cs160.valkyriesavage.com

visual design & gestalt

July 21, 2015

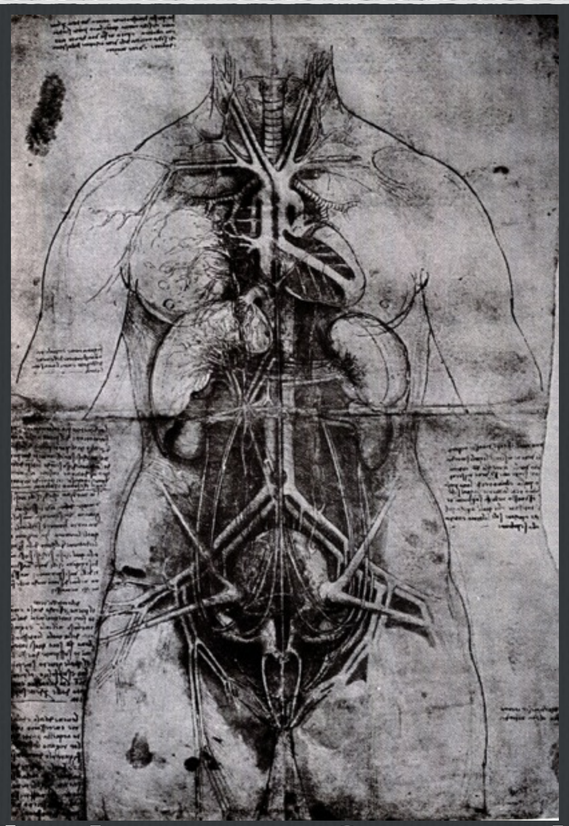
Valkyrie Savage

History of Graphic Design

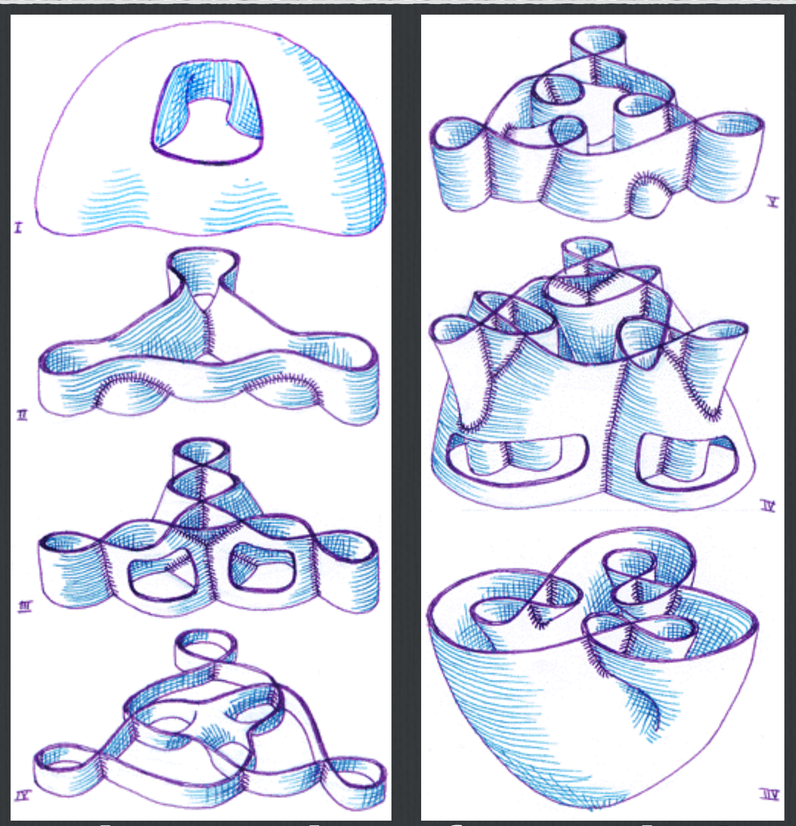
rvdwal on flickr

Graphic Design is about Communication

Graphic Design is about Illustration



Principal organs & vasculature
[Leonardo da Vinci ca. 1490]



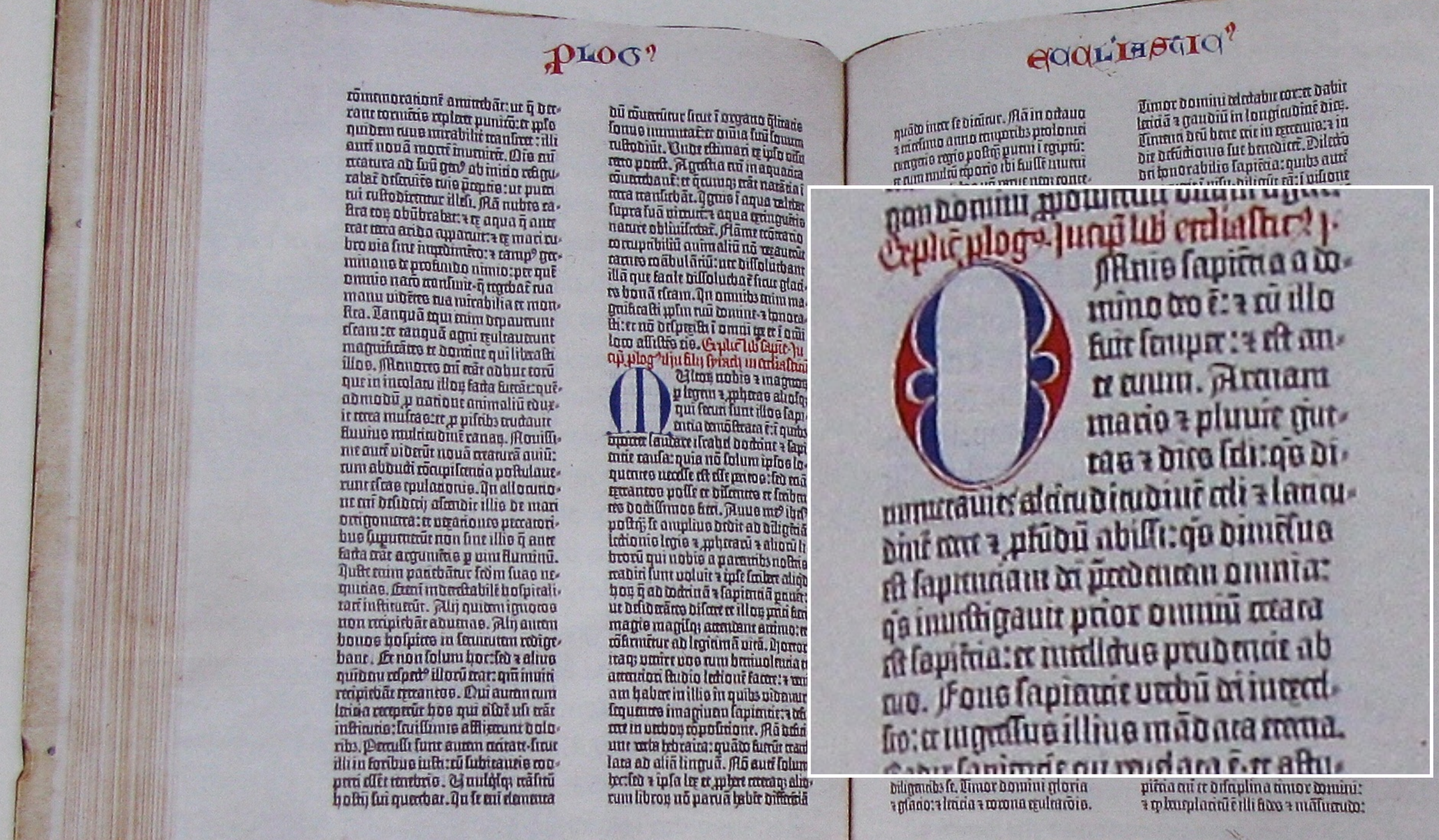
Strange immersion of torus in 3-space
[Curtis 92]

Graphic Design is about Interpretation

Max Huber, Poster, 1948

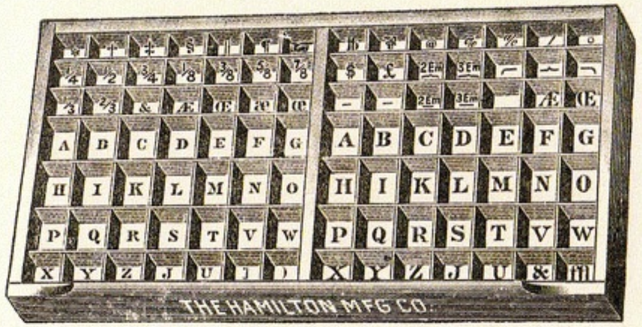
Wes Wilson, Poster, 1966

Images from:
P. Meggs, A History of Graphic Design, Wiley 1998

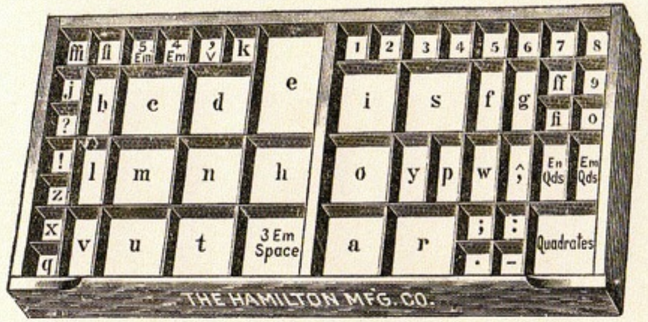


Johann Gutenberg, Gutenberg Bible 1450-55

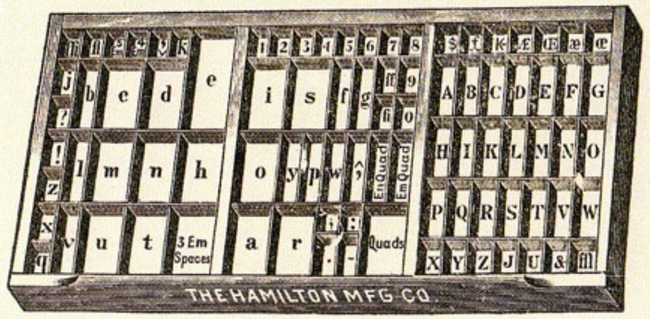
Images from:
P. Meggs, A History of Graphic Design, Wiley 1998



Upper Case.



Lower Case.
A Pair of Cases.

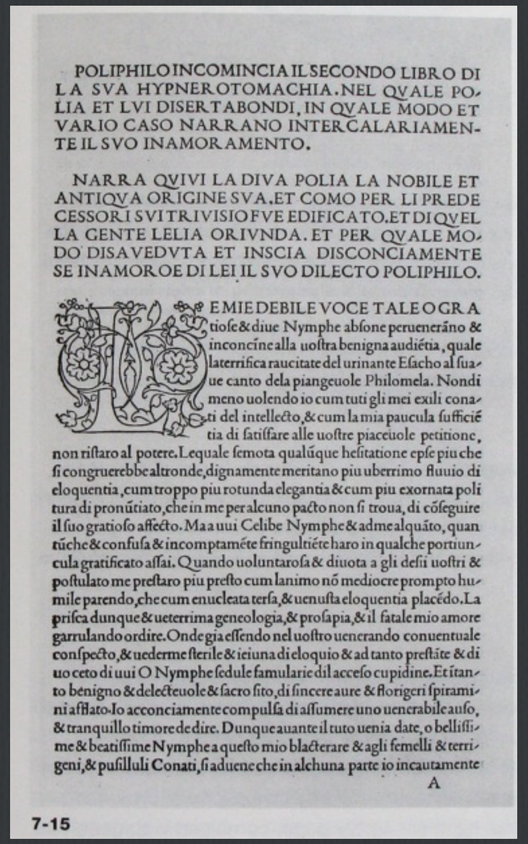


California Job Case.

Fig. 2.—Showing Lay of Cases.

Images from:
E. Lupton, Thinking With Type, Princeton, 2004

A Brief History of Graphic Design



POLIPHILO INCOMINCIA IL SECONDO LIBRO DI LA SVA HYPNEROTOMACHIA. NEL QVALE POLIA ET LVI DISERTABONDI, IN QVALE MODO ET VARIO CASO NARRANO INTERCALARIAMENTE IL SVO INAMORAMENTO.

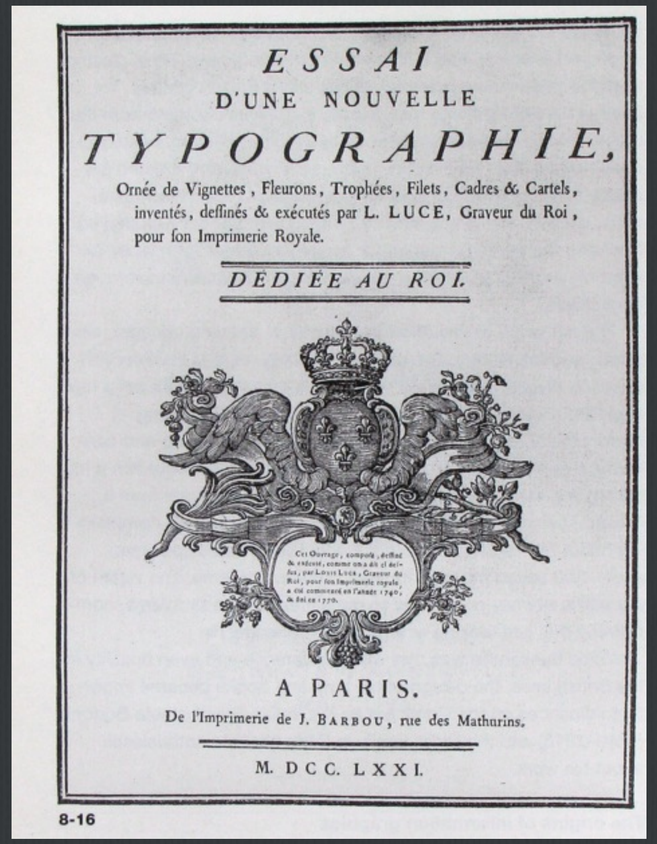
NARRA QVIVI LA DIVA POLIA LA NOBILE ET ANTIQVA ORIGINE SVA. ET COMO PER LI PREDECESSORI SVI TRIVISIO FVE EDIFICATO. ET DI QVELLA GENTE LELIA ORIVNDA. ET PER QVALE MODO DISAVEDVTA ET INSCIA DISCONCIAMENTE SE INAMORO E DI LEI IL SVO DILECTO POLIPHILO.

TEMIE DEBILE VOCE TALE OGRAtiose & diue Nymphe absone peruenerãno & inconcíne alla uostra benigna audiétia, quale la terrifica raucitate del urinante Esacho al suaue canto dela piangeuole Philomela. Nondimeno uolendo io cum tuti gli mei exili conati del intellecto, & cum la mia paucula sufficiétia di satisfare alle uostre piaceuole petitione, non ristaro al potere. Lequale semota qualúque hesitatione epse piu che si congruerebbe altronde, dignamente meritano piu uberrimo fluuio di eloquentia, cum troppo piu rotunda elegantia & cum piu exornata politura di pronũtiato, che in me per alcuno pacto non si troua, di cõseguire il suo gratioso affecto. Ma a uui Celibe Nymphe & adme alquãto, quantũche & confusa & incomptaméte fringultiéte haro in qualche portiuncula gratificato assai. Quando uoluntarosa & diuota a gli desii uostri & postulato me prestaro piu presto cum lanimo nõ mediocre prompto humile parendo, che cum enucleata tersa, & uenusta eloquentia placẽdo. La prisca dunque & ueterrima geneologia, & prosapia, & il fatale mio amore garrulando ordire. Onde gia essendo nel uostro uenerando conuentuale conspecto, & uedermi sterile & ieiuna di eloquio & ad tanto prestãte & di uo ceto di uui O Nymphe sedule famularie dil acceso cupidine. Et itanto benigno & delecteuole & sacro sito, di sincere aure & florigeri spiramini afflato. Io acconciamente compulsa di assumere uno uenerabile auso, & tranquillo timore de dire. Dunque auante il tuto uenia date, o bellissime & beatissime Nymphe a questo mio blacterare & agli femelli & terrigeni, & pusilluli Conati, si aduene che in alchuna parte io incautamente

A

7-15

Aldus Manutius,
Hypnerotomachia Poliphili, 1499



ESSAI
D'UNE NOUVELLE
TYPOGRAPHIE,
Ornée de Vignettes, Fleurons, Trophées, Filets, Cadres & Cartels, inventés, dessinés & exécutés par L. LUCE, Graveur du Roi, pour son Imprimerie Royale.

DEDIÉE AU ROI.

Ces Ouvrage, composé, dessiné & exécuté, comme on a dit ci-dessus, par Louis Luce, Graveur du Roi, pour son Imprimerie royale, a été commencé en l'année 1740, & fini en 1770.

A PARIS.
De l'Imprimerie de J. BARBOU, rue des Mathurins.

