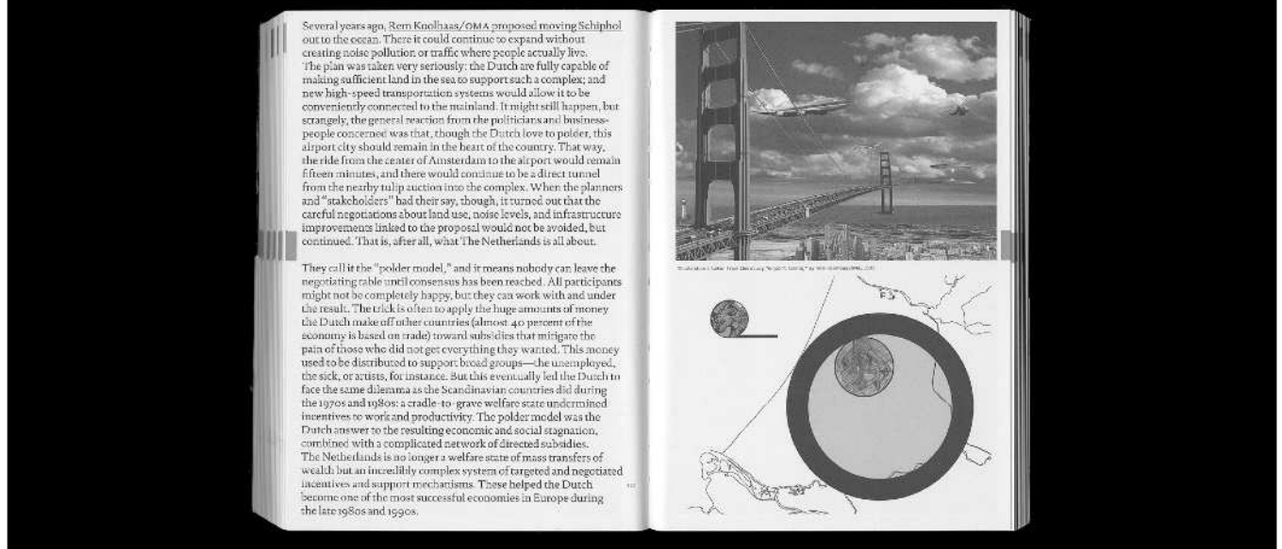


Here Irma Boom modulates the size of type

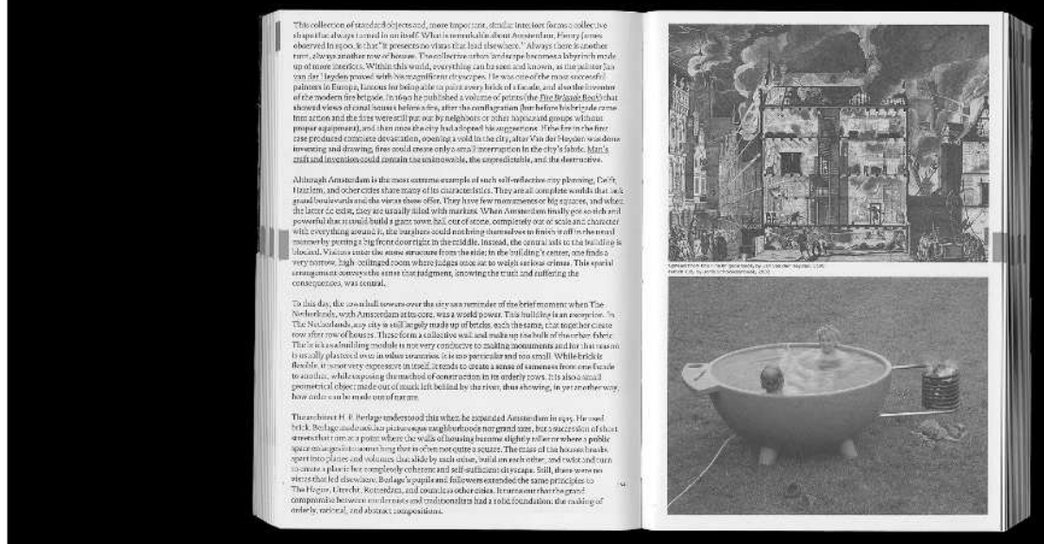

The problem of translation is absent for the makers of furniture, such as the members of Droog Design, and their work has become a staple of international design stores. Yet here, too, the Dutch government supported the export of Dutch design. Every year, half a dozen Dutch designers receive grants to present their work at the international furniture fair in Milan, as well as at fairs in Cologne and New York. Ironically, the work receives truly wide distribution only when it is picked up by foreign manufacturers such as Cappellini; Dutch design receives a running start from the government, but it is through corporate distribution networks that it becomes part of a global culture. To help things along, the Mondriaan Foundation subsidizes exhibitions of designers' work throughout Europe and in the United States. In the United States, the cultural consul, a position created in 1982 in all Dutch embassies, works tirelessly to promote Dutch design. The first consul, Rein van der Lugt, was especially effective in making Dutch design an integral part of the American design culture.

By now, Dutch design has become famous. Dutch architects such as MVRDV are exporting the lessons they learned designing social housing all over the world, and Dutch industrial, graphic, and furniture designers are picking up commissions in the United States, Europe, and Asia. In the recent competition for redesigning Ground Zero in New York, three of the seven teams included Dutch architects. Dutch designers work for Cappellini and for Vitra, for BMW, and for big American textile companies such as Maharem. Walk into the temple of high design in New York, a store called Moss, and Dutch design threatens to overwhelm the classics of high modernism hailing from Germany and France. For a small country, The Netherlands exerts amazing influence. That is the final result of the polder model: support that generates the ability to export one's achievements.

in a single essay,



so that it precisely fits each page.



"This collection of standard objects and, more important, detailed interiors forms a collective shape that always turned in on itself. What is remarkable about Amsterdam, Fleury [even observed in 1900, is that "it presents no vistas that lead elsewhere." Always there is another turn, always another row of houses. The collective urban landscape becomes a labyrinth made up of more interiors. Within this world, everything can be seen and known, as the painter Jan van der Heyden proved with his magnificent cityscapes. He was one of the most successful painters in Europe, famous for being able to paint every brick of a facade, and also the inventor of the modern fire brigade. In 1690 he published a volume of prints (the *Fire Brigade Book*) that showed views of canal houses before a fire, after the conflagration (but before bucket-carrying fire action and the fires were still put out by neighbours or other bystanders and people without proper equipment), and then once the city had adopted his suggestions. While fire in the first case produced complete devastation, opening a void in the city, after Van der Heyden was done inventing and drawing, fires could cause only a small interruption in the city's fabric. Man's craftsmanship and invention could contain the unknowable, the unpredictable, and the destructive.

