

Science

Communication

Uni Basel – 12.12.2024

The Modular Thinking Mindset



Superdot Studio

Nicole Lachenmeier

Darjan Hil

Multidimensional area graph
Reflection exercise E




Multidimensional area graph

Reflection exercise E

Total Population

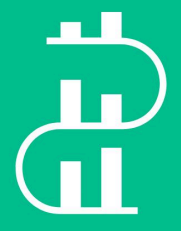
Quantity 2A.5



Area size

Total Population


Sorting 4A.2



Linear axis with line break

EU / non EU

Color 3A.1



Basic Colors

Population Density


Pattern 3D.1



Texture

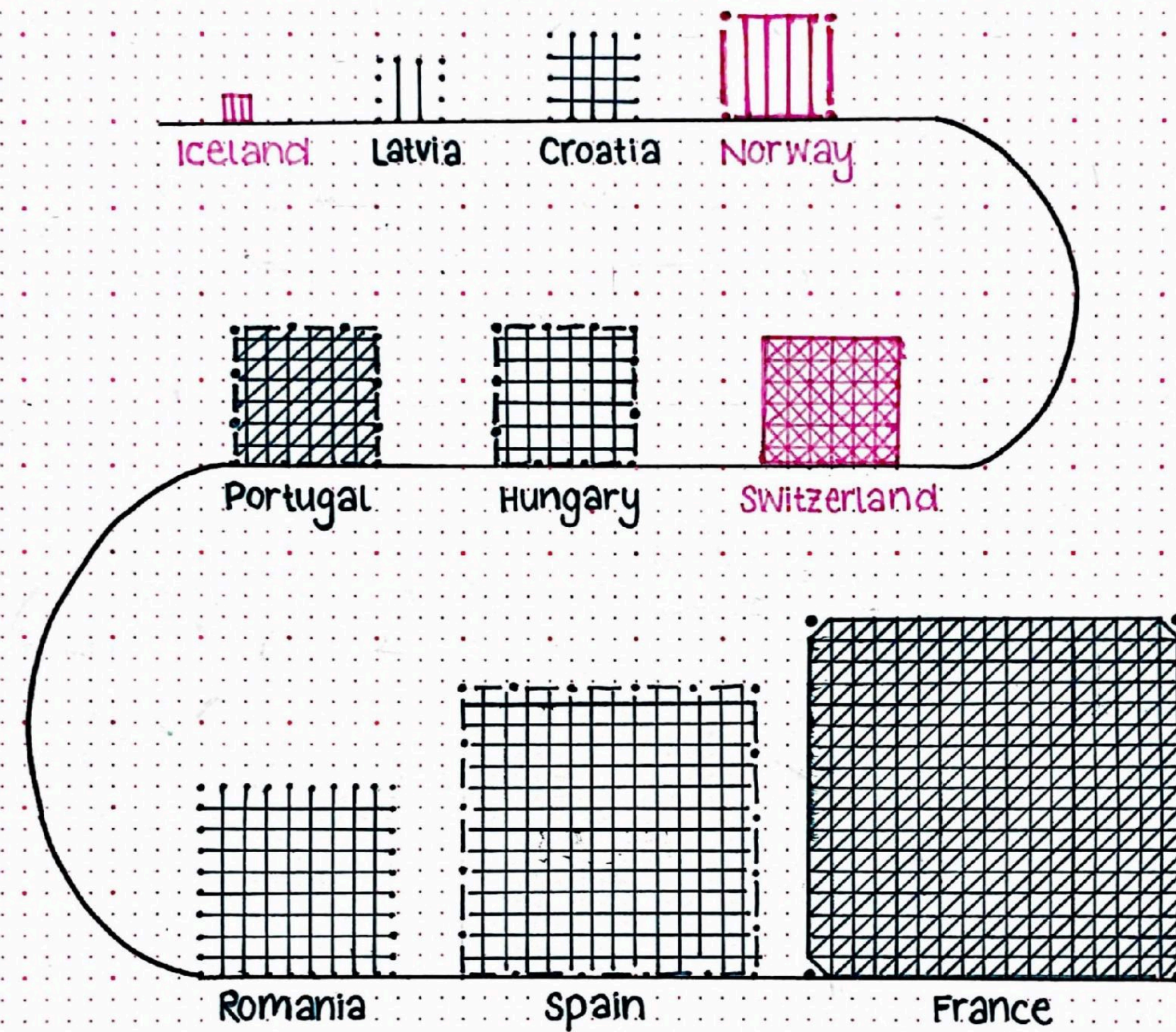
Diff. Population

Contour 3E.2





Interruption






Name / Nr. Nina / 7




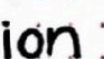



Data → MID Element → Legend

$$a \begin{matrix} \square \\ a \end{matrix} = 1 \text{cm}^2 = 4 \text{ mio.}$$

 = EU  = non. EU.