M. DCC. LXXI.

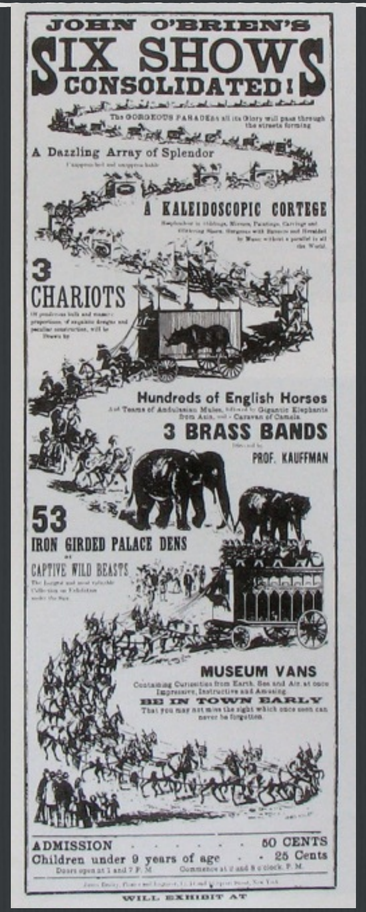
8-16

L.R. Luce, JJ. Barbou,
Essai d'une nouvelle typographie, 1771

Images from:
P. Meggs, A History of Graphic Design, Wiley 1998

19th Century: Advertising

Letterpress poster, 1875



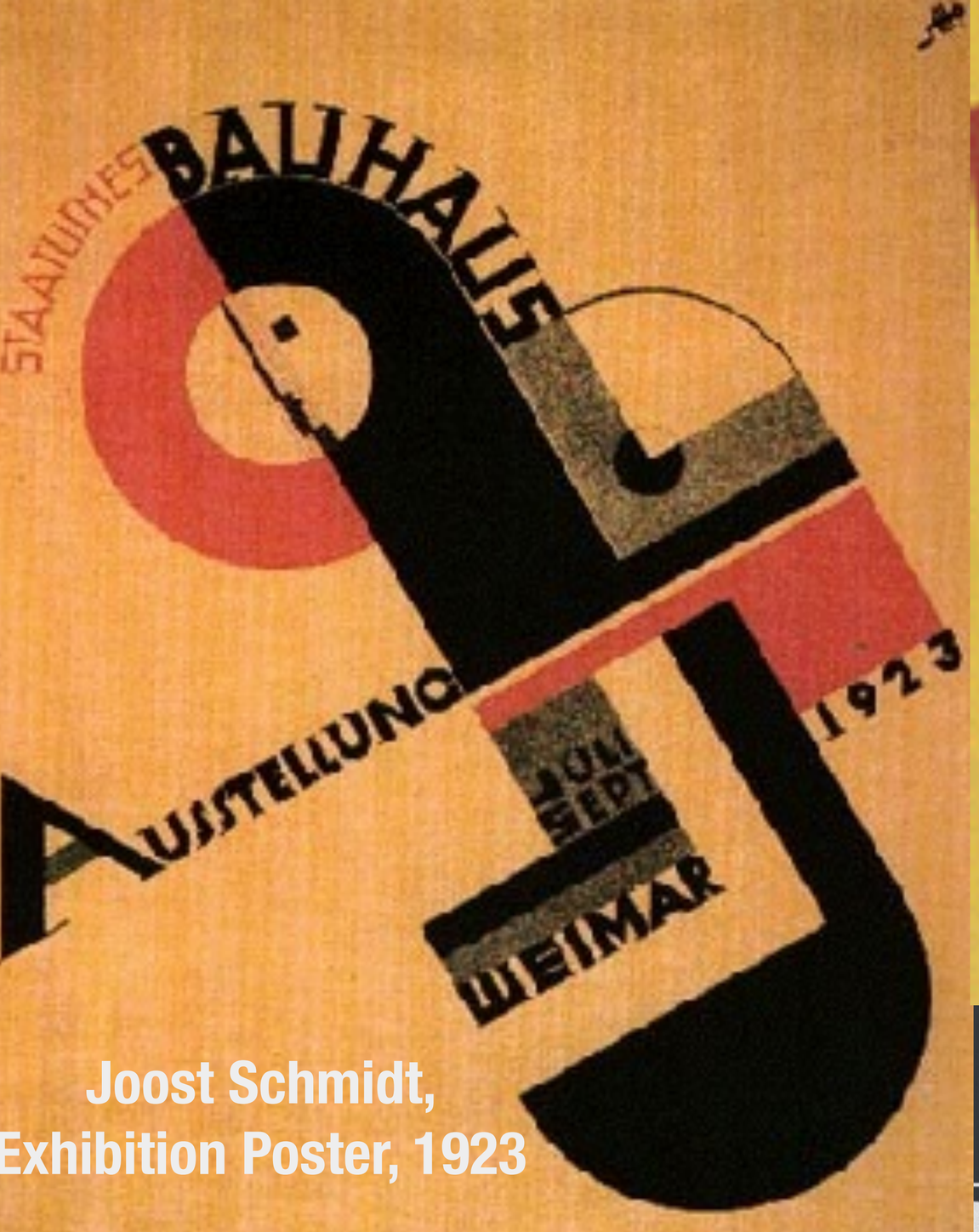
James Reilly, Poster for O'Brien's Circus, 1866.

Images from:
P. Meggs, A History of Graphic Design, Wiley 1998
E. Lupton, Thinking With Type, Princeton, 2004

Edward Johnston, London Underground, 1916

Images from:
P. Meggs, A History of Graphic Design, Wiley 1998

BAUHAUS



Joost Schmidt,
Exhibition Poster, 1923

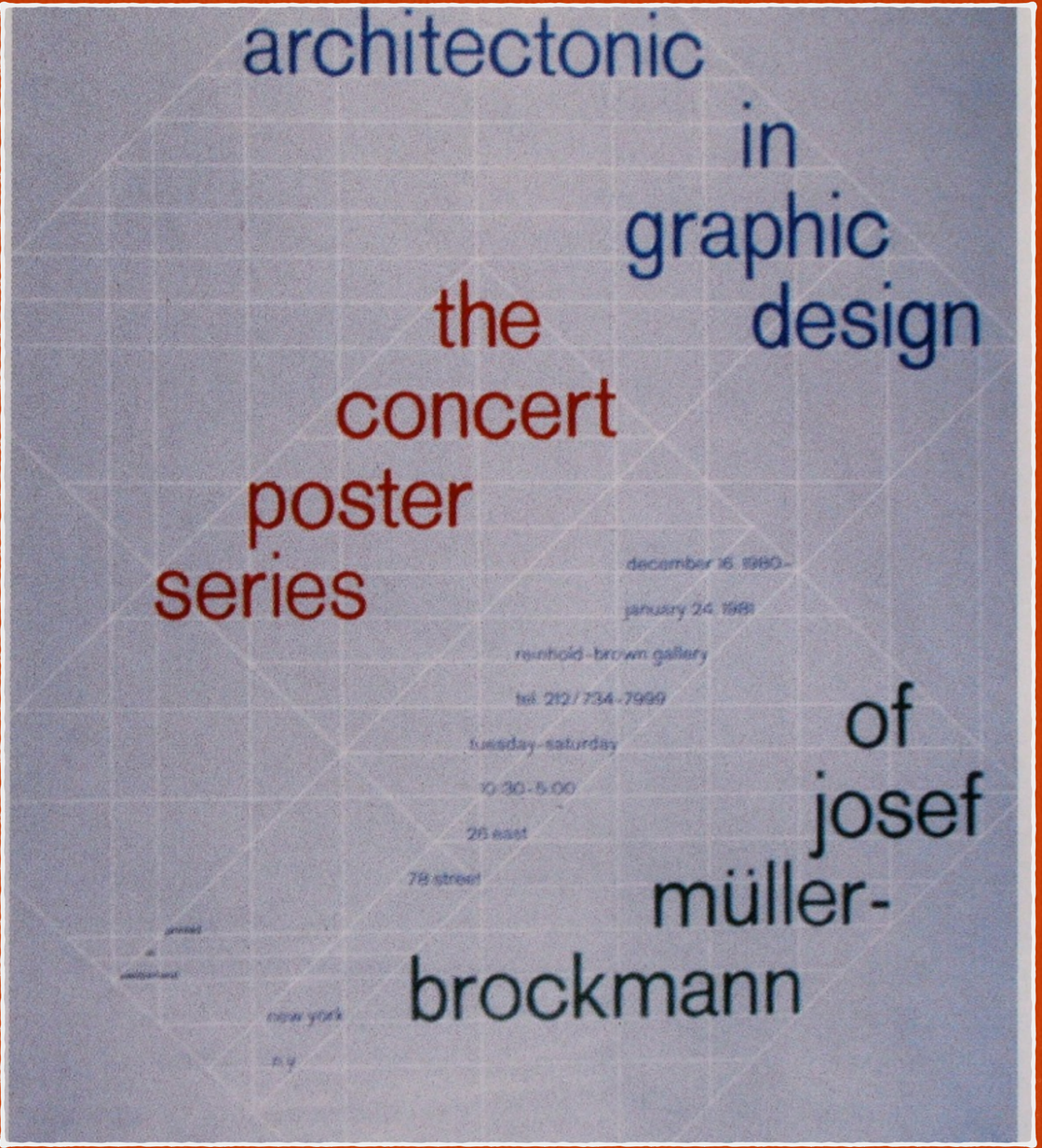
Herbert Bayer,
Exhibition Poster, 1926

Images from:
P. Meggs, A History of Graphic Design, Wiley 1998

Before: Tschichold, Leipzig Trade Fair, 1922 After: Tschichold, Elemental Typogrphay, 1925

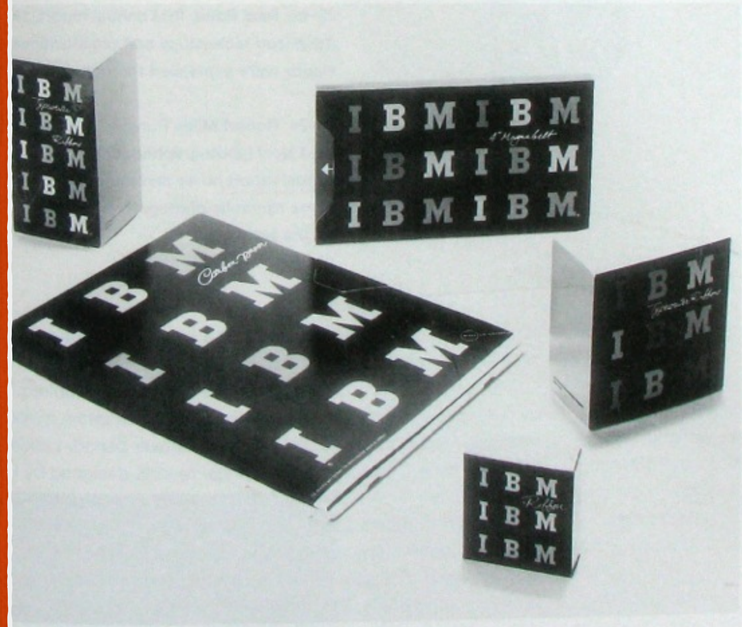
Grid-Based Design

Josef Müller-Brockmann
Exhibition Poster, 1980



Design Systems: Corporate Identity

22–19



22–17. Paul Rand, IBM trademark, 1956. The original design is shown with outline version and the eight- and thirteen-stripe versions currently used.

22–18. Paul Rand, IBM package designs, late 1950s. A strong corporate identification was produced by a repeating pattern of blue, green, and magenta capital letters on the black package fronts, white handwritten product names, and blue package tops and sides.

22–19. Paul Rand, IBM package design, 1975. After two decades the original packaging design program was replaced by an updated design using the eight-stripe logo.

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Moscow vows to avenge bomb blasts

Russia's leaders pledge to "destroy" those behind rush-hour suicide attacks on the Moscow Metro in which 38 people died.

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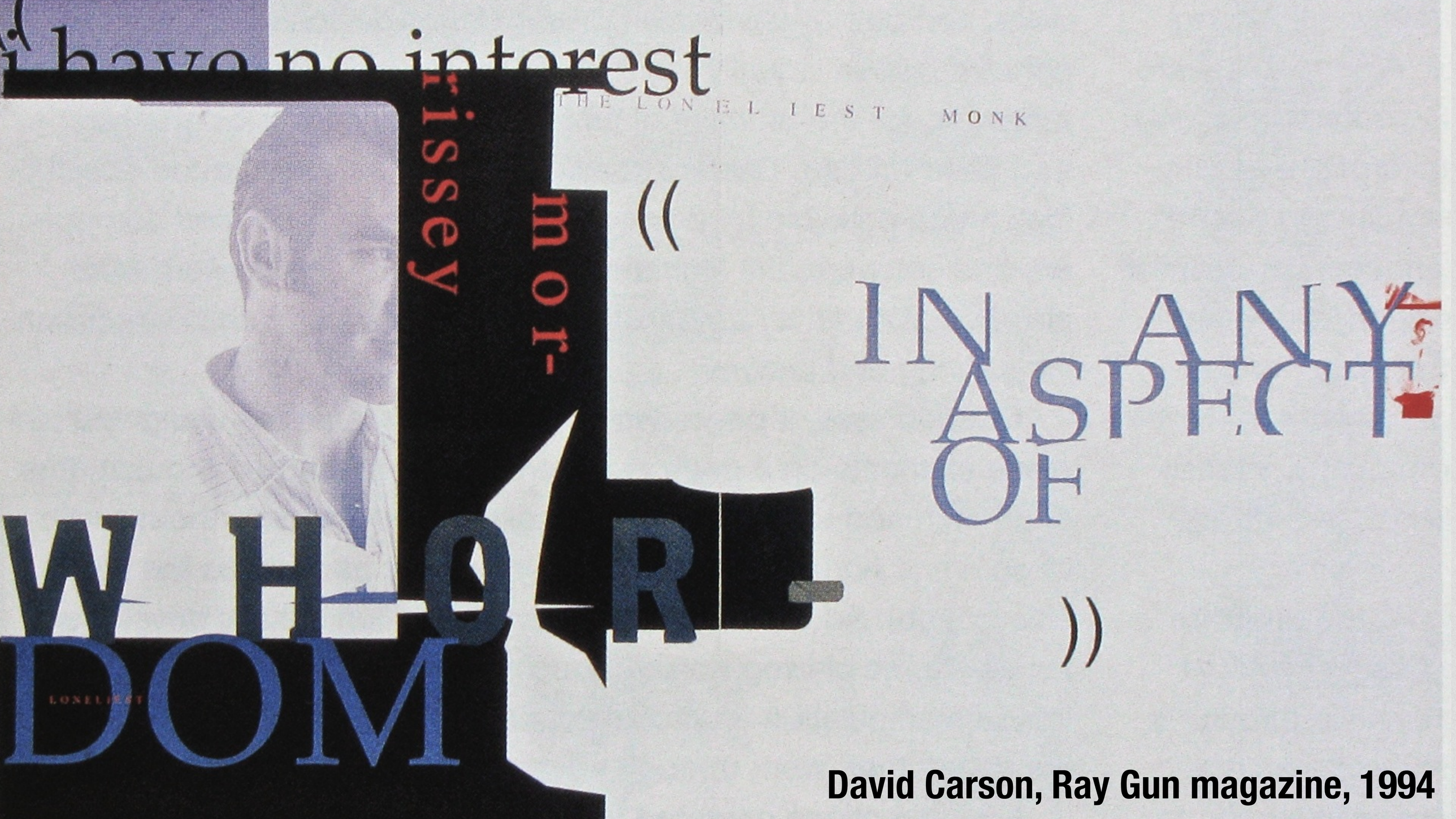
- Newcastle 2-0 Nottm Forest
- Rooney & Ferdinand boost Man Utd
- Lyon v Bordeaux
- Gascoigne on drink-drive charge