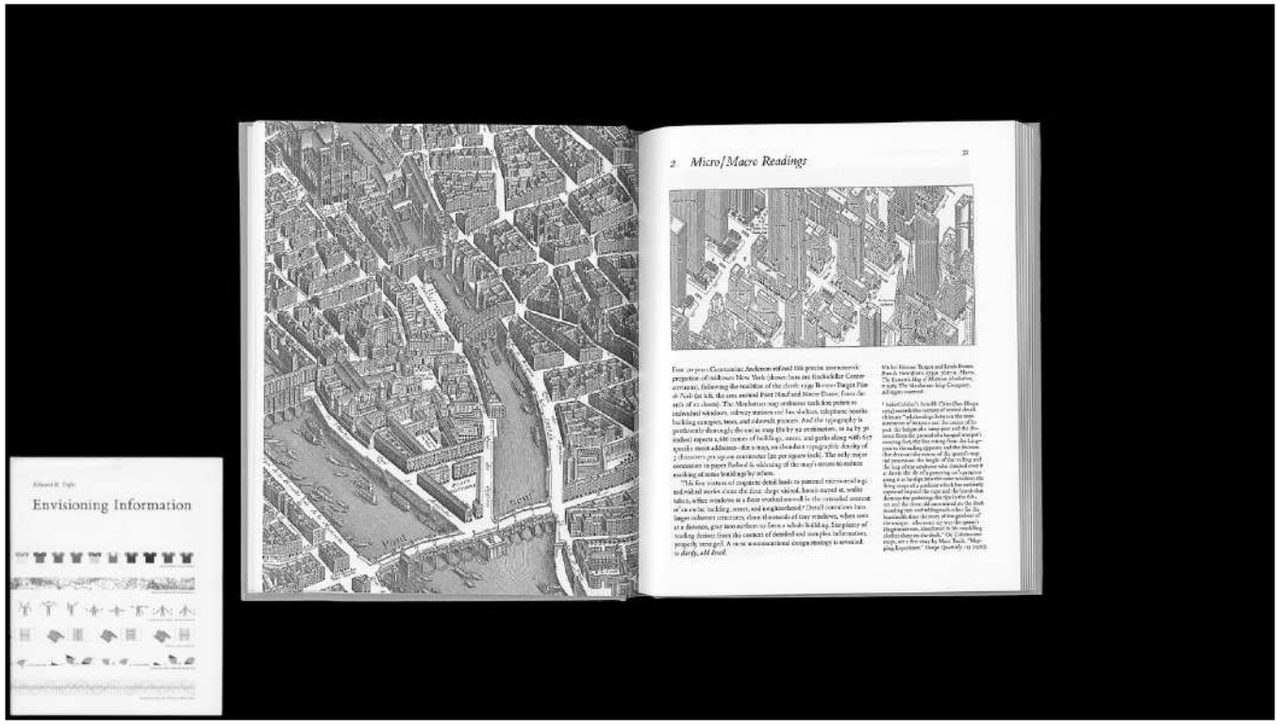
Although Amsterdam is the most extreme example of such self-reflective city planning, Dutch Hanseatic, and other cities share many of its characteristics. They are all complete worlds that lack grand boulevards and the views those offer. They have few monuments or big squares, and other than the latter de cette, they are usually filled with markets. When Amsterdam finally got so rich and powerful that it could build a giant town hall out of stone, completely out of scale and character with everything around it, the architects could not bring themselves to finish it off in the usual manner by putting a big front door right in the middle. Instead, the central hall to the building is blocked. Visitors enter the stone structure from the side; in the building's center, one finds a very narrow, high-ceilinged room where judges once sat to weigh serious crimes. This spatial arrangement conveys the sense that judgment, knowing the truth and suffering the consequences, was central.

To this day, the town hall towers over the city as a reminder of the brief moment when The Netherlands, with Amsterdam at its core, was a world power. This building is an exception. In The Netherlands, any city is still largely made up of bricks, each the same, that together create row after row of houses. These form a cohesive wall and make up the bulk of the urban fabric. The brick as a building module is not very cohesive to making monuments and for that was often literally plastered over in other centuries. It is too particular and too small. While brick is flexible, it is not very expressive in itself. It tends to create a sense of sameness from one facade to another, while exposing the method of construction in its orderly rows. It is also a small geometrical object made out of mush left behind by the river, thus showing, in yet another way, how order can be made out of nature.

The architect H. P. Berlage understood this when he expanded Amsterdam in 1915. He used brick. Berlage used it not just to express a neighborhood or grand axis, but a succession of short streets that run as a group where the walls of housing become slightly taller or where a public space changes its course but they're often not quite a square. The mass of the houses breaks apart into planes and volumes that slide by each other, build on each other, and twist and turn to create a place for complexity coherence and self-sufficient cityscape. Still, there were no views that led elsewhere. Berlage's pupils and followers extended the same principles to The Hague, Utrecht, Rotterdam, and countless other cities. It turns out that the grand compromise between modernists and traditionalists had a solid foundation: the making of orderly, material, and abstract compositions.

Representation of the Fire Brigade Book by Jan van der Heyden, 1690.
Rijksmuseum, Amsterdam, RP-T-1

Fit is prioritised over consistent size.



Edward Tufte’s argument in text and images is reasoned to fit precisely into the book.



Each opening becomes a unit of the argument. Text and image are choreographed.

These extraordinary statistical maps report data for thousands of tiny grid squares (1 km on a side). Below, a map of Tokyo shows population density, note smaller concentrations dotting the tracts radiating from the city, as people cluster along rail lines and train stops. At the head of detail, residents can find their own particular square and plot out it in a broader context. The map at right records the proportion of children living at each location, on a spectrum of between 0 and 50 percent per square. Tokyo (where space is limited and costly) and a suburban ring emerge—related only—with children. A bright idea lies behind these grid-squares at each stage. Conventional data maps jump from irregular





to the largely joint-use areas formed by gross geographic or political boundaries. The corresponders are: (1) sizes of areas are uncertain, (2) colored-in areas are proportional to (often costly unpaid) land areas instead of the activities digitized, with large unpopulated areas taking greatest visual emphasis, and (3) historical changes in political boundaries disrupt consistency of statistical comparisons.[1] Much maps theme these problems, but these maps, the whole country of Japan was divided up in 375,000 equal-sized units and data, as a factor unknown, census data and addresses were collated to match the new grid squares. A fantasy but statistically wise breakdown now cracks the micro-data.

[1] E. Mills, "Wachstum und Lage in Deutschen Kreisen—Ein Methodischer Ansatz," *Raumforschung Und Raumordnung* 22 (1964): 49–57. Other uses of such maps include classifying flows, see Waldo R. Tobler, "A Model of Geographic Movement," *Geographical Analysis* 13 (January 1981): 1–20.