Population Density:  =    

Difference Population:  =    

Every dot has an identity
Reflection exercise G in-class



Knowledge Visualization
On Data And Design
Reflection exercises
F (In-class + homework) +
G (homework)



Exercise H

In-class

Class Superdot Studio / Modular Information Design
12.12.2024

Task Insights about visualizations
Exercise F

Material A5 grid paper or other paper (portrait format) / 4x color pens / ruler /
scanner app

Step 1 Go to Miro board with exercise F solutions

Step 2 Write two insights about the visualizations
Add the title of the talk

Step 3 Scan (with scanning app) your sketch as .jpg
Upload your sketch/table to Adam till Wednesday 12.12 / 10pm

Visualizing Complexity

Modular Information Design System 80 Elements

What + How



Visualizing Complexity

Modular Thinking Mindset 8 Steps

Why

Modular Thinking Mindset 8 Steps

Why

1. Grundlegende Gestaltungselemente kennen

Overview of all 80 elements

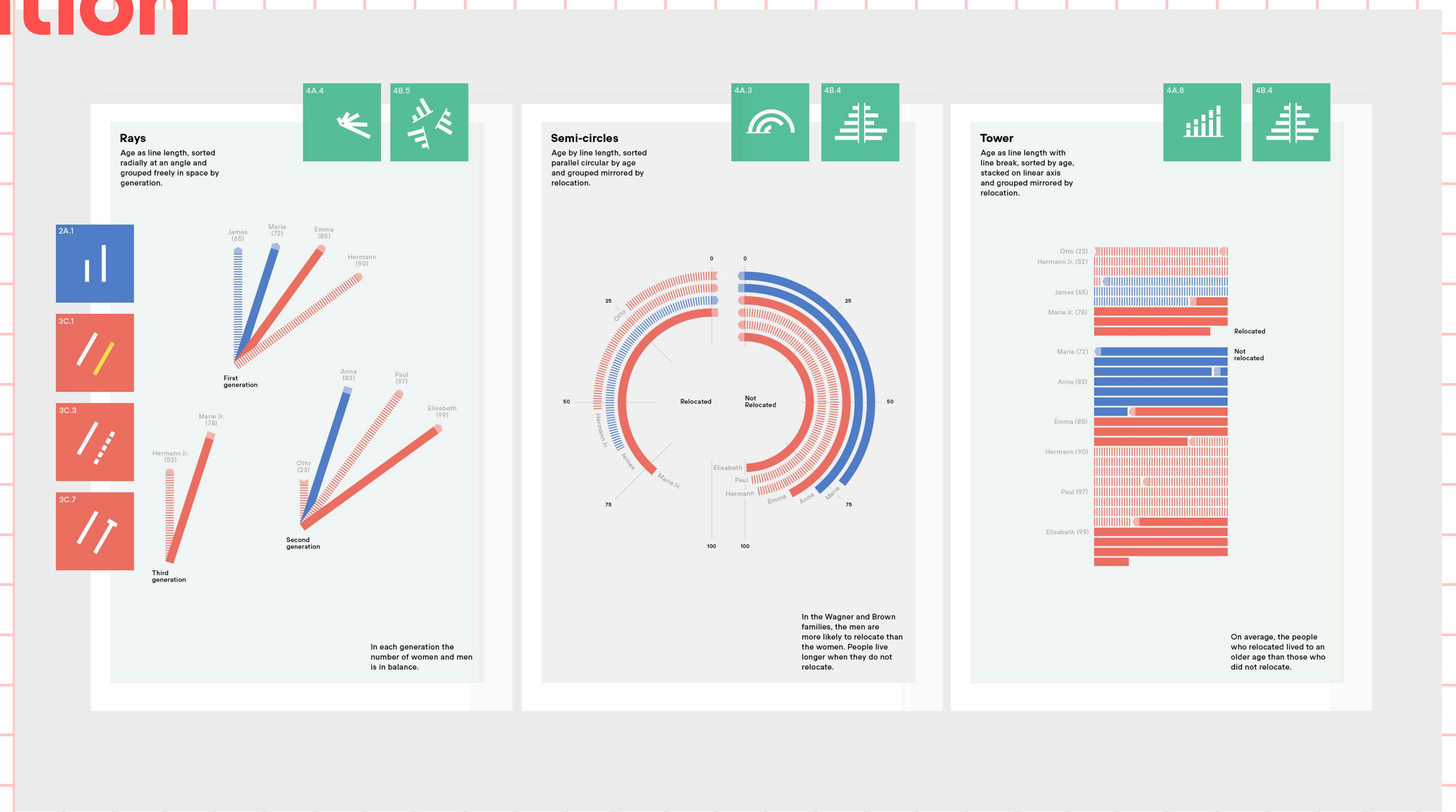
Diagrammatical dimensions		2A Quantity			
2B Position					
2C Relationship					
			Visual dimensions		
3A Color					
	3B Shape				