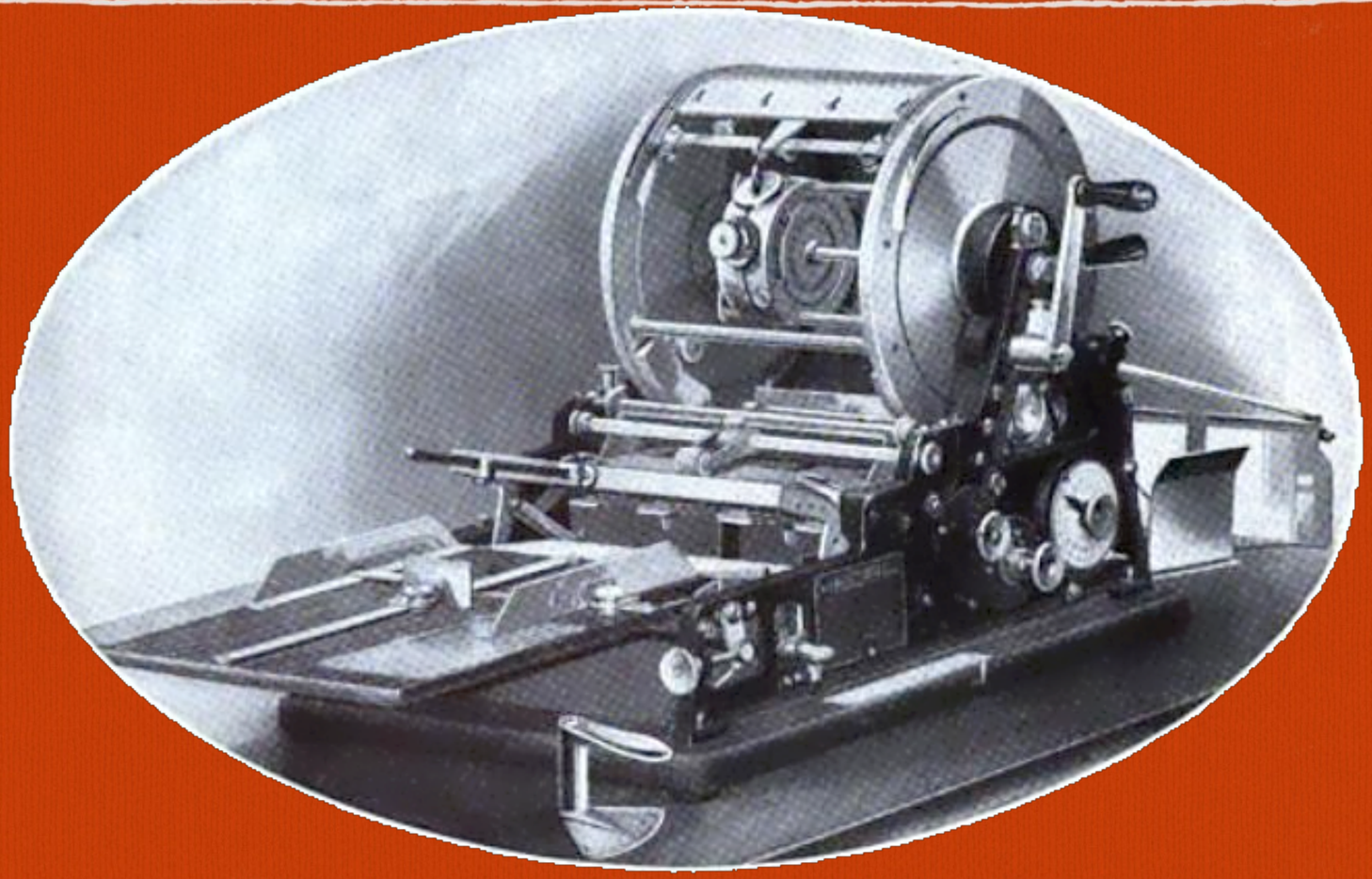
Spotlight

» CLICK

Click: The BBC's flagship technology programme



David Carson, Ray Gun magazine, 1994



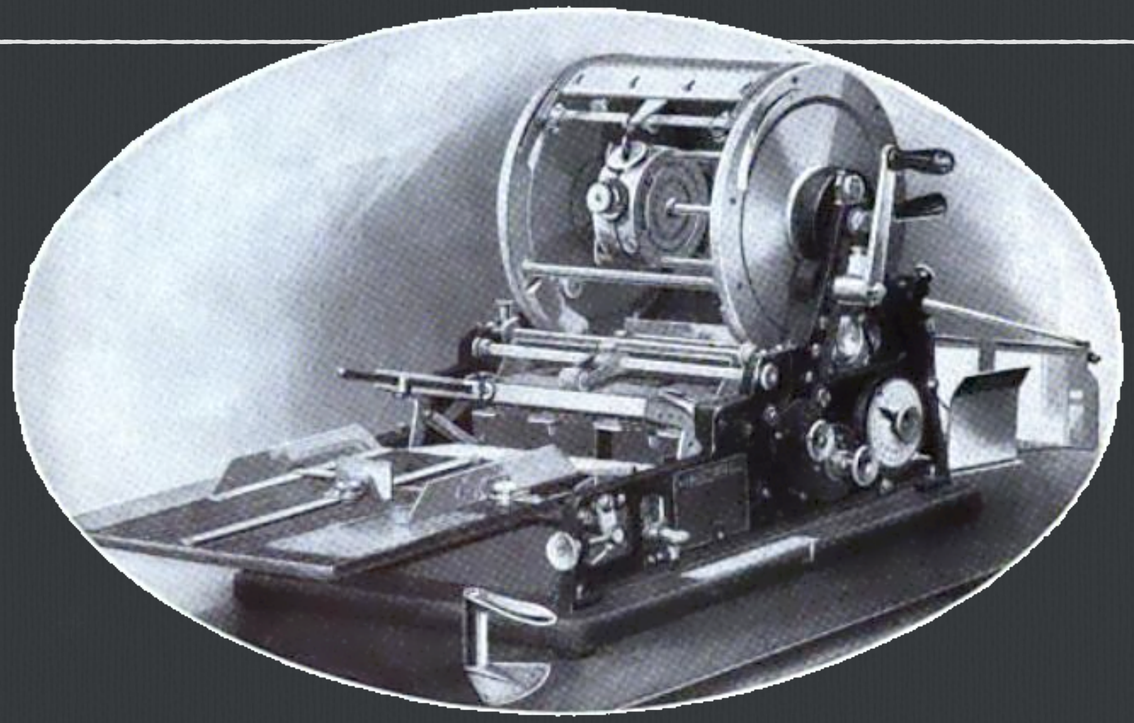
History of Industrial Design

Product Design is about Form and Function

Philippe Starck, Juicer for Alessi

Oxo Angled Measuring Cup

Early Mass Production



Unknown, Mimeograph, 1918

Advertisement,
Popular Mechanics,
Oct 1923

Advertisements
Popular Mechanics,
April 1906

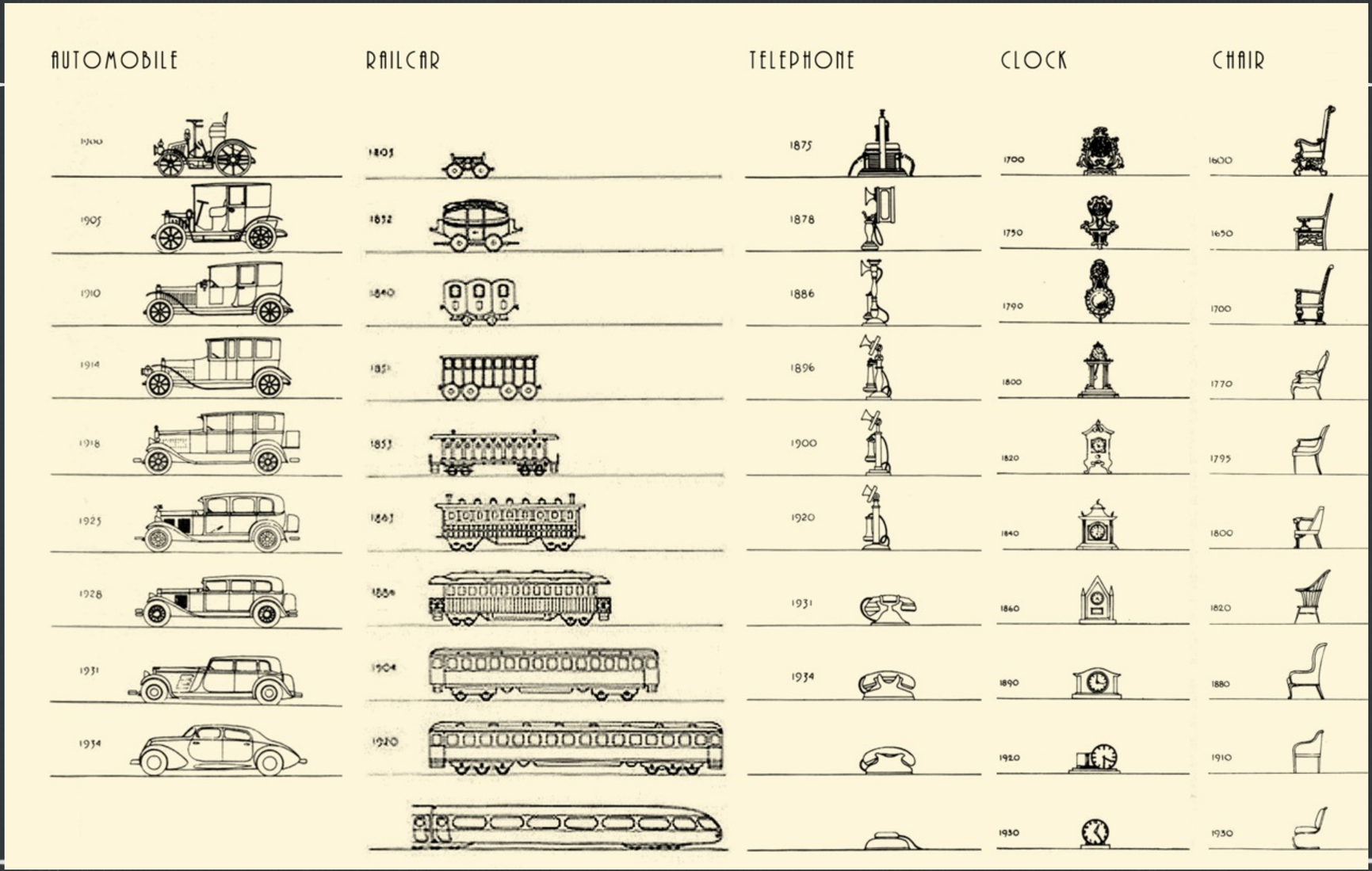
Bauhaus Again

Le Corbusier
Grand Confort, 1928

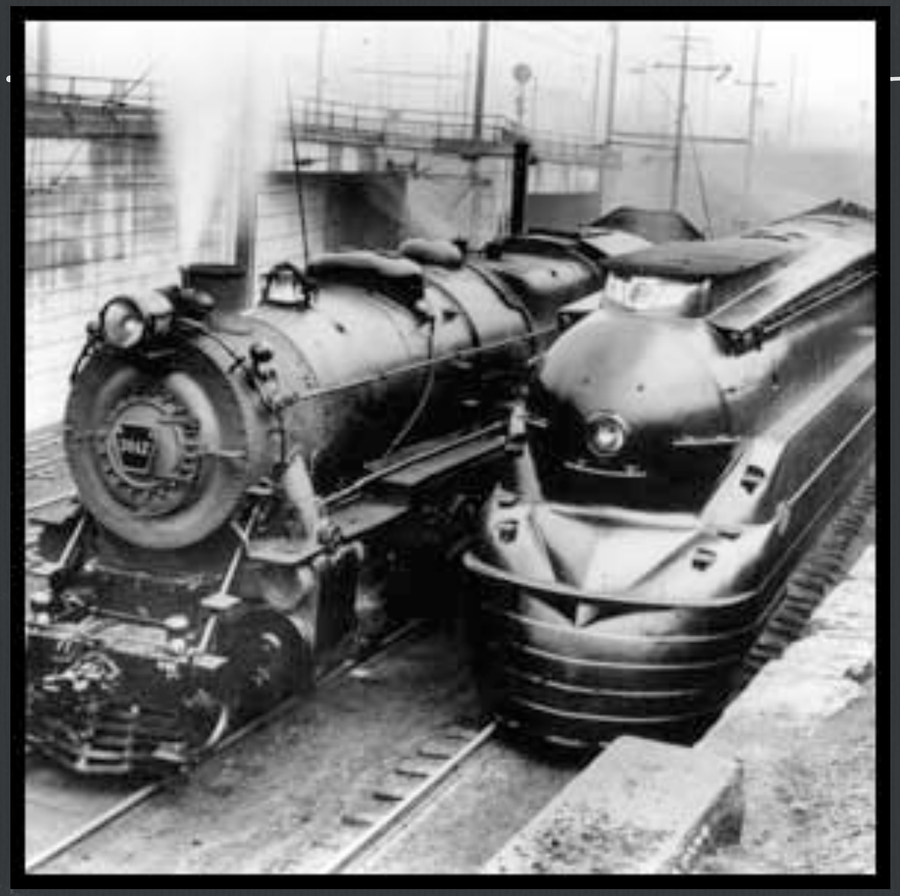
Marcel Breuer
Wassily Chair, 1925

Raymond Loewy, from: hyperakt.com

Streamlining



Streamlining



Pennsylvania Railroad S1, 1939 (Wikipedia)

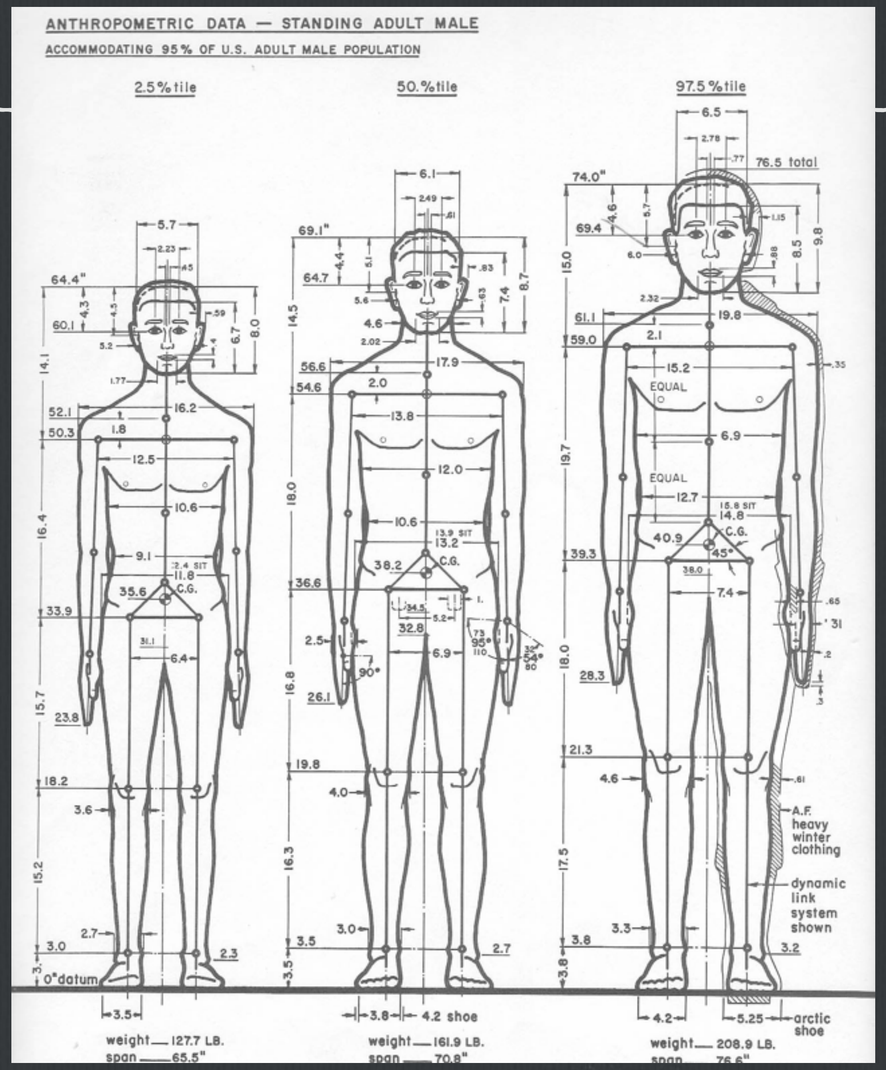
Streamlining gone too far…

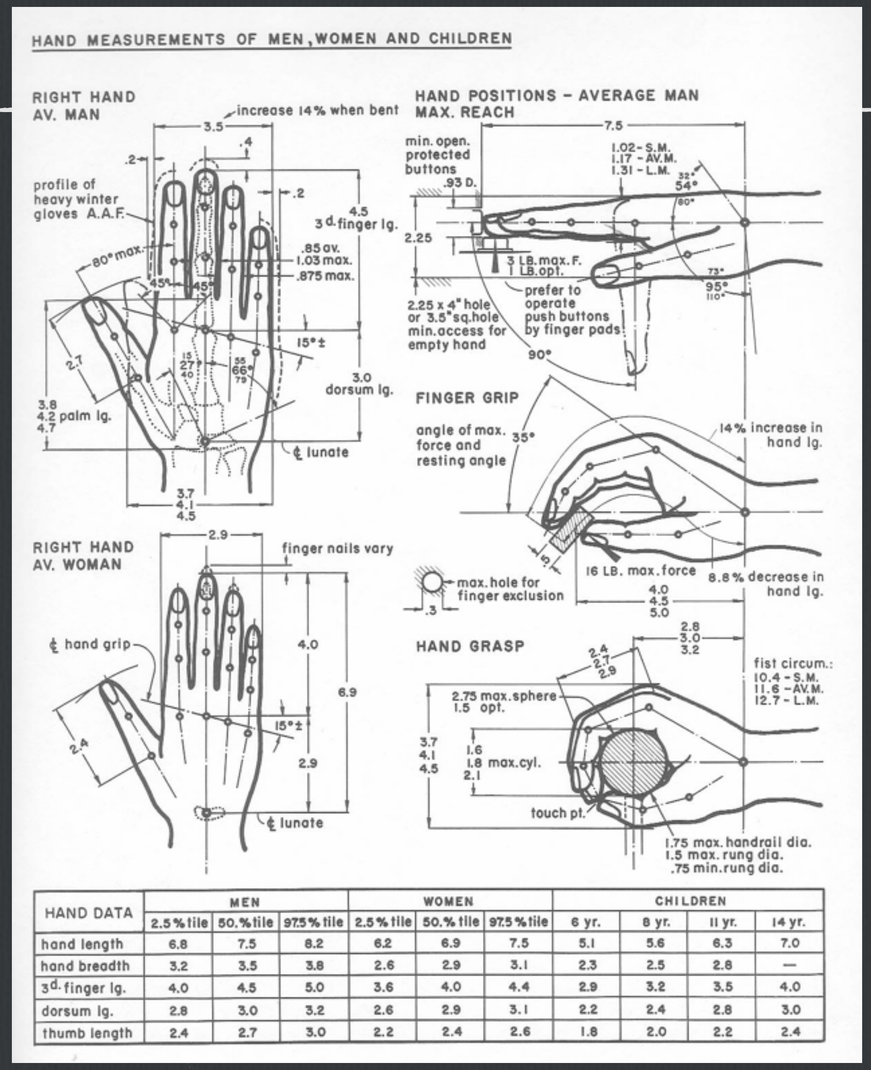
Form Follows Function

It is the pervading law of all things organic and inorganic,
Of all things physical and metaphysical,
Of all things human and all things super-human,
Of all true manifestations of the head,
Of the heart, of the soul,
That the life is recognizable in its expression,
That form ever follows function. This is the law.