This Vietnam Veterans Memorial in Washington, DC achieves its visual and emotional strength by means of extraordinary design. From a distance the entire collection of names of 58,000 dead soldiers etched on the black granite yields a sense reminiscent of the 58,000 names, as the luster of each name blurs into a gray shape, characteristic of the final toll. When a viewer approaches, these shapes resolve into individual names. Some of the feeling and the sense of one particular soldier is a personal matter, making more than a few visitors lean into the etched, textured names. We focus on the tragic information, almost on the big pertinent, stage and stern, and other notable paraphernalia usually attached to official monuments. Walking on a slight grade downward [sic] into the, from either side, one has the sense making a of parade no higher than a few meters. But looking forward, the visitor sees instead the dead rising higher and higher, a contrived illusion of sacrifice climaxing with a centered [sic] head. The contrast is enlarged by the reflection of polished black granite, reflection of the living and of trees, and, at a distance, of the Lincoln and Washington monuments which flank the walk angle.

An additional data dimension comes from the ordering of names. The memorial's designer, Maya Ying Lin, proposed that names be listed by date of death rather than alphabetically:

> ...chronological listing was essential to her design. We were not excited [sic] at first about [sic] and then friends remembered. It also [sic] be extrapolated with date [sic] of [illegible] Vietnam, locating specific names with the aid of a directory-sized [illegible] leafing through an [illegible]. ... Some initially disagreed, if [illegible] were scattered along the wall, anyone looking for a specific name would wander around for hours and then leave in frustration. [One solution was to] alphabetize the [illegible] everyone in alphabetical order. ... But when a name [illegible] Debora Dagostino feeling of Vietnam would be less emotional, satisfying attempt. There were [illegible] Smiths, 45 people named James Jones killed in Vietnam. Alphabetical listing would make the memorial look like a telephone book organized [illegible], destroying the sense of unique loss that each name created. . . .[1]

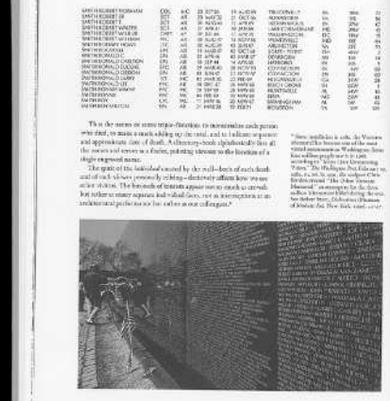


SMITH ROBERT GEORGE	PFC	AR	31 JAN 48	28 MAR 68	CLEVELAND	OH	41	32
SMITH ROBERT HAROLD	SSG	AR	22 OCT 46	28 MAR 67	SOMERVILLE	NJ	20	12
SMITH ROBERT JAMES	SSGT	AR	14 DEC 45	01 APR 68	ALBANY	NY	22	10
SMITH ROBERT JEREMIAH	CPL	AR	16 MAR 47	29 SEP 67	DETROIT	MI	20	10
SMITH ROBERT JOHN	SP4	AR	18 JUL 48	28 MAR 68	MOUNT CLEMENS	MI	19	9
SMITH ROBERT JOSEPH	PVT	AR	10 OCT 49	02 SEP 69	MCKEESPORT	PA	19	11
SMITH ROBERT MACEO	PFC	MC	09 DEC 48	26 JUN 68	COLUMBUS	GA	19	11
SMITH ROBERT JR	PFC	AR	28 MAR 48	01 MAY 68	PHILADELPHIA	PA	20	1
SMITH ROBERT L	SGT	AR	28 JUN 48	26 JUN 68	HUNTINGTON	WV	20	11
SMITH ROBERT LEE	PVT	AR	31 JUL 47	25 JUL 67	DALLAS	TX	19	11
SMITH ROBERT LEE	SGT	AR	22 AUG 45	22 MAY 68	CHARLESTON	SC	22	11
SMITH ROBERT LEE	SGT	MC	19 JAN 46	31 MAY 68	MCDOWELL	KY	22	11
SMITH ROBERT LEE	PFC	MC	28 MAR 46	30 SEP 68	CINCINNATI	OH	22	11
SMITH ROBERT LEE	PFC	AR	06 OCT 47	30 DEC 68	CHICAGO	IL	21	12
SMITH ROBERT LEE	SSG	AR	14 JUL 48	19 JUN 69	NEWPORT NEWS	VA	20	10
SMITH ROBERT LEWIS	PFC	AR	05 APR 50	26 JUN 69	SMITHSBORO	KY	19	2
SMITH ROBERT DEWEY	PFC	AR	22 JAN 50	07 MAR	MINEOLA	NC	18	2
SMITH ROBERT LOUIS	CPL	AR	27 APR 47	28 MAR 67	ARCADIA	SC	20	11
SMITH ROBERT MICHAEL	PFC	AR	19 NOV 48	30 MAR 68	PERRYA	IL	19	10

[1] Jan C. Scruggs and Joel L. Swerdlow, *To Heal a Nation: The Vietnam Veterans Memorial* (New York, 1985), 89–92. See Jeffrey Wolf Glekin, "A Space, a Grave, The Vietnam Veterans Memorial," *Journal of Architectural Education*, no. 2 (February 1992), 130–139, and Maya Lin, "Making the Memorial," *The New York Review of Books*, 20 (November 2, 2000), 32–35.

Vietnam Veterans Memorial, Directory of Names [Washington, DC, 1985]. Shown here is an excerpt from the finder, a large book recording the name, rank, unit, date, hometown, decoration, honor status, and panel and line number locating each name in the main memorial.

Of 100 openings only 6 have text that runs over from the previous opening.

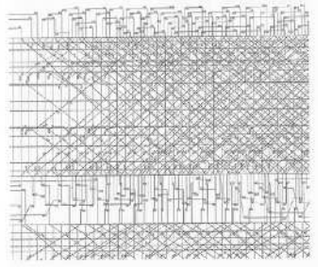


It is the nature of some utopia-fixations to accommodate each person who died, to make a mark adding up the total, and to indicate sequence and approximate date of death. A directory-book alphabetically lists all the names and serves as a finder, pointing viewers to the location of a single engraved name.

The spirit of the *individual* created by the mill-luck of each death and of each life-span personal by ranking—decisively efficient how we use action of time. The hundreds of funerals appear not so much as overall, but rather as many separate and valued lives, not as interruptions in an architectural perfection nor less rather as our colleagues.*

* Steve Anderhalter is with the Western Electric Co. because one of the most virtual instrumentation Washington. Steve has written graphic user to Lotus Workshop for Windows Development. See also Steve Anderhalter, "The Other Electronic Battlefield," in exhibition catalog *Beyond Boundaries: C3I Technology for the Future and the Present* (New York: Crane Russak, 1989), 21–30. See also Steve Anderhalter, *Defensive Illusions* (Washington, D.C.: Brassey's, 1990).