3C Line					
			3D Pattern		
				3E Contour	
3F Isotype					
			Structuring dimensions		
4A Sorting					
				4B Grouping	

Modular Thinking Mindset 8 Steps

Why

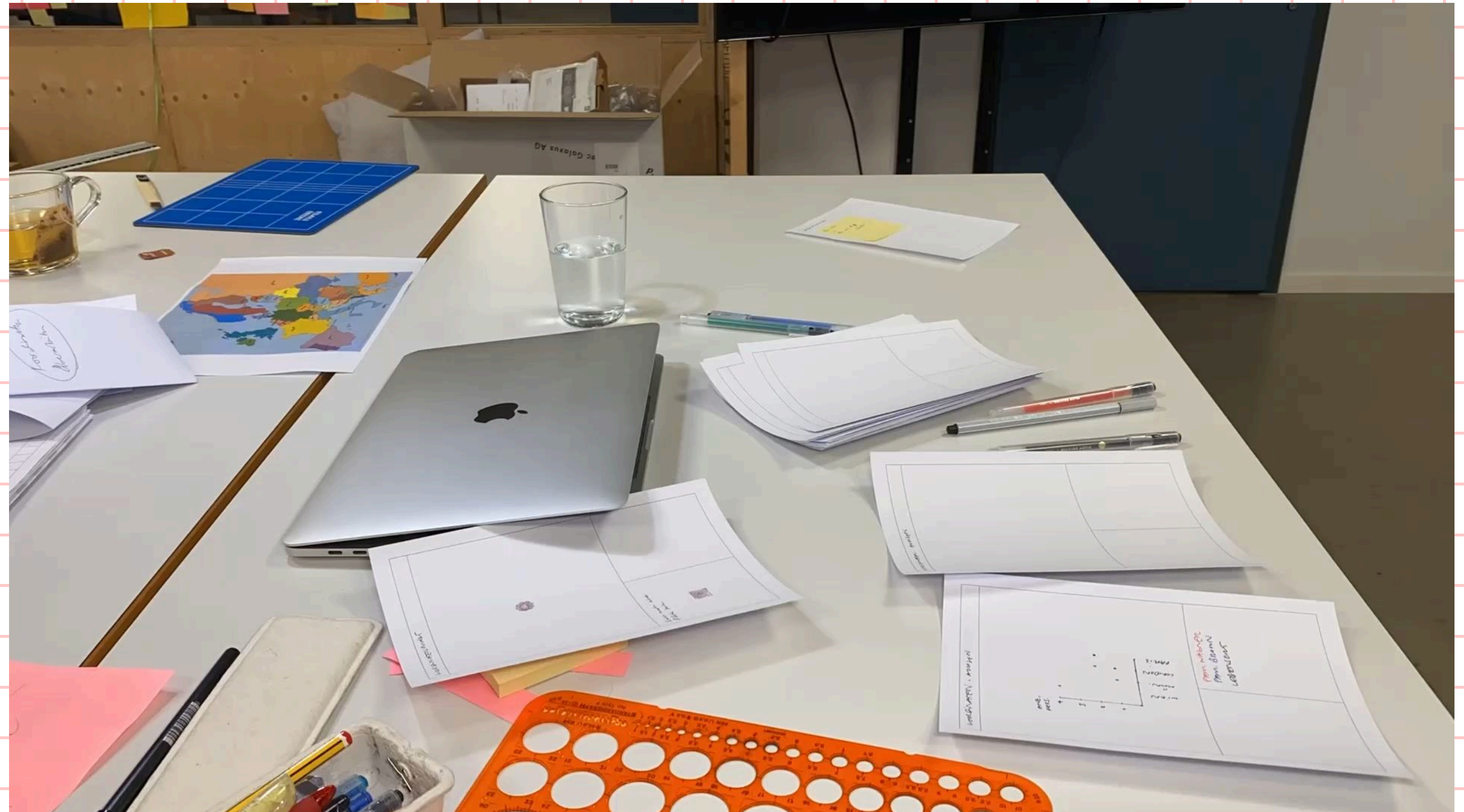
2. Von Varianten zu Optimierung und Innovation