- Louis Sullivan

Henry Dreyfuss: Human Factors





HAND DATA	MEN			WOMEN			CHILDREN			
	2.5% tile	50.% tile	97.5% tile	2.5% tile	50.% tile	97.5% tile	6 yr.	8 yr.	11 yr.	14 yr.
hand length	6.8	7.5	8.2	6.2	6.9	7.5	5.1	5.6	6.3	7.0
hand breadth	3.2	3.5	3.8	2.6	2.9	3.1	2.3	2.5	2.8	—
3d. finger lg.	4.0	4.5	5.0	3.6	4.0	4.4	2.9	3.2	3.5	4.0
dorsum lg.	2.8	3.0	3.2	2.6	2.9	3.1	2.2	2.4	2.8	3.0
thumb length	2.4	2.7	3.0	2.2	2.4	2.6	1.8	2.0	2.2	2.4

Dreyfuss: Model 500 phone

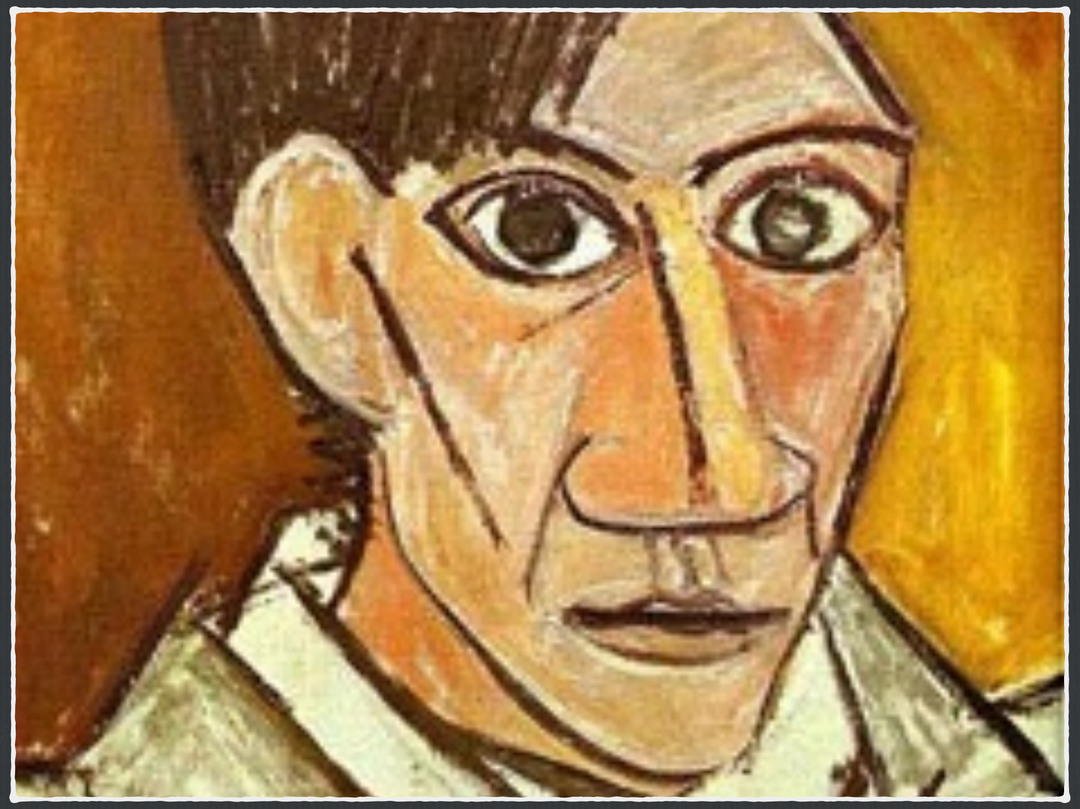
Excess of Form Follows Function

Centre Georges Pompidou, Paris
All infrastructure (ducts, vents, stairs) on outside of building

Simplicity & Elegance

brian donovan on flickr

Steal Good Design Ideas

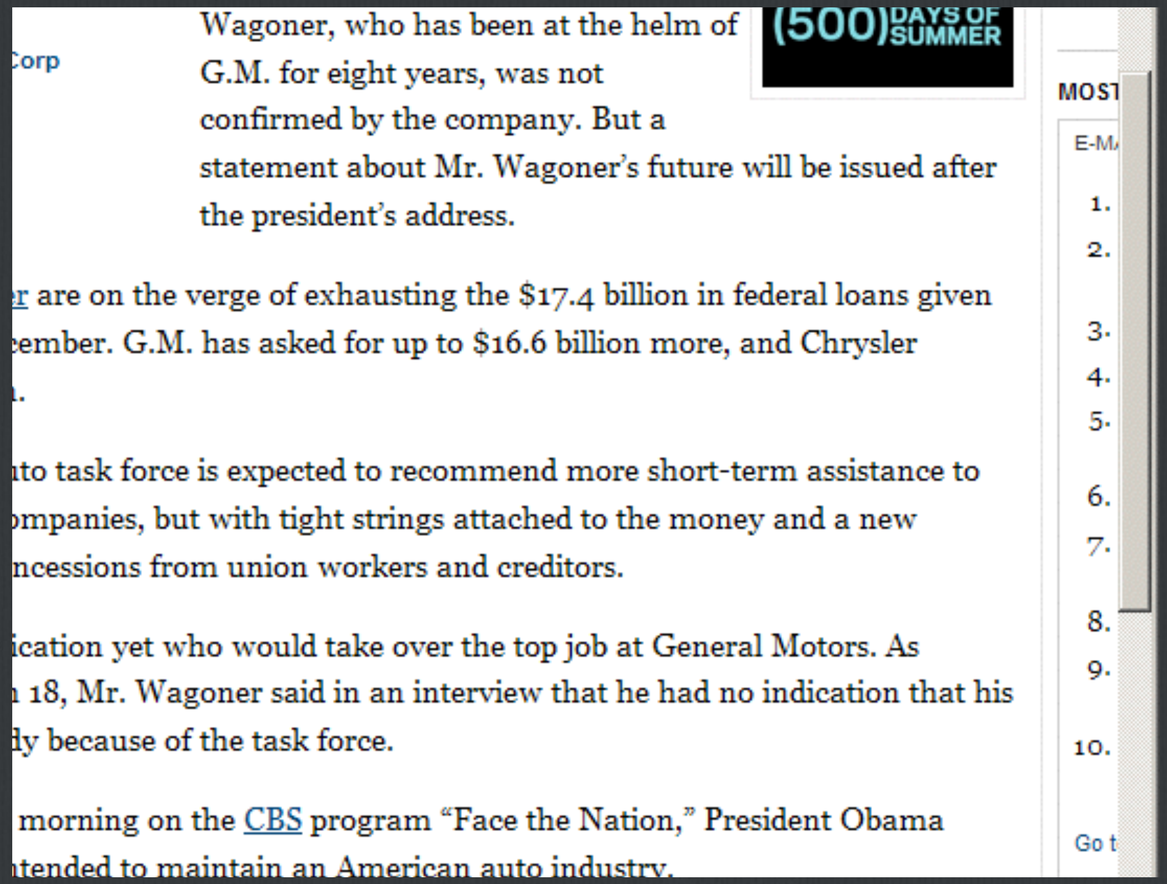


- “Good artists borrow (from other artists), but great artists steal !”
  - Pablo Picasso
- Compelling visual design takes practice and experience – a natural part of which is study and critique of other’s work

Simplicity

Simple, minimalist, designs are often most effective

Elegance



- ☐ Reduction: Only include essential elements
- ☐ Regularization: Use one set of shapes, colors, forms etc.
- ☐ Leverage: Use elements in multiple roles
  - ☐ scrollbar allows scrolling and indicates position in document