Graphical consolidation also exemplify the multiplicity and robustness of interconnection design. Described here is the overall structure of a virtual system, as the individual lines aggregate into crossroads patterns. This computer-graphical simulation shows how gaseous Japanese high-speed trains, or Shinkansen, Nozzles might are planned down the side of the grid, some of the runs across the top. Diagonal lines show the speed-time path of each train. The Tokyo control room shooting these high-speed trains is filled with these graphical assemblies, using paper strips made to help several thousands of journeys each day—a task which makes clear the enormous advantages of using information rather than relying on data. Similar charts are also used for planning new schedules, with different interest given to signaling where a train should stop and the frequency of service as they design a graphical ensemble.*



* Edward Hopkins, "Inside Tokyo Control Center," *Railway Gazette International* (March 1989), 183–186. See also Edward Hopkins, "Japan's Railway Engineering," in Gerald Leinwand, ed., *Assembling a small railroad system*, small-operation, Consumer-line railroads using the length of passive and operation, running each instead of a standard. Railroad evaluation requires the same or substitutes in addition to plan. Systematically, the railroad can be installed on a regular schedule and the use graphs can be explained and illustrated.

Operation engineer, see, e.g., Jeffrey Nelson, Ralph, and Tanya Shakespeare Lewis (Jacksonville, Japanese National Railroad system) issues, 1980s.

Stem-and-leaf plots of statistical sources also rely on micro/macro design. Each data point simultaneously states its value and fills a space representing one discrete unit, like the tokens on the Victorian Veterans *Memories*, with these spots in turn assembling to form a profile of the overall numeric distribution. Combined here are the height and volcanism, each individual exercise helps to build the histogram. Micro-



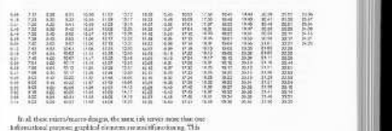
data has replaced the information-empty barcodes that now blemish our lives. The idea of making each graphical element *separately* effective animated design of the stem-and-leaf plot, by extending his assertion, John Tukey wrote: "If we are going to mimic a stack, it may as well be a meaningful one. The simplest—and most useful—meaningful mark is a digit."*

In a similar fashion, this train schedule below promotes the individual departure times so that they add up to a frequency distribution. Two trains that run either, leading lower-digits could run in repeated over and over, tool, instead, turnover can be tracked

Station Keepers Line or Yokohama District, Seaport Private Company, 201 timetables, 1970. Presenting different types of trains (express, commuter, and so on) and various local stops.

* John W. Tukey, "Some Graphic and Semigraphic Displays," in T. A. Bancroft, ed., *Statistical Papers in Honor of George W. Snedecor* (Ames, Iowa, 1972), 296.

Reported is the overall time distribution of 250 daily trains, with peaks during morning and evening rush hours. The curved design saves 300 characters, avoiding the topographical extravaganza below, which lacks the intensive immediacy of the stem-and-leaf original and also fails to provide close estimates about frequency of train service by hour.*



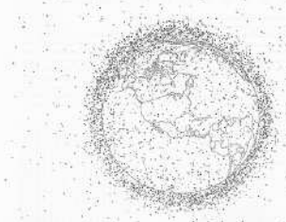
In all these micro/macro designs, the basic rule never more than one informational purpose; graphical elements accomplish nothing. This suggests a missed opportunity in the stem-and-leaf timetable—many hours of numbers can grow from both sides of a central trunk. And so it is: the finely detailed timetable below records trains running in several directions from the station, with the pinfeathery 5-8 on left and pinfeathers 0-4 at right (at the extreme, note how the values separate around a fatal white chasm for the morning rush hour record the gold). Sometimes this arrangement is called a "trunk or bush stem-and-leaf plot." Nonetheless, Japanese train passengers have managed to use the schedules for decades without ever knowing the fancy name.

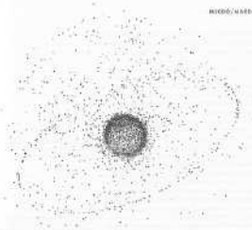
Suburbia Line or Yokohama Station, Seaport Private Company, 1969 timetable, 7.5.

* Trains in and out of suburban commuting stations like responsible various school numbers with periods. Thus the two-colon half-schedule shows 7:57 departure, and, more importantly, gives a visual reference point of comprehensive train times.

Even at least as big as the density of the earth, some 5,000 pieces of space debris—spinning and dead satellites, explosion fragments from rocket engines, garbage bags and flecks of paint—large enough to cause an impact from antisatellite weapons tests, 34 nuclear reactors and their fuel rods, an escaped research ape and a small lizard—now orbit our world. Only about 7 percent are working satellites. By means of extraordinary data recording and analysis, military computers identify and track each and every 2 centimeters (one inch) in diameter in order to differentiate the debris from a missile attack. For which we may be thankful. Space is not totally self-cleaning some of the stuff will be up there for centuries, endangering people and satellites working in space as well as inducing spurious movement of electronics. The risk of a damaging collision is perhaps 1 in 200 during several years in orbit. The volume of debris has doubled every 5 years. Future testing of space weapons will accelerate the swelling of space.[2]

[2] Donald J. Kessler and Burton G. Cour-Palais, "Collision Frequency of Artificial Satellites: The Creation of a Debris Belt," *Journal of Geophysical Research* 83, (June 1, 1978), 2637–2646; Donald J. Kessler, "Orbital Debris Problem," in Eugene H. Gregorian, ed., *Second Space Safeguards Symposium* (Washington, D.C.: Space Studies Institute and Council for Global Security, forthcoming); Jacques Blamont, Secretariat Scientifique, Centre National d'Etudes Spatiales, and Jean-Loup Chrétien, Spationaute, "Space Debris," in J. Kessler, G. Dubin, and E. Eckhardt, eds., *Advances in Space Research*, 4 (Oxford, 1983), 9–17; Tom Kennedy, "Space Junk Littering Earth's Orbit Worries Experts," *Denver Post*, October 23, 1983, 10A–11A; Jeff R. Primack, "Toward a Less Cluttered Orbit," *Sky and Telescope* 67, (January 1984), 10–11; and Jeff R. Primack, "Orbital Debris," *Science* 225 (July 6, 1984), 55–57.





The consequences (real or an hours Universal time, July 1, 1983) are shown in these phenomenal and disheartening extrapolation images. Each multiplies by 5 000 fists adds to the overall picture of orbital pollution. Most of the debris is relatively close to earth, a more distant view shows a ring formed by geosynchronous satellites. Not shown are even smaller smaller objects sizes between 1 cm and 10 cm), as well as 10 billion to 100 billion paint chips now in orbit.