Modular Thinking Mindset 8 Steps

Why

3. Skizzieren für Flow und Tiefe



Modular Thinking Mindset 8 Steps

Why

4. Skizzieren für Partizipation und Transparenz



5. Komplexität Schritt für Schritt steigern und dokumentieren



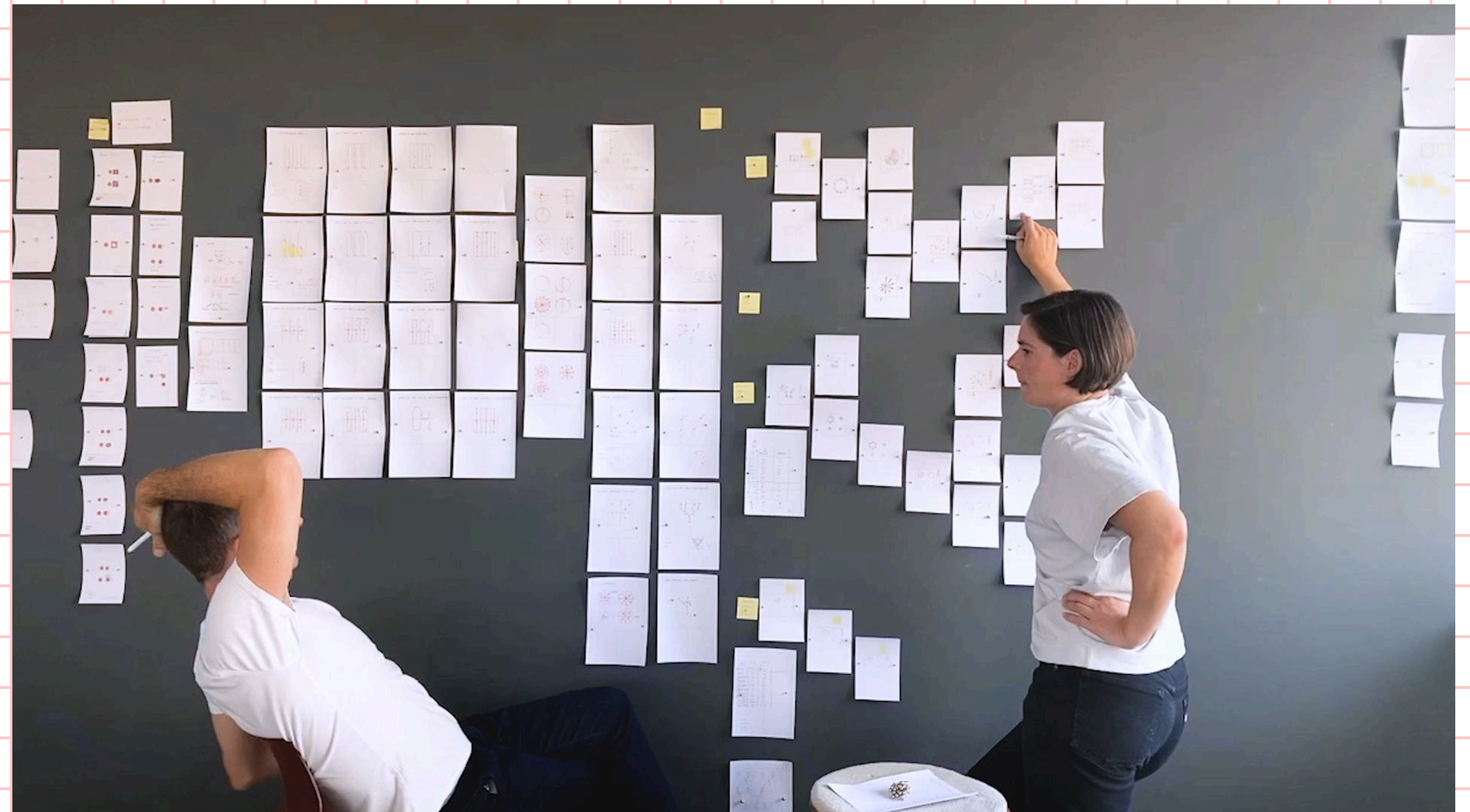
Modular Thinking Mindset 8 Steps

Why

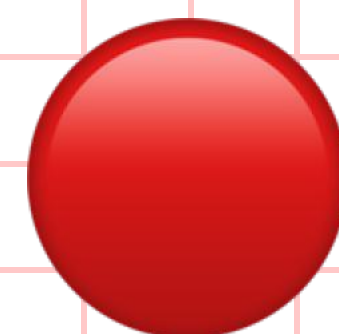
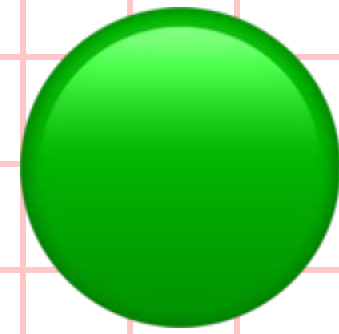
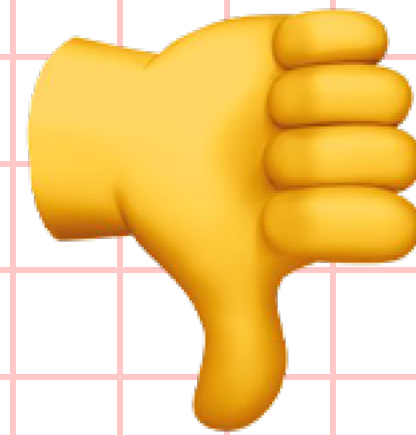
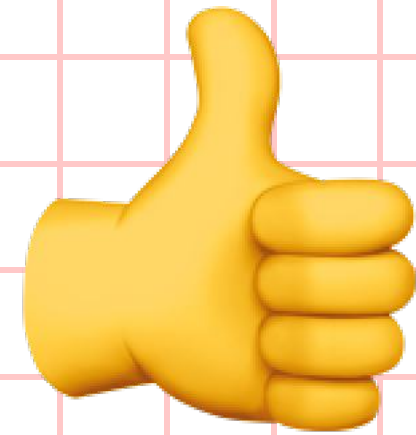
6. Externalisieren, Auslegen und Vergleichen



7. Sortieren, Gruppieren und Hierarchisieren



8. Beurteilen lernen



Modular Thinking Mindset

8 Steps – Why



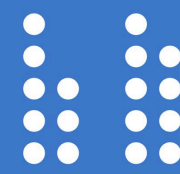

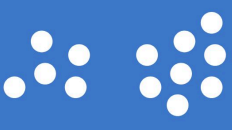