Benefit: Approachability

Visual elements rapidly understood - invite further exploration

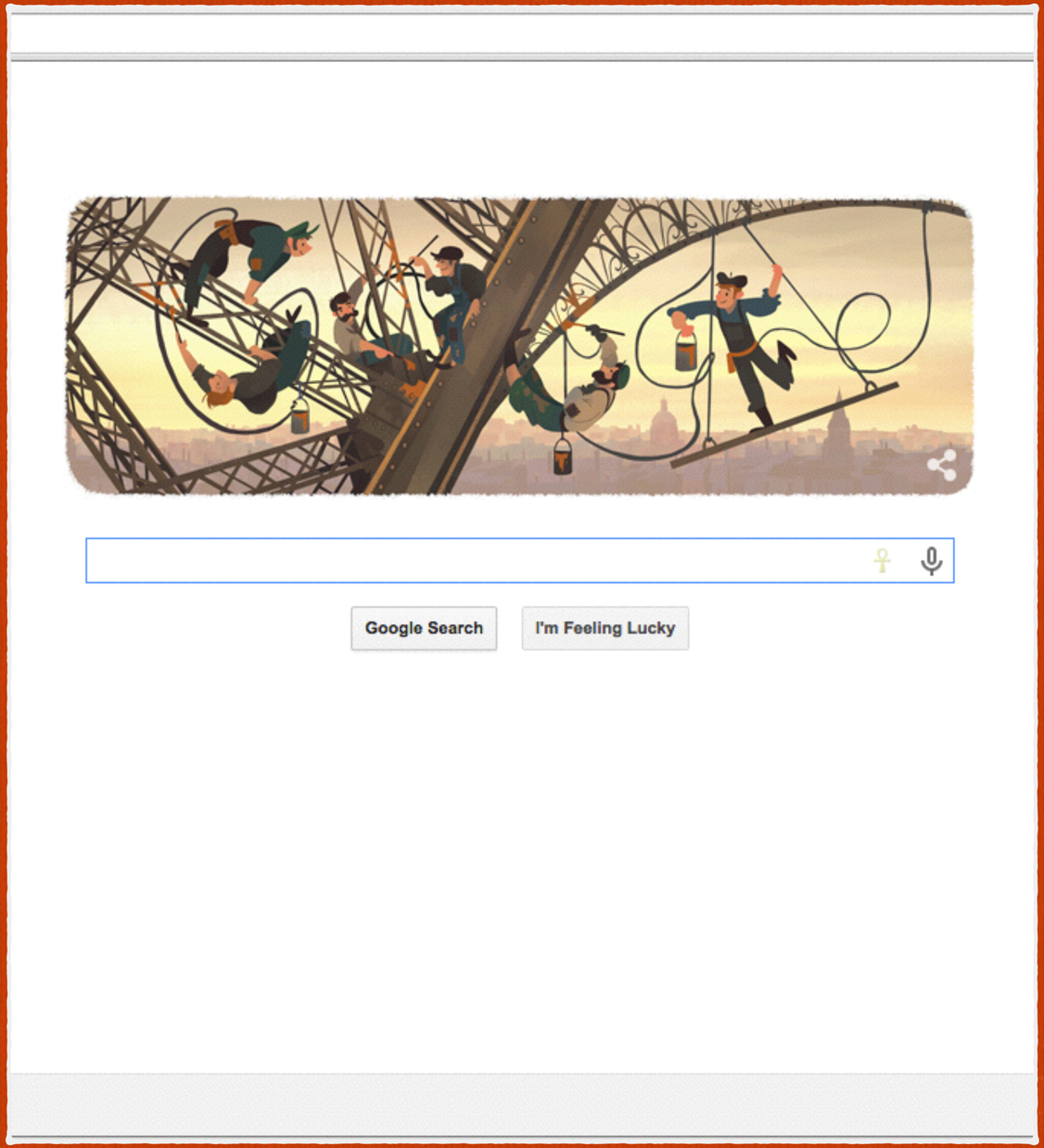
Benefit: Recognizability

Less visual clutter makes it easier to recognize what is there

Benefit: Immediacy

Eye is immediately drawn to important visual elements

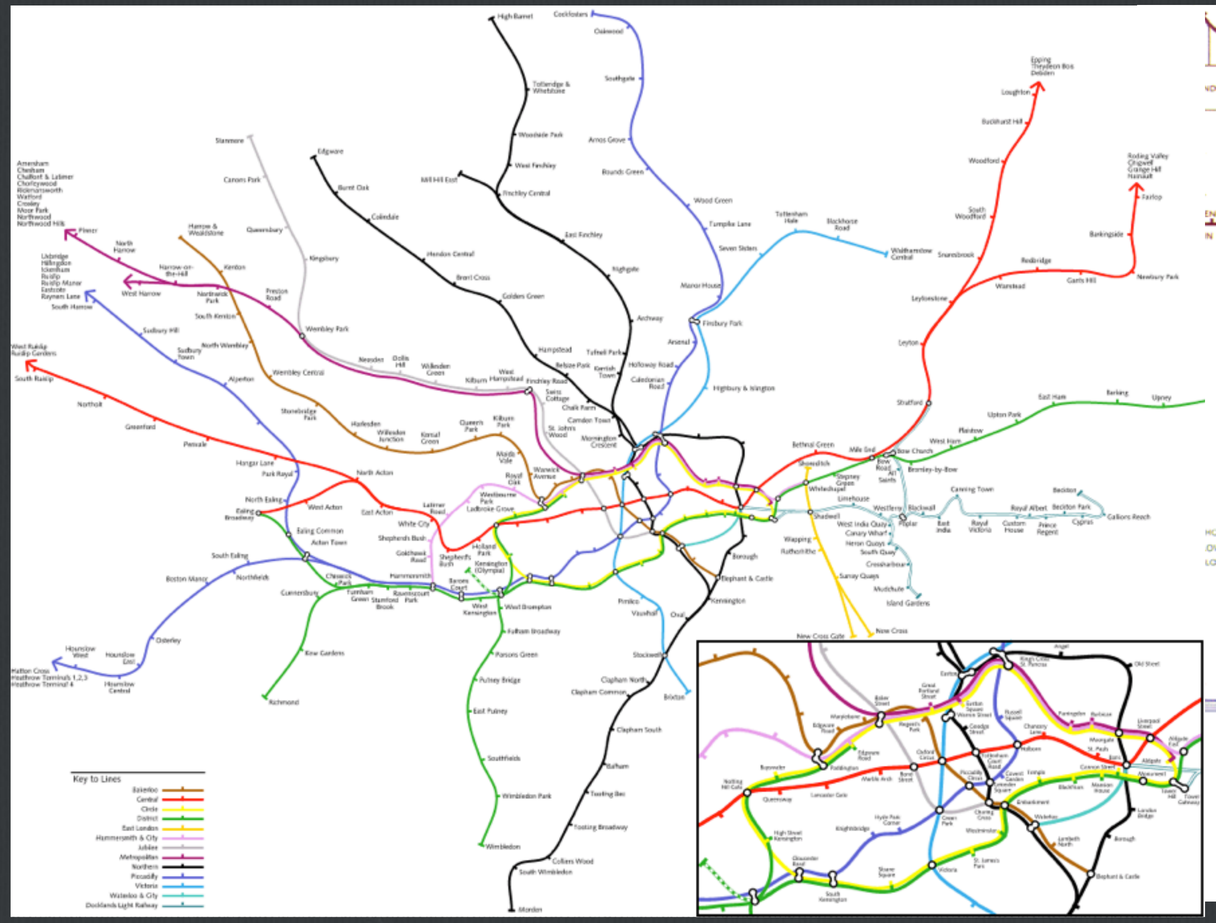
Details that remain are more prominent



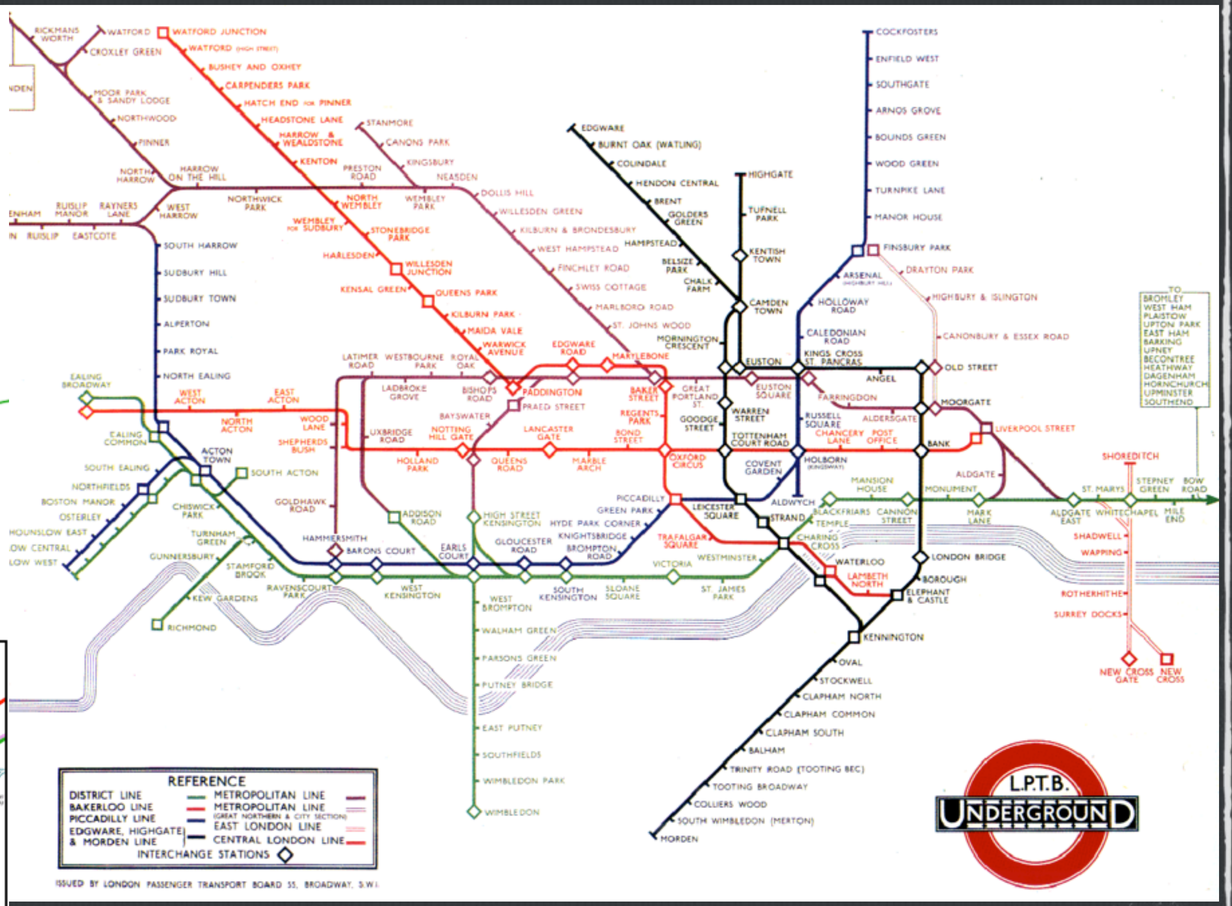
Refinement

Draw viewers' attention to essential information

Straighten subway lines to emphasize sequence of stops



Geographic version of map

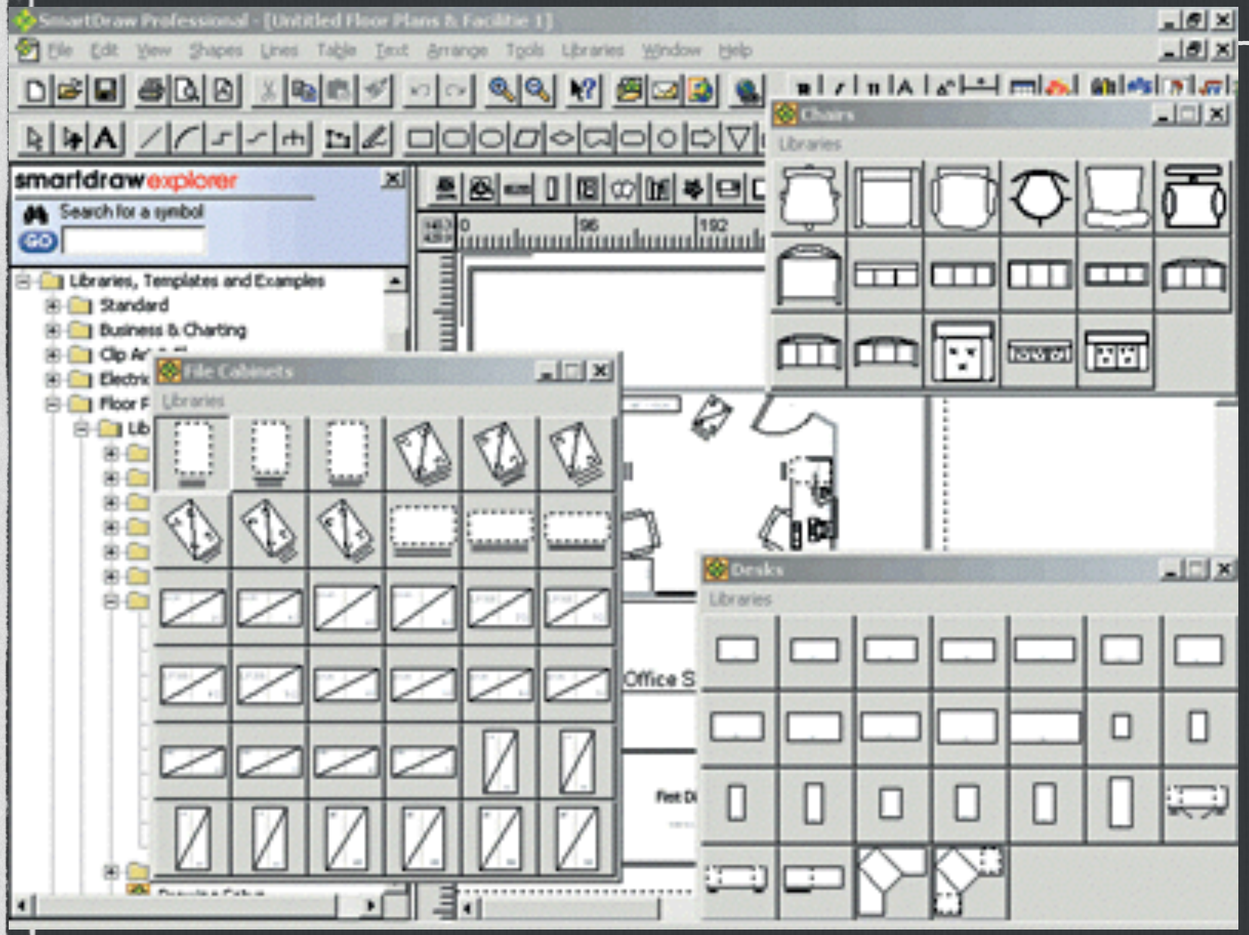


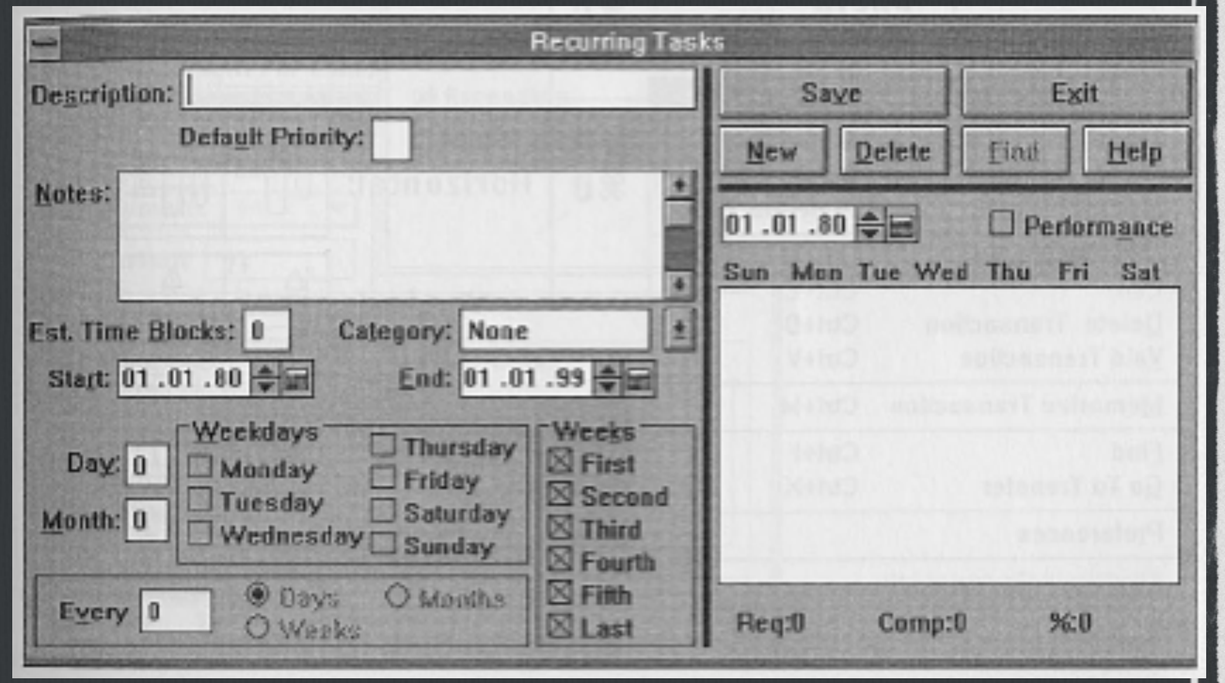
London Underground [Beck 33]

Unity

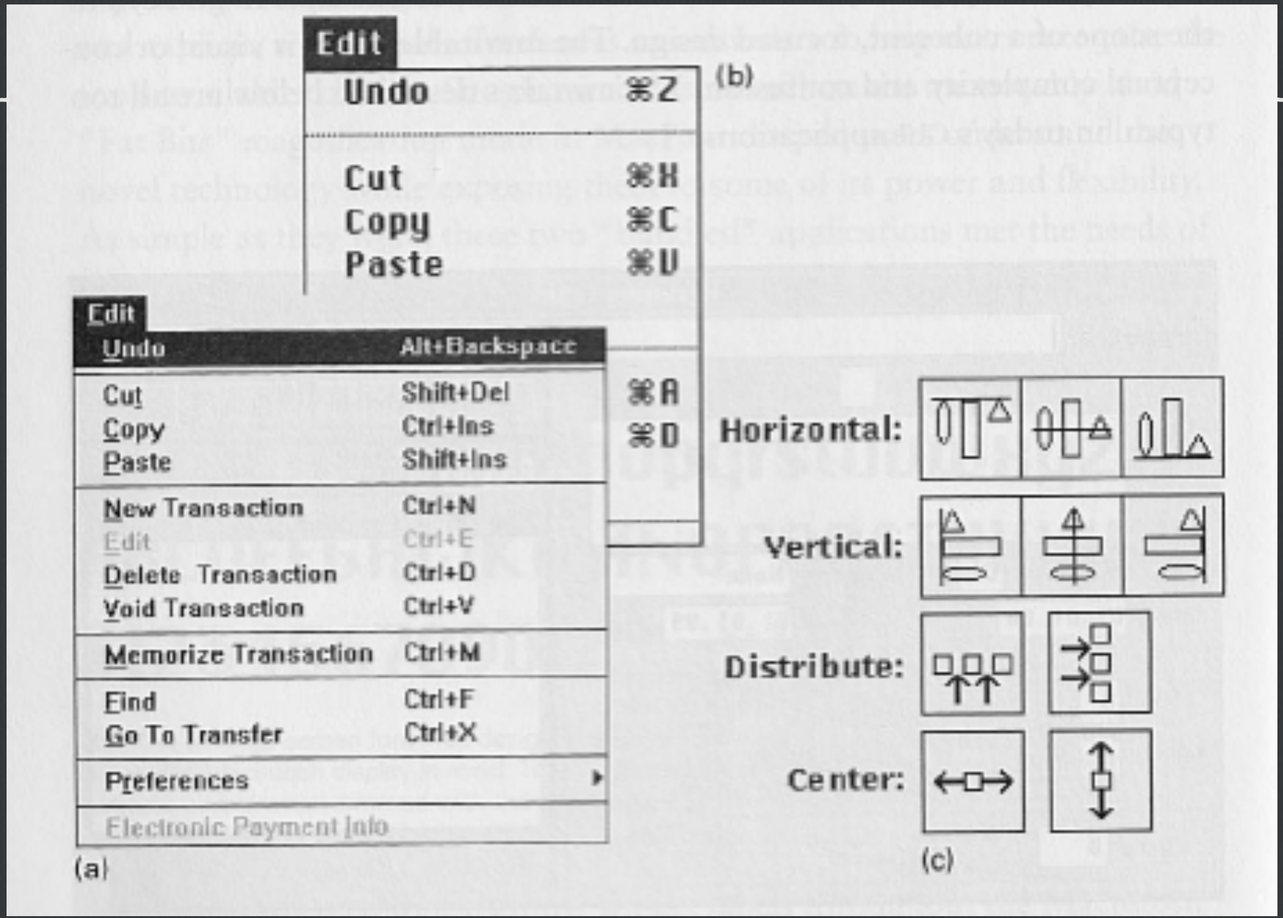
One path to simplicity & elegance is through unifying themes:
Forms, colors, components with like qualities

Mistakes: Clutter & Noise



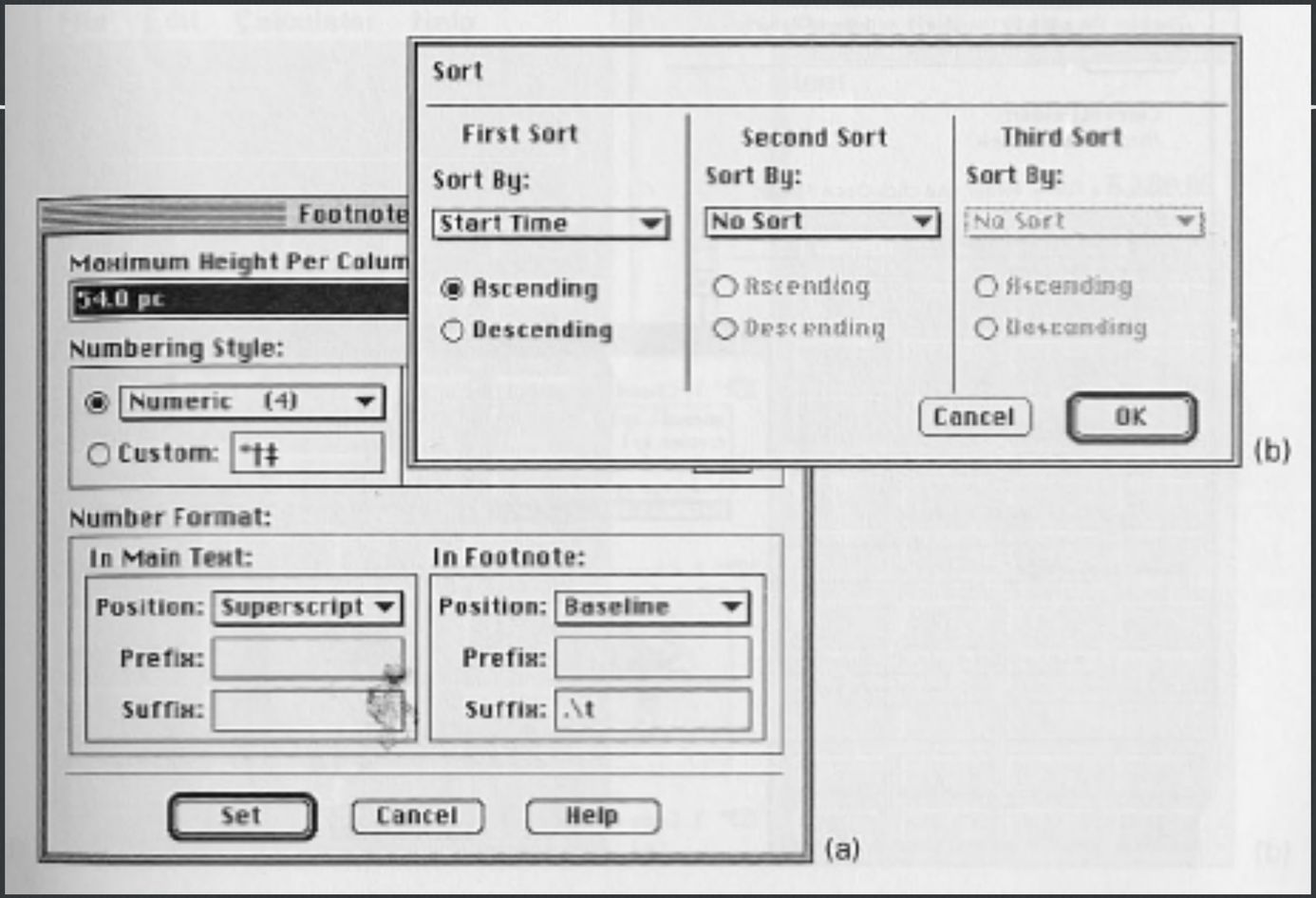


Mistakes: Interference



Shortcuts interfere with menu labels in (a) not in (b).
Different shapes cause confusion in alignment tools