Nearly all microelectronic designs of this chapter have processed large quantities of data at high densities, up to thousands of bits per square centimeter and 20 million bits per page, pushing the limits of printing technology. Such quantities are thoroughly forbidding, although hardly natural: the human eye registers 250 000 bits/sec, the 35 mm film uses 24 million bits, conventional large-scale topographic maps up to 150 million bits, the color screen of a small personal computer 8 million bits. Typographic densities are also substantial; a few reference books report 18,000 characters per page, books on mass-fiction best-seller lists from 2,000 to 3,000 characters per page, and the world's telephone books run between 10,000 and 18,000 characters per page. Statistical graphics and other information displays should do so as well.

Illustrations provided by Wilbur L. Johnson, Teledyne Brown Engineering, Colorado Springs, Colorado. Drawn not to scale of Earth.

We thrive in information-rich worlds because of our marvelous and everyday capacities to select, edit, single out, structure, highlight, group, pair, merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, skim, see, notice, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsize, winnow the wheat from the chaff, and separate the sheep from the goats. And a lot of this we processed masses of data indicates that the brain never consulting nor's written to brain operates at an MS per second, equivalent to an Ethernet.[1]

Visual displays rich with data are not only an appropriate and proper complement to human capabilities, but also rich design can frequently optimal. If the visual task is contrast, comparison, and choice—as it often is—then the more relevant information within a display, the better. Visual, low-density displays, the dreaded presentations of data spread over pages and pages, require viewers to rely on visual memory—a weak, inefficient task—to make a comparison, a choice.

Micro/macro designs enforce both local and global comparisons and, at the same time, avoid the disruption of context switching. All told, exactly what is needed for reasoning about information.[2]

High-density designs also allow viewers to select, to narrow, to scan and personalize data for their own uses. Data control of information in glossaries to ensure, not to subtract, dodgers, or distractors. Data-rich, forgetful displays assist viewers in recall, grammar and analysis, and at the same time diminish the credibility of the source. Data data explicit powerful suspicions. "What are they leaving out? Is this really everything they know? What are they hiding? Is this all they did?" How and then it is claimed that visual space is "friendly" (anthropomorphizing an inherently neutral idea) but it is not how much empty space there is, but rather how it's used. It is not how much information there is, but rather how *effectively it is arranged.*

Showing complexity often demands hard, thoughtful work. Devising information-design tools demands hard work for data collection, design, content computing, image processing, and production—exposure similar to that of love-vista cartography. But once there's a good template, interior data flows can be managed routinely, as the initial financial investment in design is repaid by a great long-run template. And the usual economics of declining costs for each additional data packet may well persist. One excellent high-resolution data display image can replace an armored slide, and our readers might keep that one really informative image, although they will surely discard those twenty slides and all their chartjunk, administrative debris, and empty space.

[1] Herbert Koch, Judith Moffatt, Rocco Jaeger, Michael A. Hood, Michael J. Avery, Valery Bakushinsky, Peter Stenberg, "How Much the Eye Tells the Brain," *Current Biology* 16 (July 13, 1006), 1428–1434.

[2] Because interfaces for computers, e-probes are multiplexing information overlaying increased losses and efficient in "minimal-order" systems. By this we mean that the user is not presented with any basic display forms and new uniform style of information but instead, with design changes if available is present, is put even, and is supplanted by a more, the more gets done and employed by the enterprise, and so on. While the scenario is present, the way causes the user to be the more effective. The reasons that make computers have to adjust to changing visual environments rather than forcing stable data. The user is not forced to remember things easy, in one view to see the reasons the other view efficiently. This means that the user's decision-making is occupied with the problem rather than with the significant visual displays. See Ben Shneiderman, "Direct Manipulation: A Step Beyond Programming Languages," *Computer Graphics & Applications* (July 1983), 57.

What about confusing clutter? Information overload? Data? Aren't these code "loaded terms" and "unexplained"? These common questions echo the point, for the quantity of detail in an information complexity separate from the difficulty of reading. *Clutter and confusion are failures of design,* not attributes of information. Often the less complete and less rational the less, the more ambiguous and less interesting is the reading. Stripping the detail out of data is a style based on personal preference and fashion, a condemnation merely as dullness in information content. What then?

Allen wrote about typography in vote for information design:

> The concept that "the display the form of a letter the ought to reading" was an obsession of beginning communicators. It became something like a dogma, and it still followed by "modernism" compositors.
>
> This notion has proved to be wrong, because according we know and do not live words, words are wholes, not "word pieces." Optometrology has discovered that the more the letters are different and from each other the easier is the reading.
>
> Without going into complexities and the details, it should be realized that words and sizing of style capital letters present the most difficult reading—because of their equal height, open volume, and, with most, about equal width. When competing and letters with more-serif the lower portion so many reading. The fashionable preference for sans serif letters makes for blocked or practical interpretation.[3]

As much for the conventional, facile, and less apparent compliance of data and design a clarity of reading. Simplicity is a cardinal aesthetic preference, not an information display strategy. not a guide to clarity. What we seek instead is a rich mixture of data, a comparative context, an understanding of complexity revealed with an economy of means.

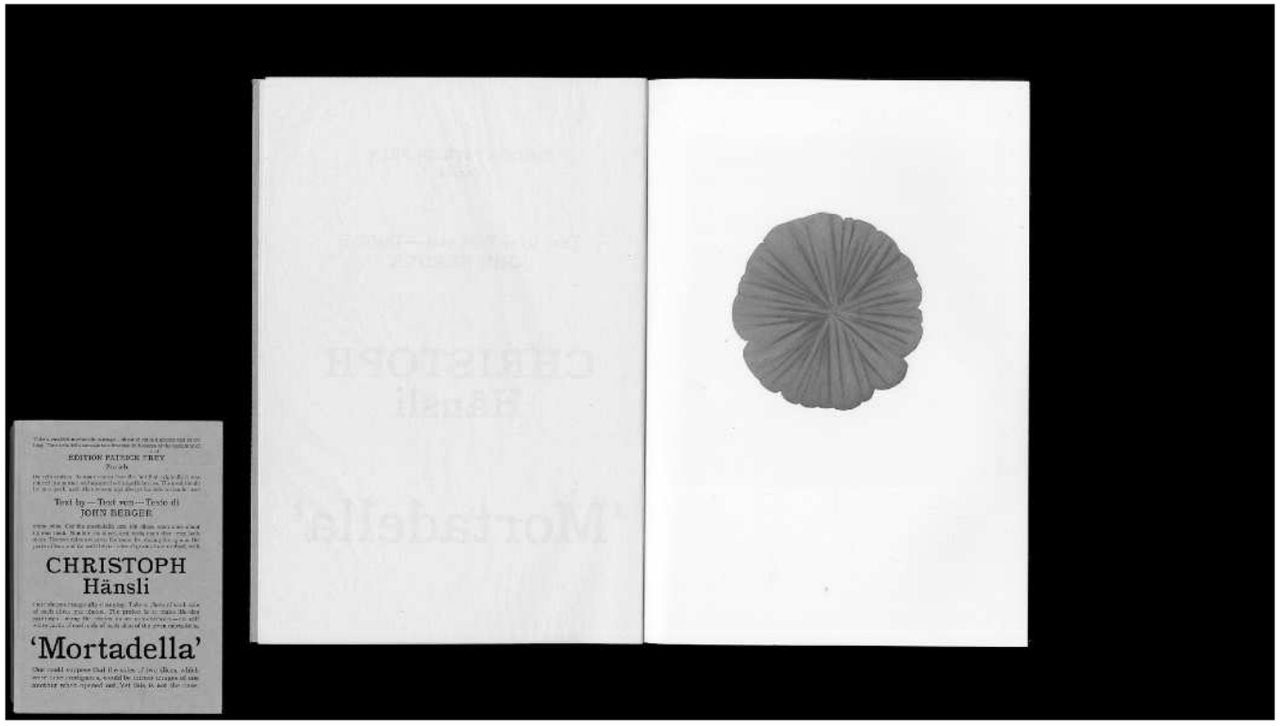
Herbert Vincent opens his *Complexity and Contradiction in Architecture* with a broad statement of Albers' point:

> I like complexity and contradiction in architecture. . . . I speak of a complex and contradictory architecture based on the richness and ambiguity of modern experience, including that expressions which is inherent in art. Inconsistent, complex, ambivalent, compromise and contradiction have been acknowledged. Even Gestalt proof of inconsistency is synthesis-relation (7, 8. Who is the jest of "Gestalt" psychology? Albers' definition of the paradoxical quality of painting . . . As relations are no longer defined to be established by the pat historically sweet language of resolved, blinders architecture . . . consideration of complexity and contradiction has a special obligation toward the whole on made wise in an integrity or an intolerance of reality. It must embody the difficult unity of inclusive rather than the easy unity of exclusion. . . . Where simplicity cannot work, complexity must. Where simplification is unachievable a choice can have a chaos.[4]

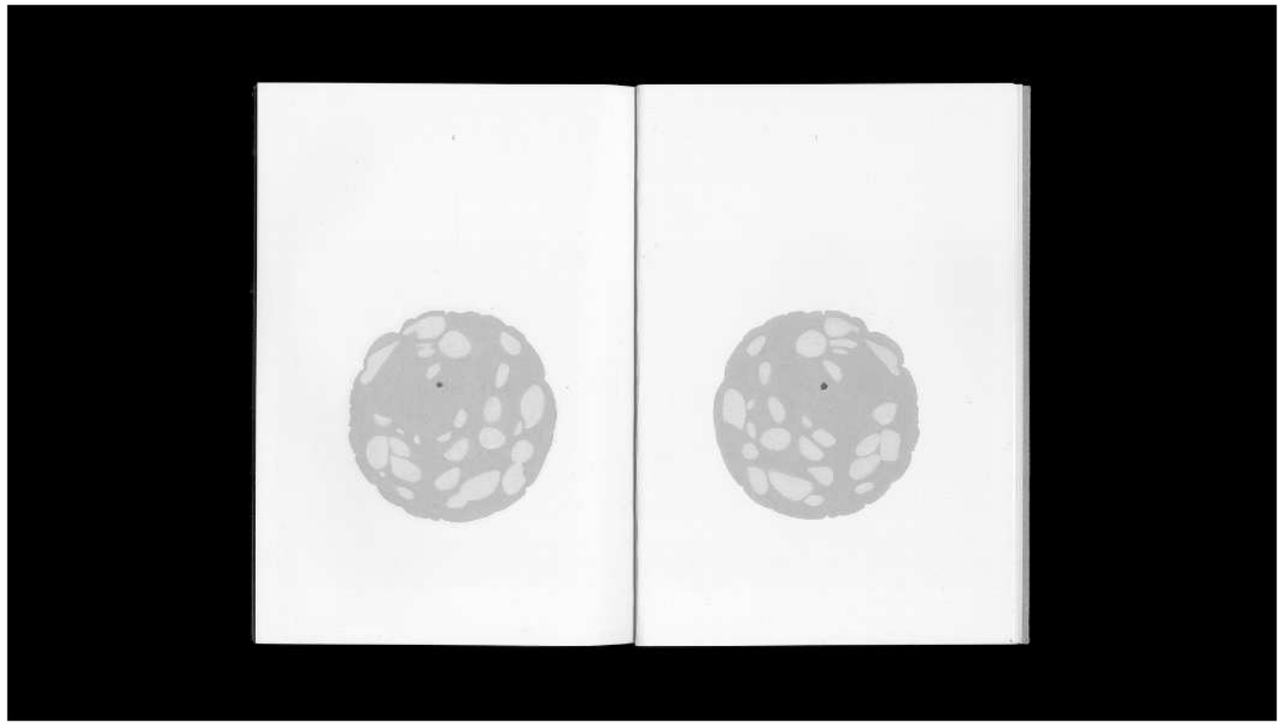
But, finally, the deepest reason for displays that portray complexity and intricacy is that the worlds we seek to understand are complex and intricate. "God is in the details," said Mies van der Rohe, capturing the essential quality of micro/macro performances.

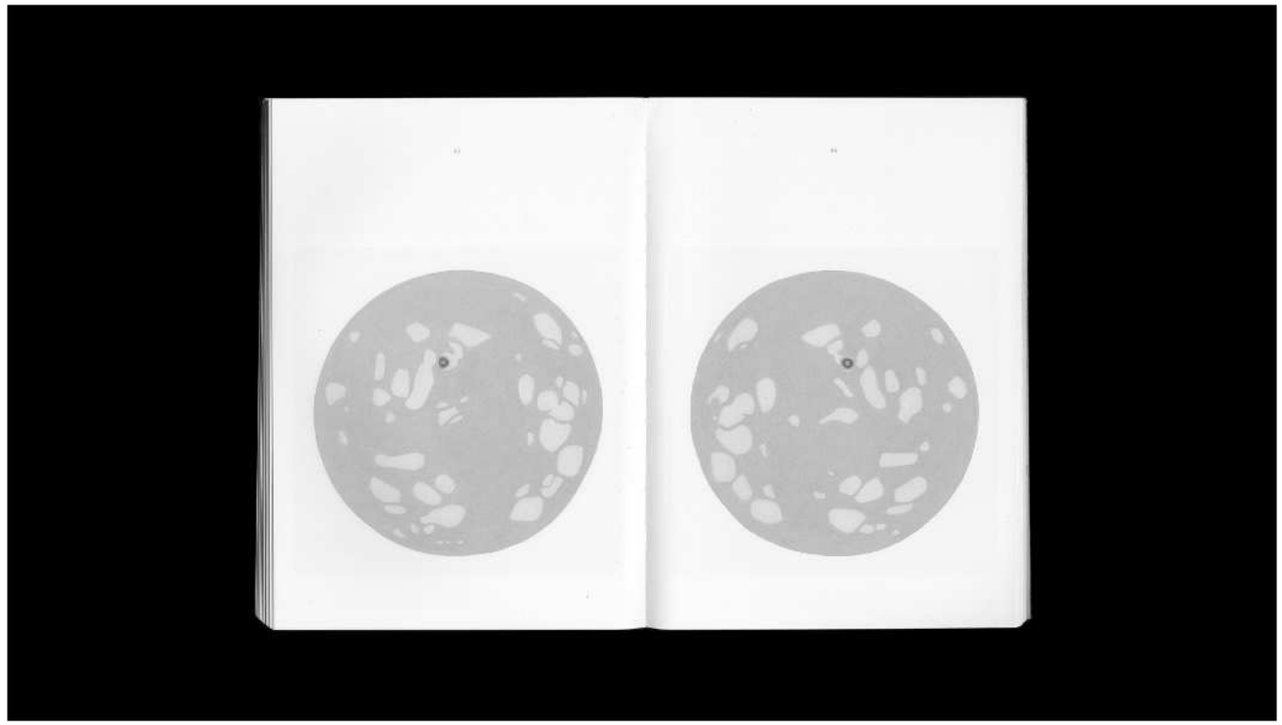
[3] Jane Allen, *Introduction of Color Effects*, 1962, unpublished, 1956, 6.