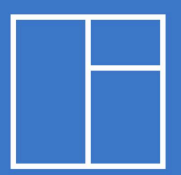
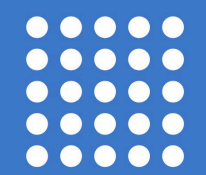

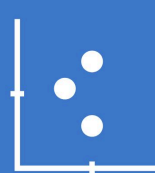
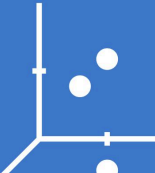
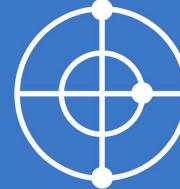


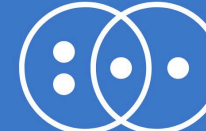

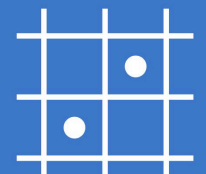
1. **Grundlegende Gestaltungselemente kennen (Mid system)**
2. **Von Varianten zu Optimierung und Innovation**
3. **Skizzieren für Flow und Tiefe**
4. **Skizzieren für Partizipation und Transparenz**
5. **Komplexität Schritt für Schritt steigern und dokumentieren**
6. **Externalisieren, Auslegen und Vergleichen**
7. **Sortieren, Gruppieren und Hierarchisieren
(MID-system wand)**
8. **Beurteilen lernen**