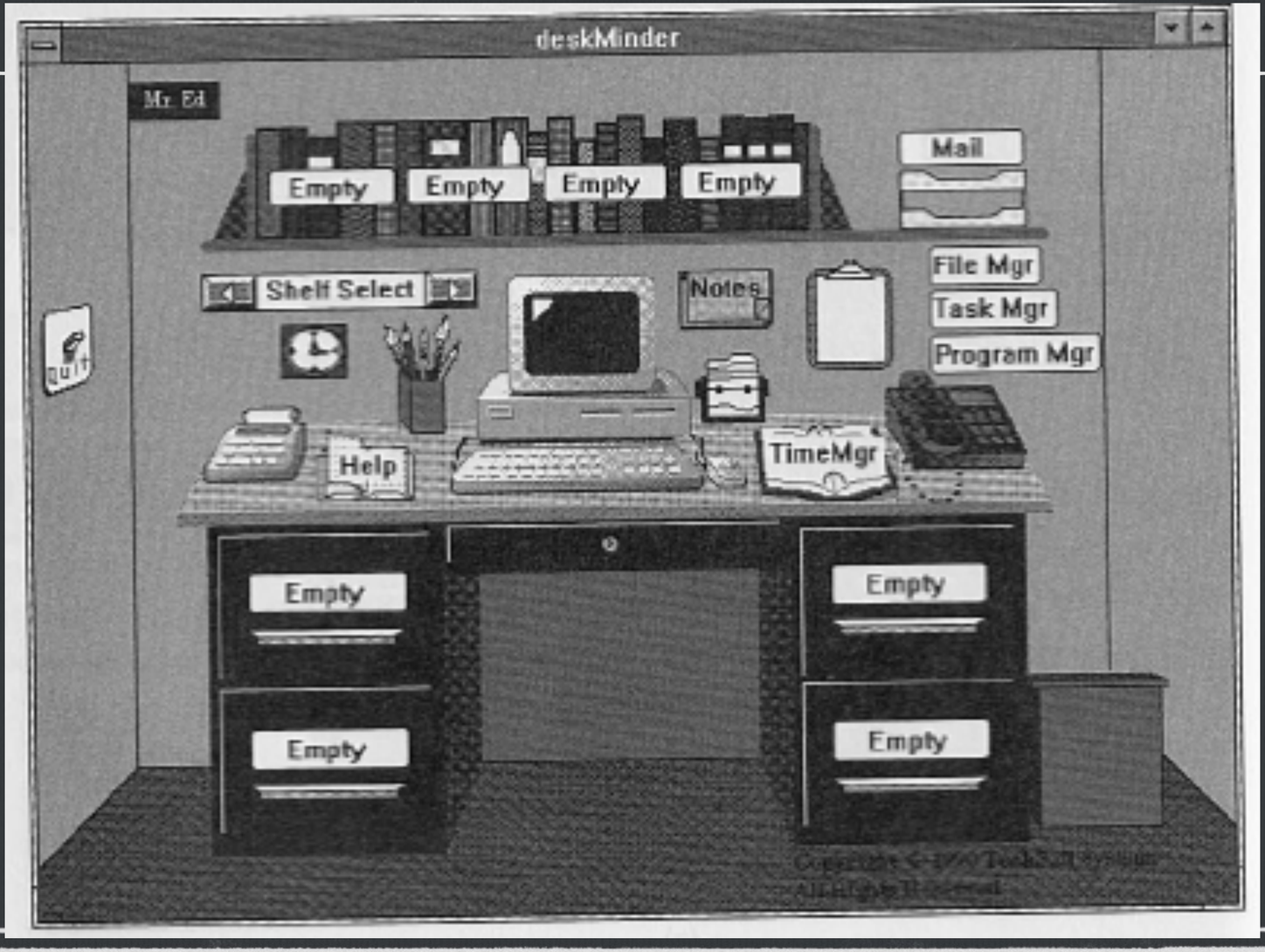
Mistakes: Too Much Structure



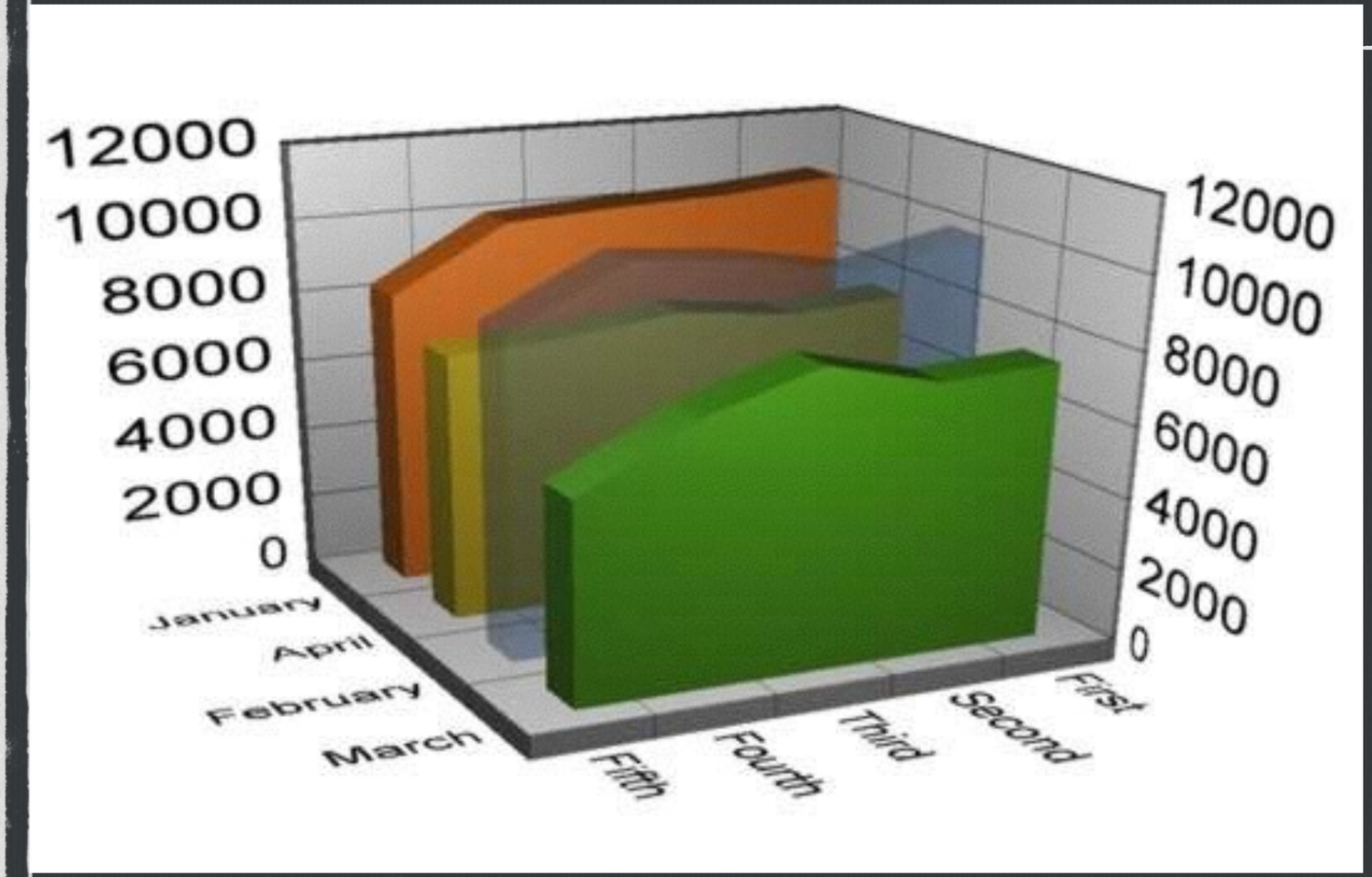
Bounding boxes in (a) adds unnecessary structural information

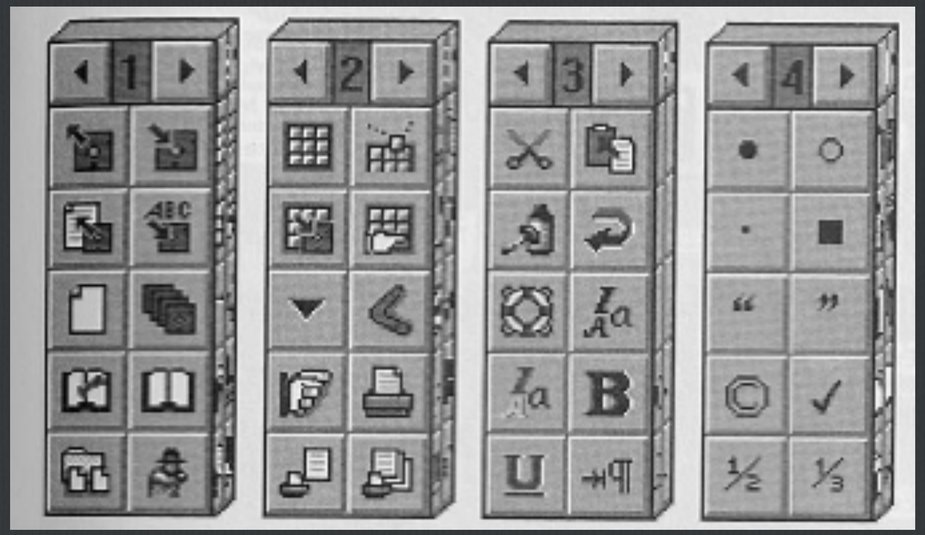
Simpler structure in (b) using space rather than lines is better

Mistakes: Belaboring the Obvious

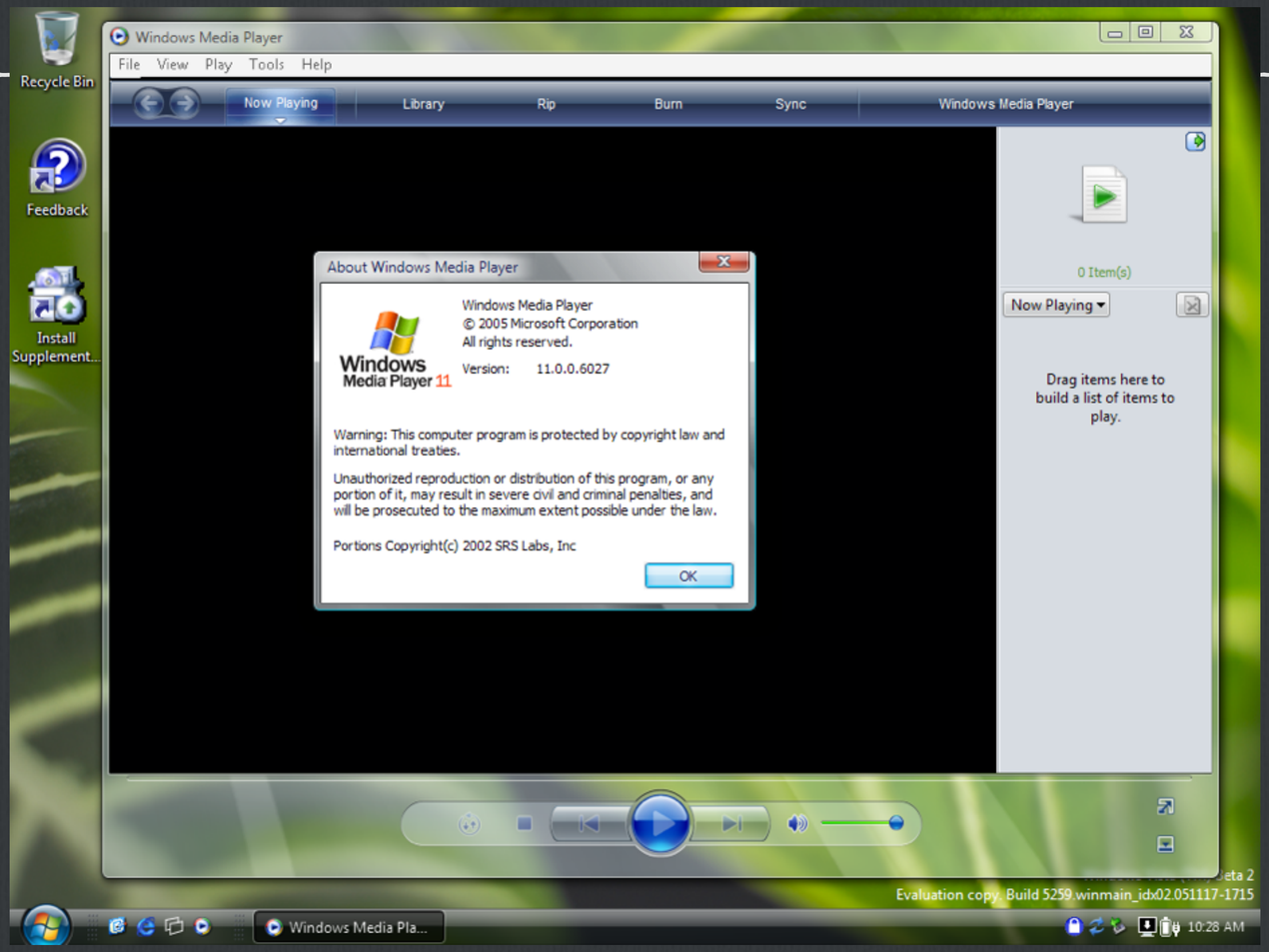


Mistakes: Gratuitous use of 3D

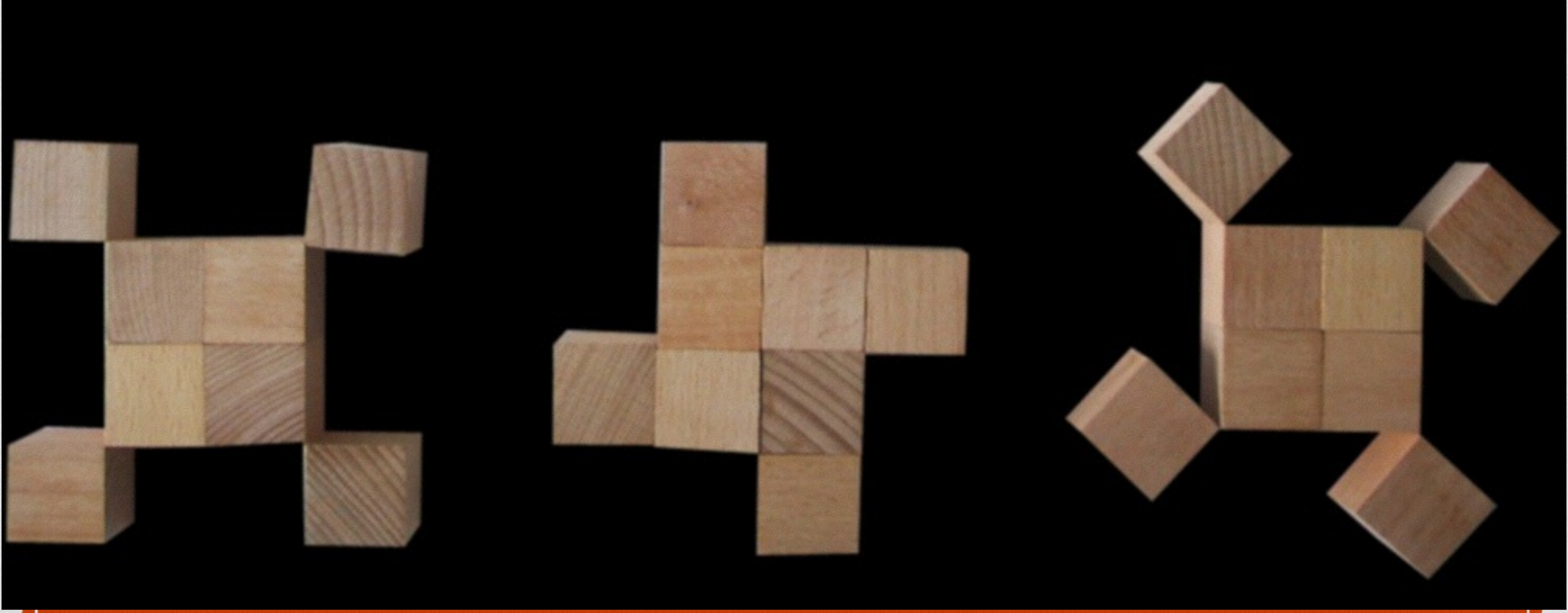




Mistakes: Excessive Embellishment



Minimalists hate it, but sometimes users like embellishment



Gestalt Principles

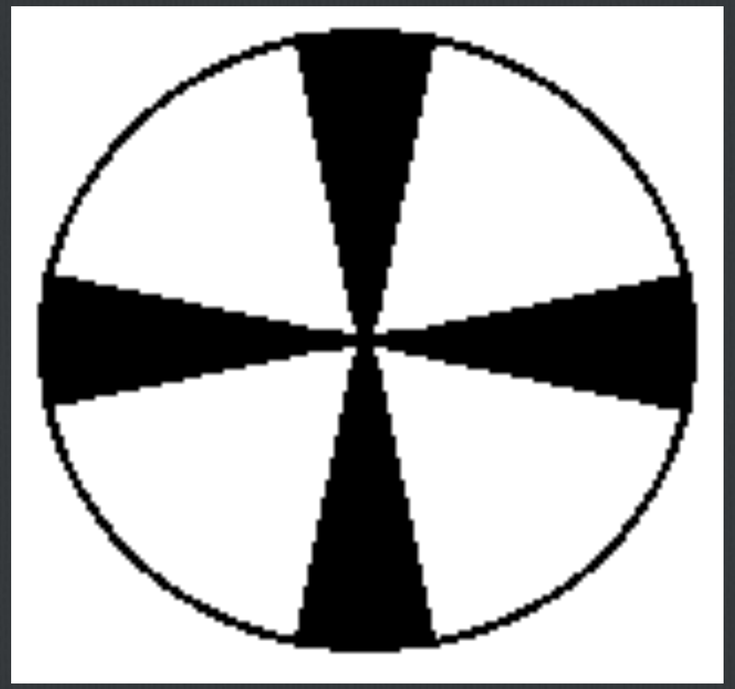
arquepoetica on flickr

Principles

- ☐figure/ground
- ☐proximity
- ☐similarity
- ☐symmetry
- ☐connectedness
- ☐continuity
- ☐closure
- ☐common fate
- ☐transparency