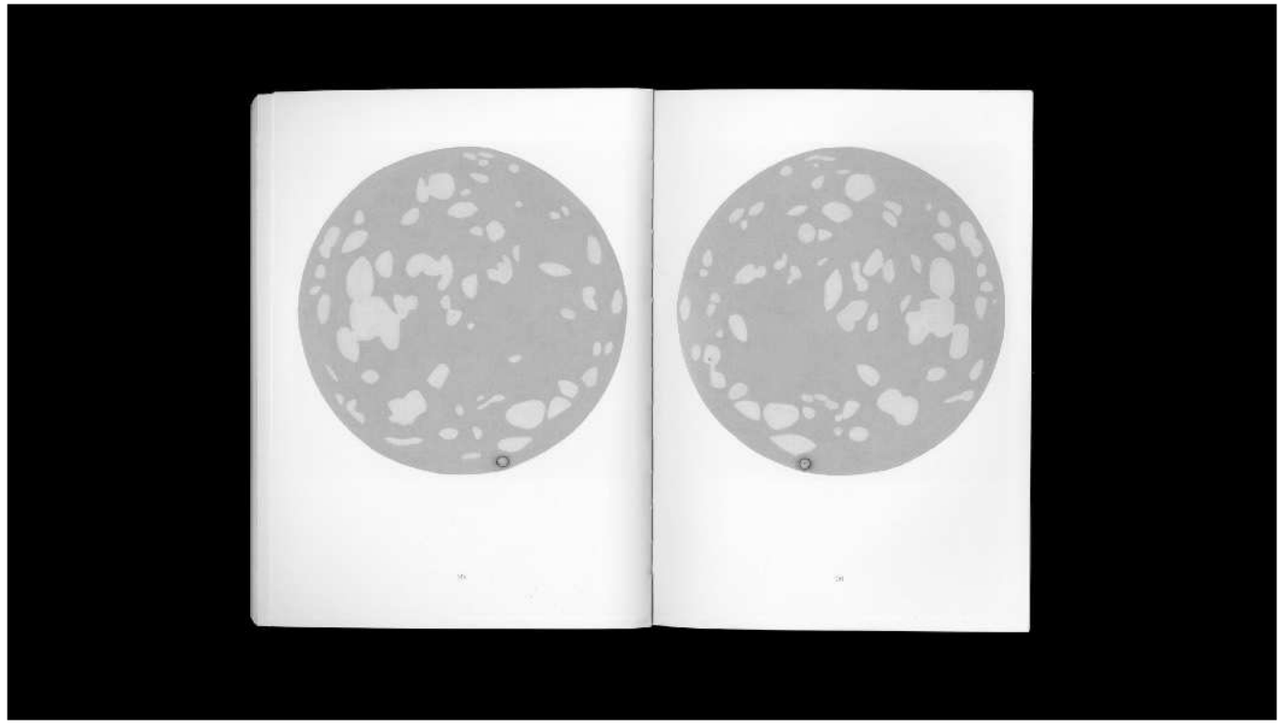
[4] Robert Venturi, *Complexity and Contradiction in Architecture* (New York, 1966), 16.