Exercise H Homework

Class	Superdot Studio / Modular Information Design 12.12.2024
Task	Reverse engineering visualizations with Modular Information Design
Material	A5 grid paper or other paper (portrait format) / 4x color pens / ruler / scanner app, visualization examples
Step 1 – what	Decode (reverse engineering) both historical visualization examples in the slides (Minard + Barr)
Step 2 – how	Find the fitting MID elements in the MID elements overview slides Draw the MID elements and write their number on your paper Add also the data dimension used in the graphic (see solution example) Write one insight sentence for each visualization example
Step 3	Scan (with scanning app) your sketch as .jpg Upload your sketch/table to Adam till Wednesday 18.12 / 10am


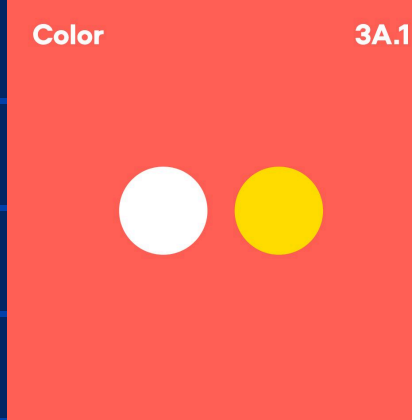
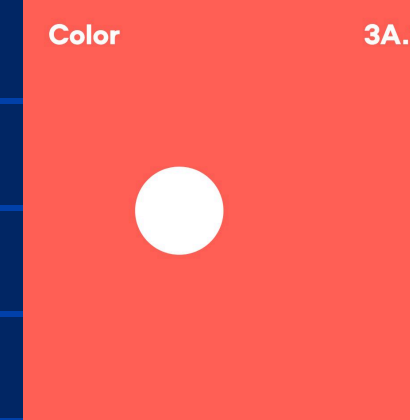
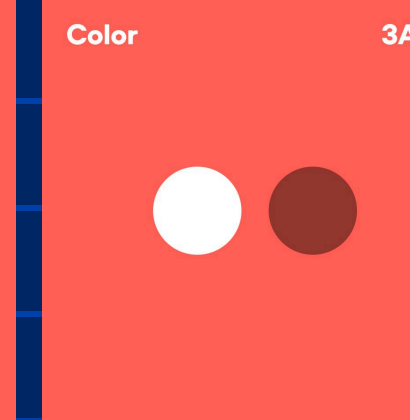
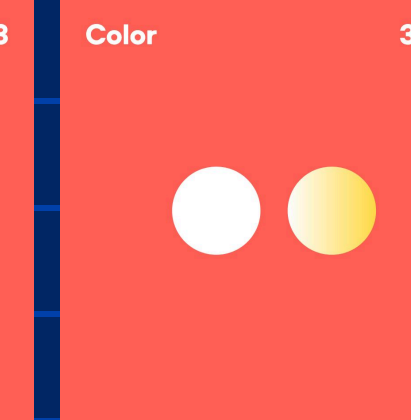
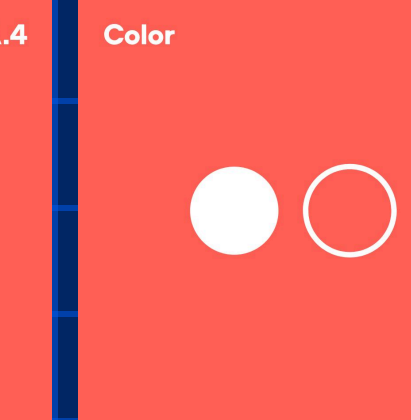
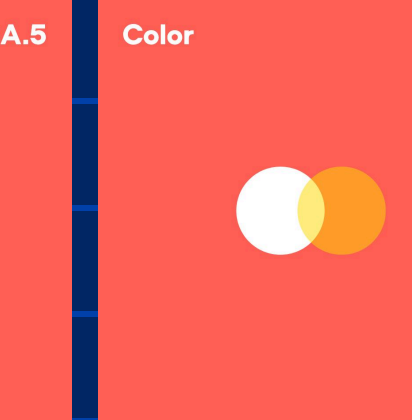
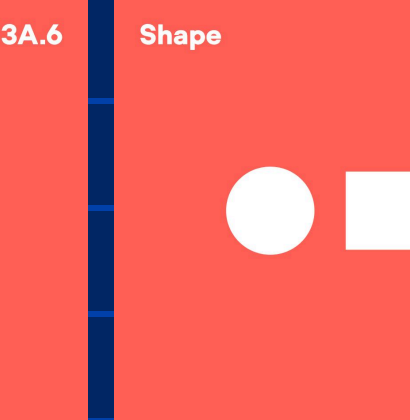
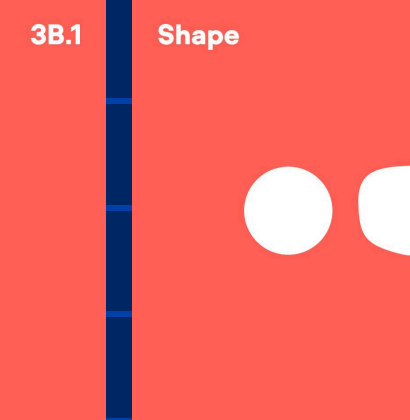
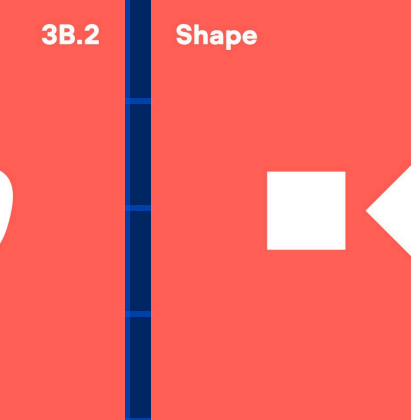