Figure/Ground

Principle of surroundedness



Principle of relative size

Figure/Ground

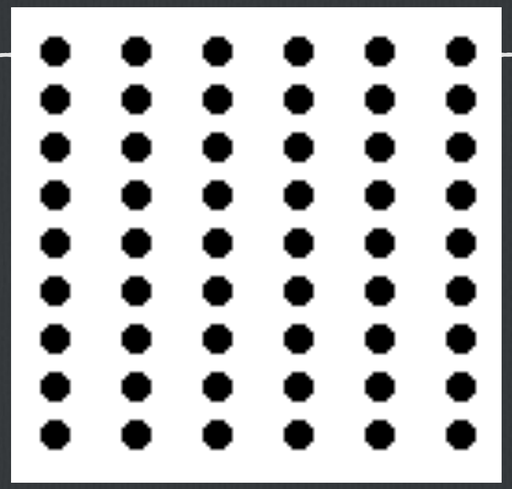
Ambiguous

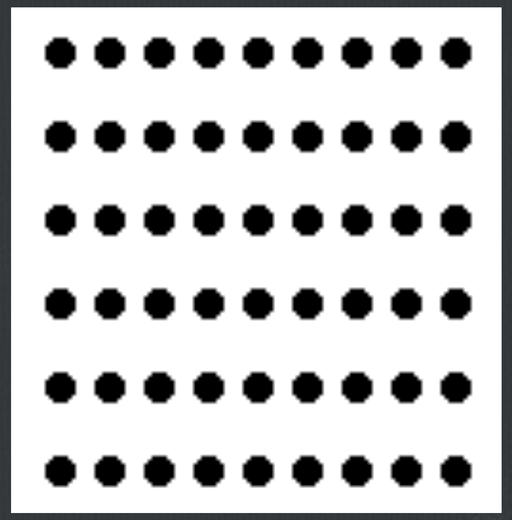
Figure/Ground

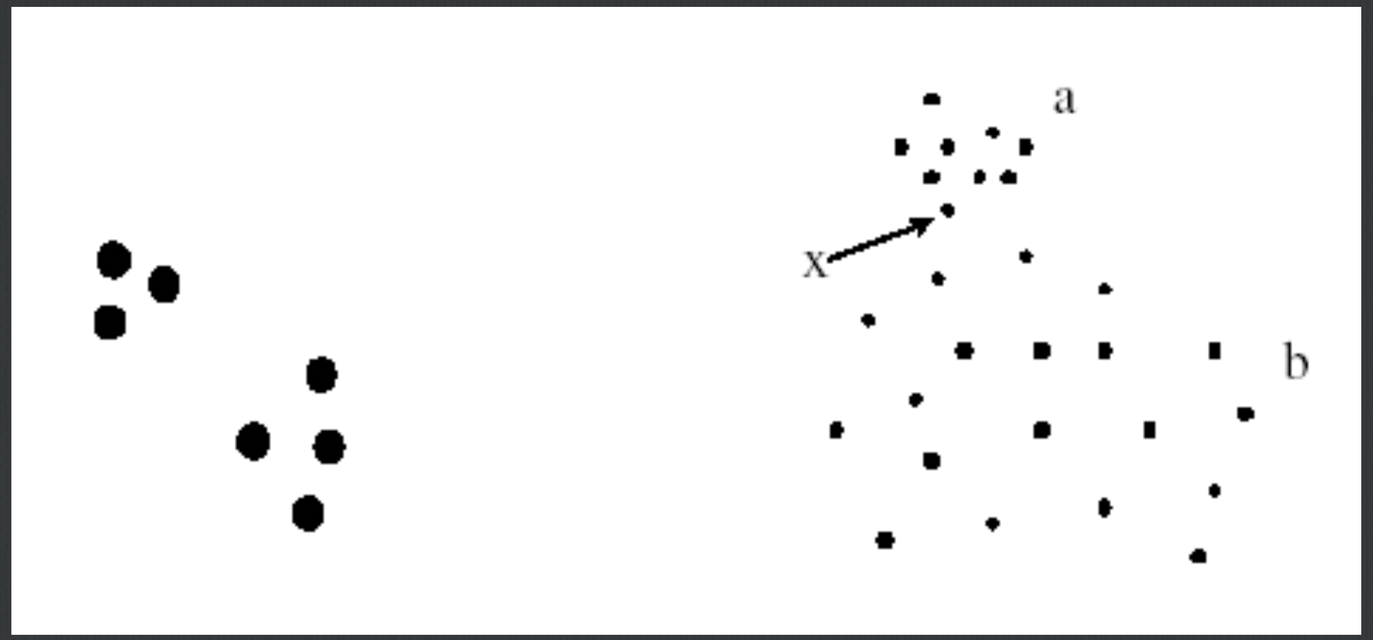
Ambiguous

Less ambiguous

Proximity







Dots that are near one another are grouped
Dots that are concentrated are grouped
[from Ware 00]

Proximity

Tuesday, November 4
Election Day
An American Menu $75
Caesar salad with anchovies, egg, and Parmesan cheese
Clam chowder with Maine lobster and pancetta
Grilled chicken with house-made barbeque sauce with potato purée and greens
Apple and raspberry pecan crisp with vanilla ice cream

Proximity

Tuesday, November 4 —Election Day

An American Menu
$75

Caesar salad with anchovies, egg, and Parmesan cheese

Clam chowder with Maine lobster and pancetta

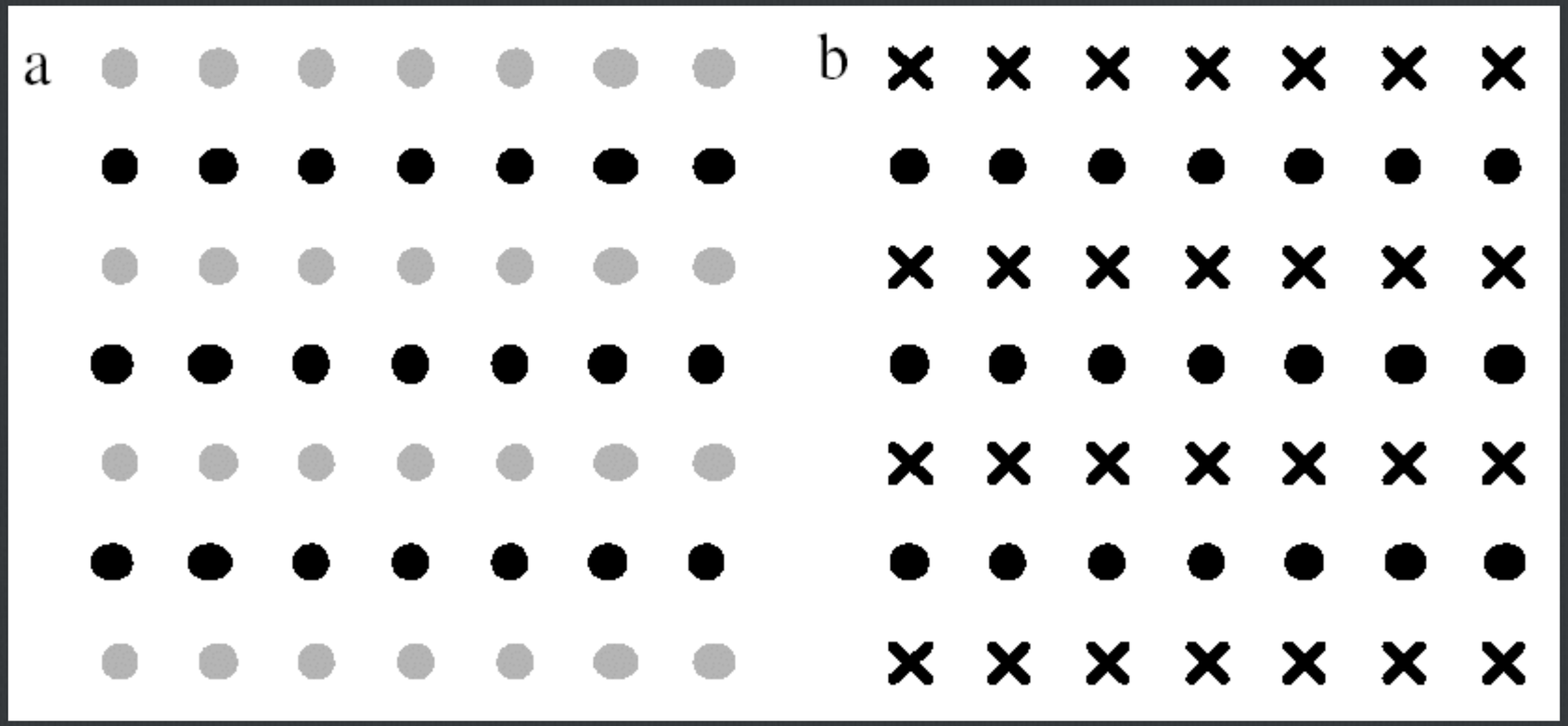
Grilled chicken with house-made barbeque sauce with potato purée and greens

Apple and raspberry pecan crisp with vanilla ice cream

Proximity

- ☐ Think about which elements are logically related – draw a graph if necessary.
- ☐ Then lay them out so that the graph is as untangled as possible.
- ☐ Use size and typeface to allow scanning for groups.

Similarity



Rows dominate due to similarity [from Ware 04]

Similarity

TUESDAY, NOVEMBER 4 — ELECTION DAY

AN AMERICAN MENU $75

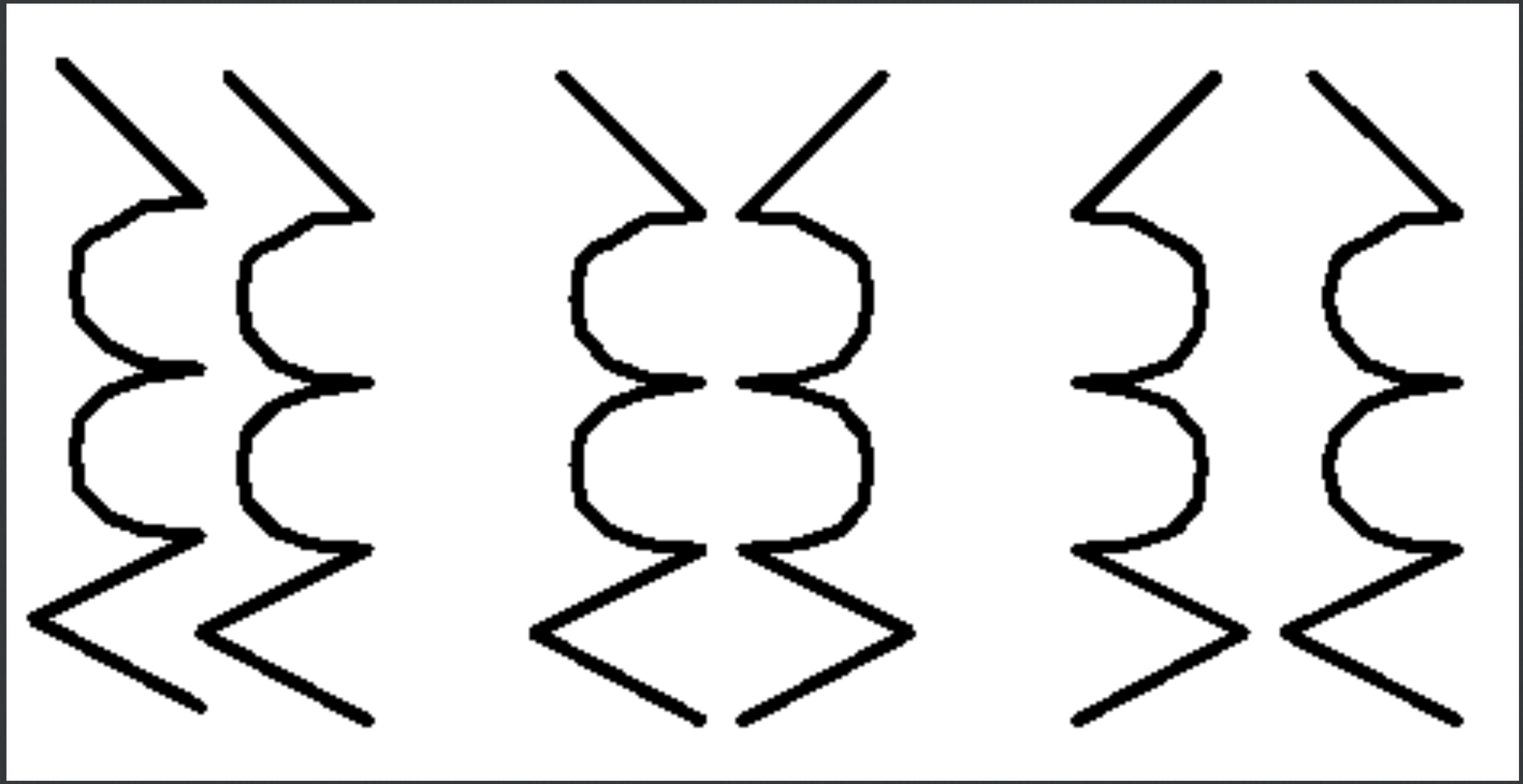
Caesar salad
with anchovies, egg, and Parmesan cheese

Clam chowder
with Maine lobster and pancetta

Grilled chicken
with house-made barbeque sauce with potato purée and greens

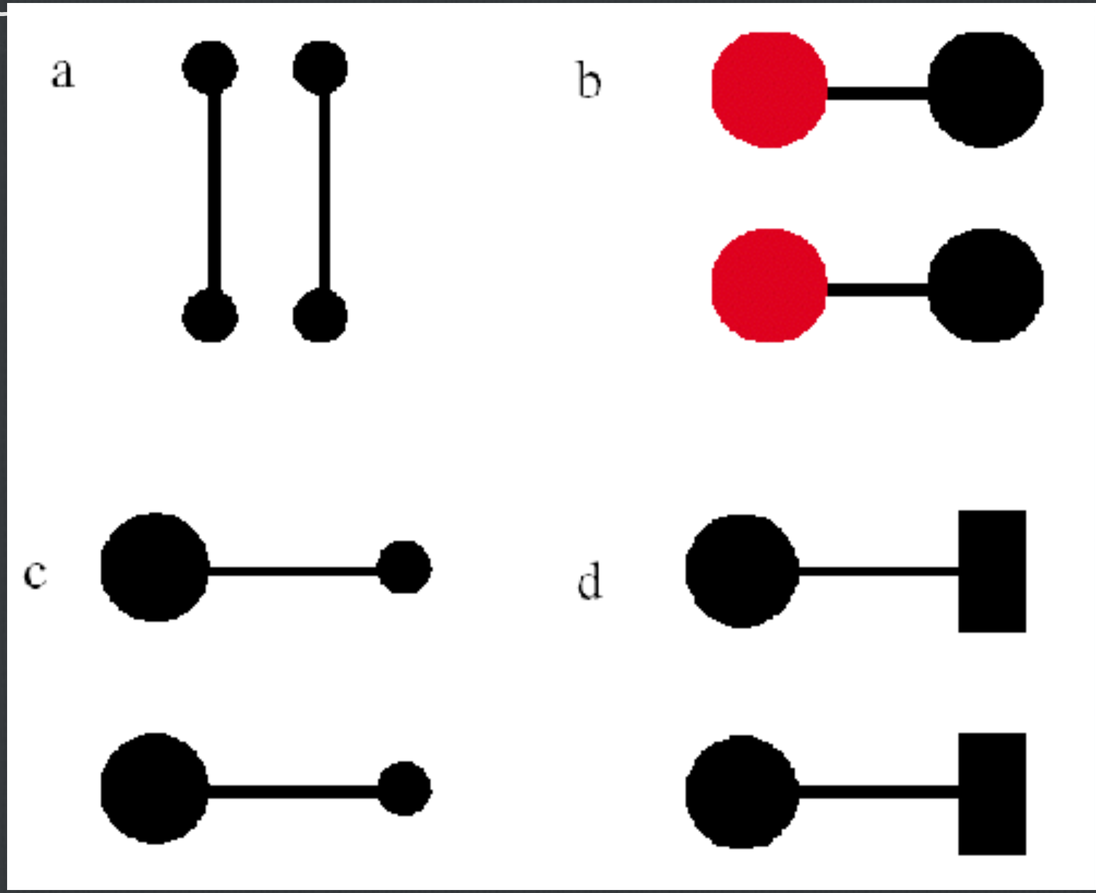
Apple and raspberry pecan crisp
with vanilla ice cream