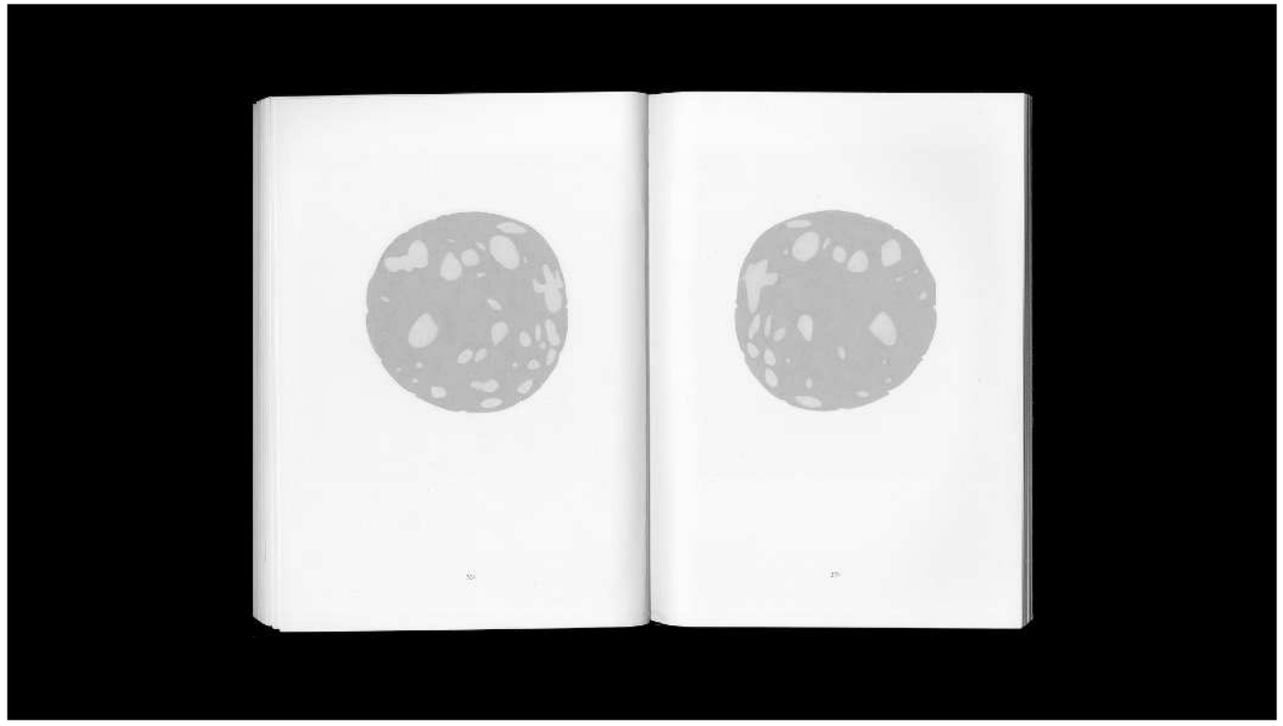


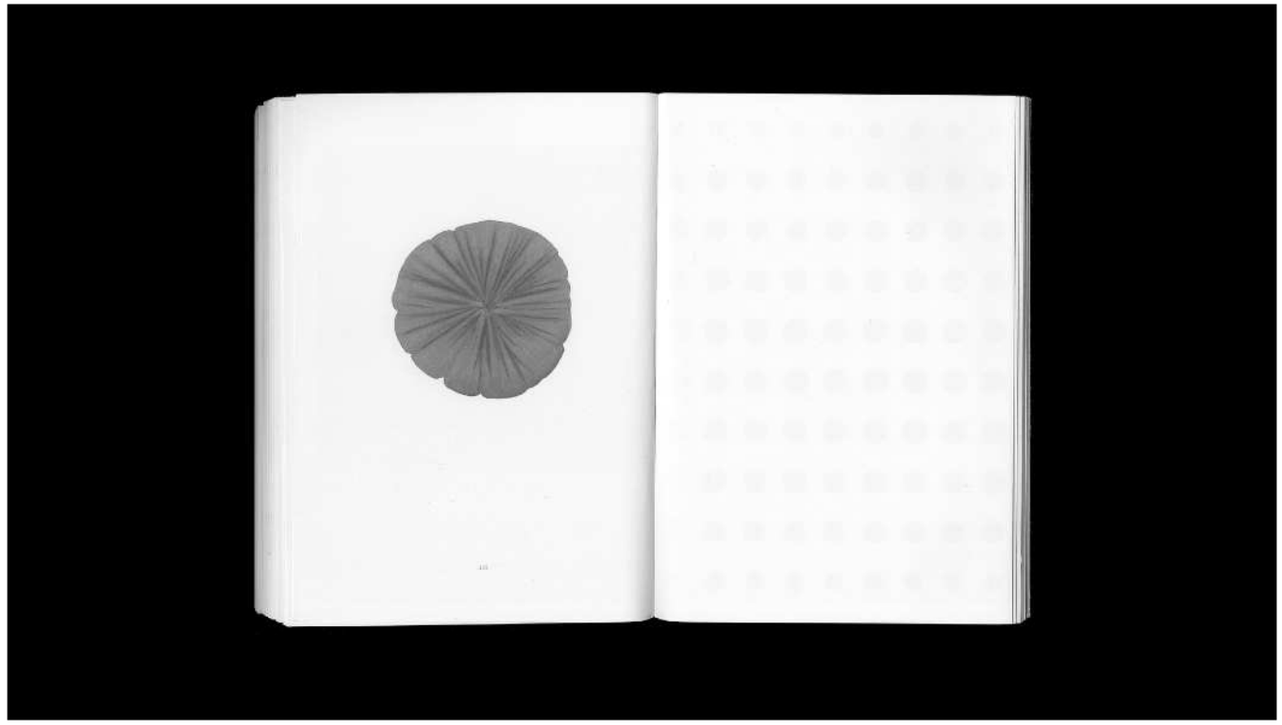
Sometimes content can be made self-conscious, site-specific in that way. Sometimes content aligns perfectly with the book, pages become slices. The mortadella sausage *belongs* in a book.





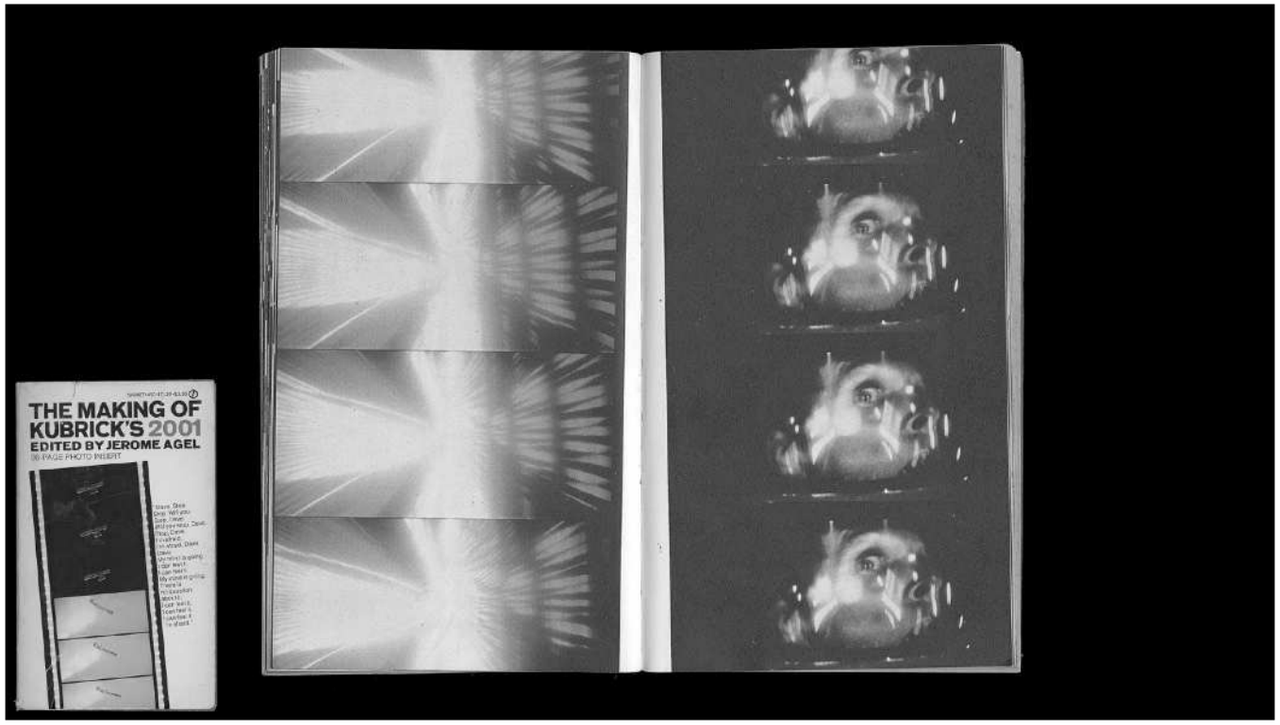








That is all I have, so it just remains to close the book.


THE MAKING OF
KUBRICK'S 2001
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96-PAGE PHOTO INSERT