Symmetry



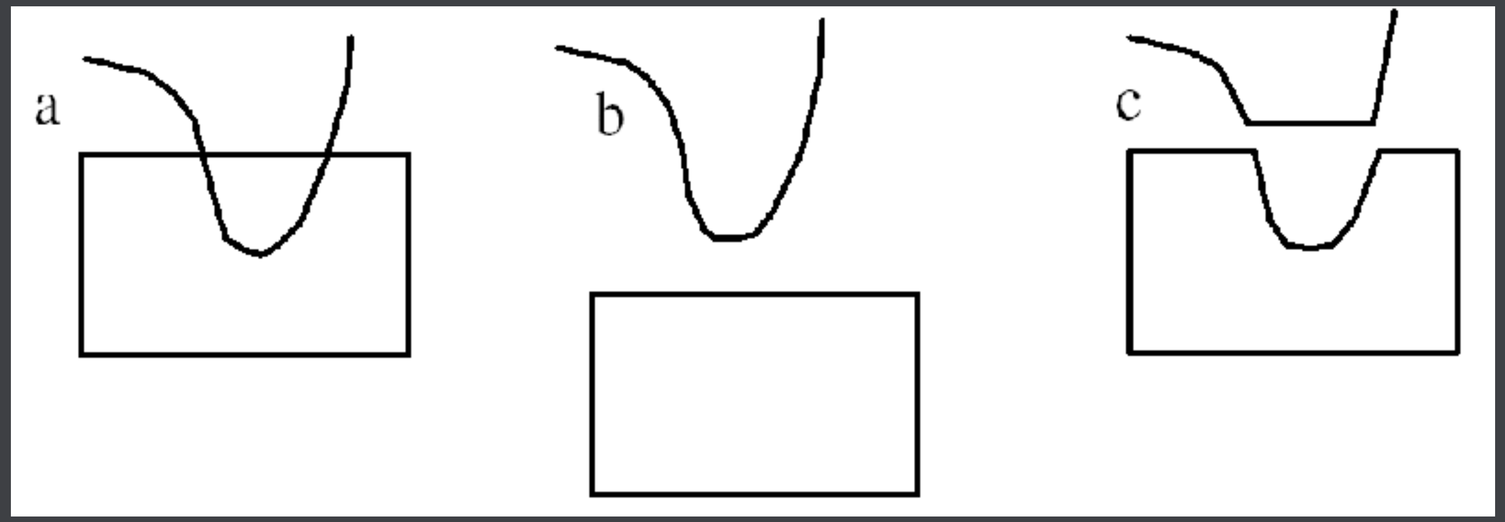
Bilateral symmetry gives strong sense of figure [from Ware 04]

Connectedness

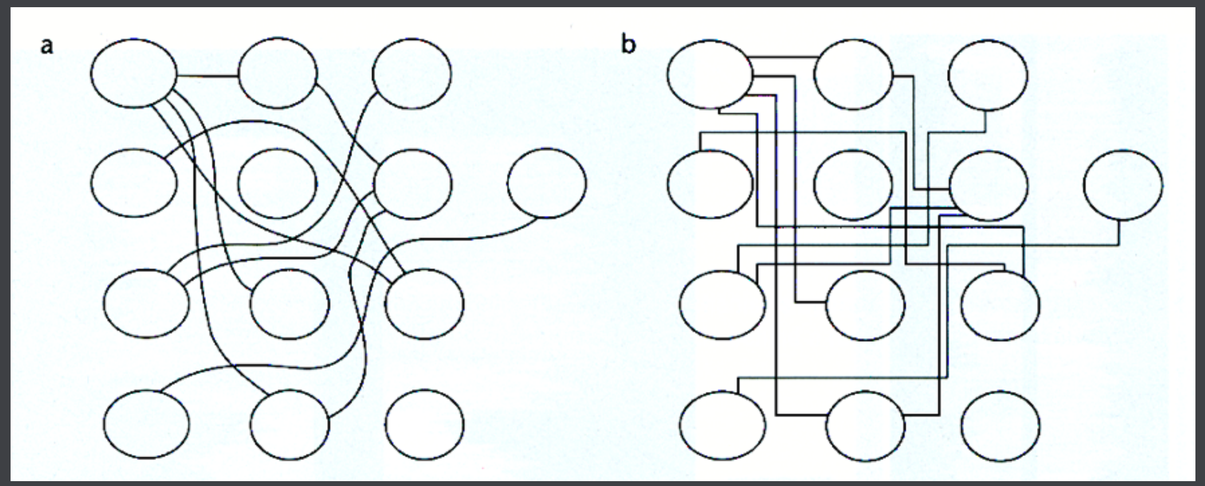


Connectedness overrules proximity, size, color shape [from Ware 04]

Continuity

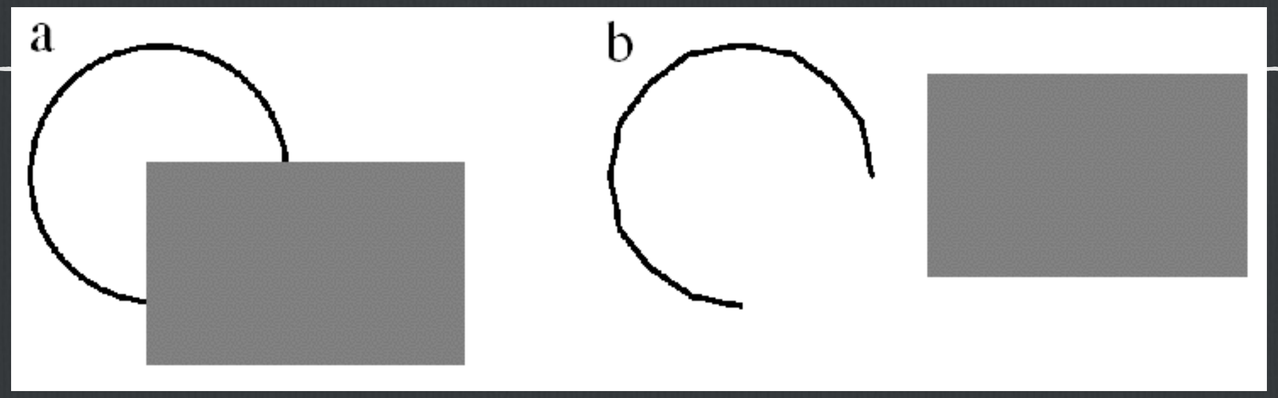


We prefer smooth not abrupt changes [from Ware 04]

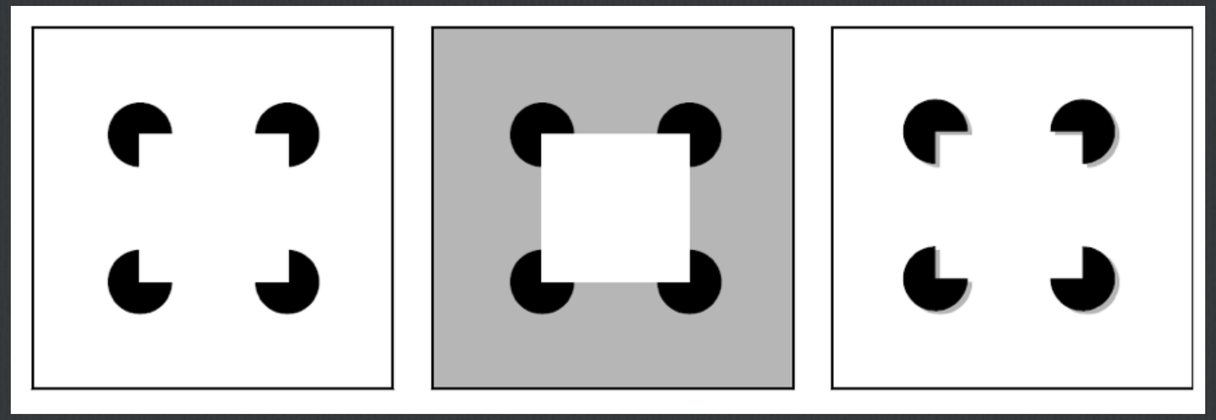


Connections are clearer with smooth contours [from Ware 04]

Closure

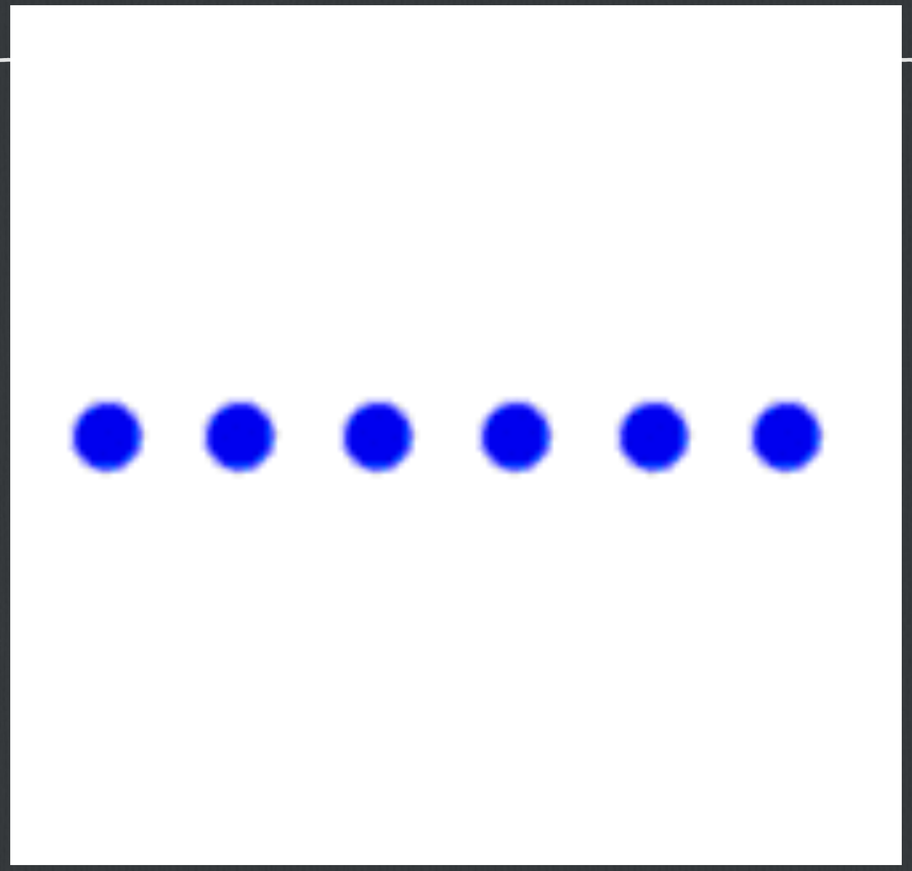


We see a circle behind a rectangle, not a broken circle [from Ware 04]



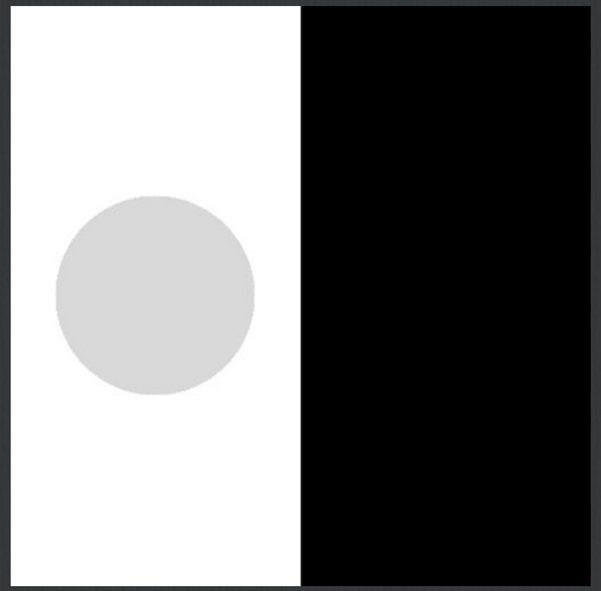
Illusory contours [from Durand 02]

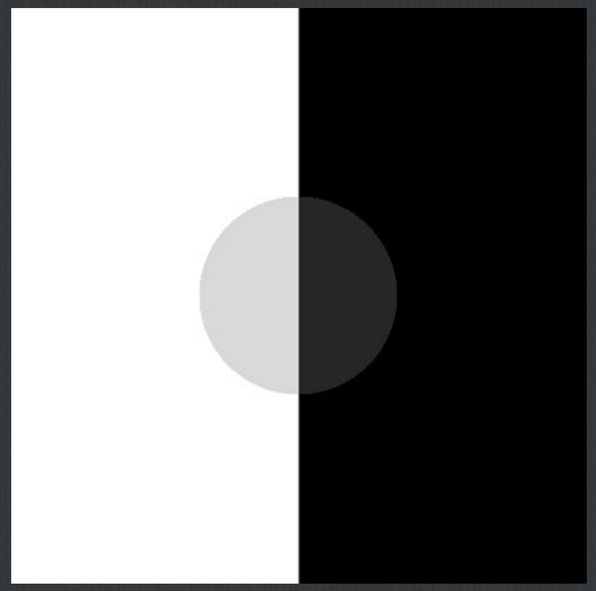
Common Fate

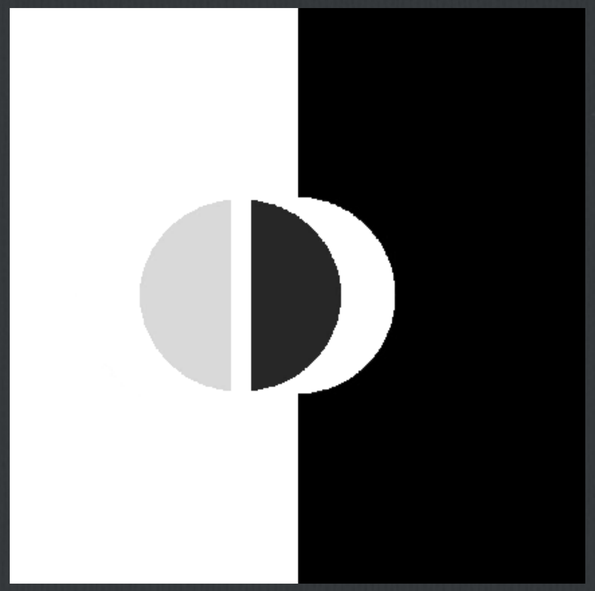


Dots moving together are grouped

Transparency







Gestalt Principles in UI Design

- Think about the logical organization of the information your want to present.
- Use Gestalt principles to express those relationships visually to the user. Choices of proximity, similarity, etc. should reflect the logical structure of the information.
- (Corollary: Whenever visual grouping according to Gestalt principles does not match logical organization, users are confused.)

activity!

you are now in a band with your group mates (or neighbors)

- ☐ go to wikipedia and hit “random” (http://en.wikipedia.org/wiki/Special:Random)
  - ☐ article title is the name of your band
- ☐ find a random quotes page (http://www.quotationspage.com/random.php3)
  - ☐ last 4-5 words of last quote on page is your album title
- ☐ go to flickr and explore recent photos (http://flickr.com/explore/interesting/7days)
  - ☐ 3rd photo is your album cover

OVER MIND

it is completely honest.

ARRAKIS. ONE DAY AT A TIME

Principles

- ☐figure/ground
- ☐proximity
- ☐similarity
- ☐symmetry
- ☐connectedness
- ☐continuity
- ☐closure
- ☐common fate
- ☐transparency

cs160.valkyriesavage.com

visual design & gestalt

July 21, 2015

Valkyrie Savage