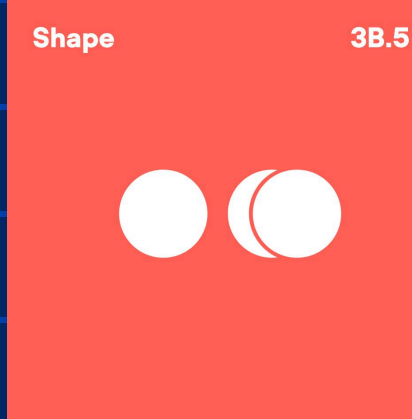
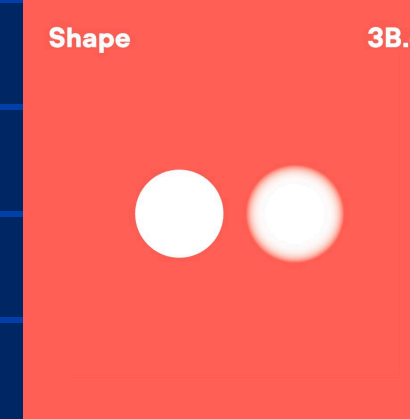
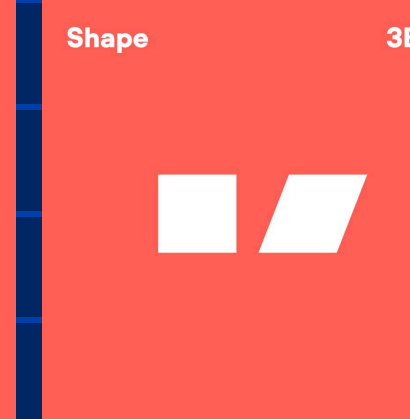
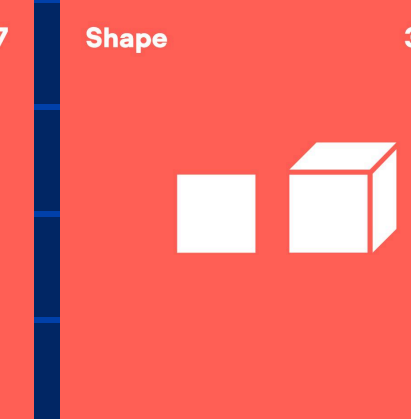
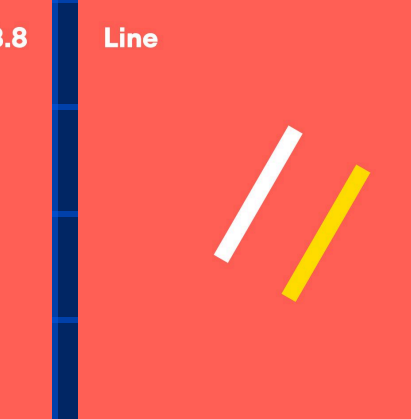
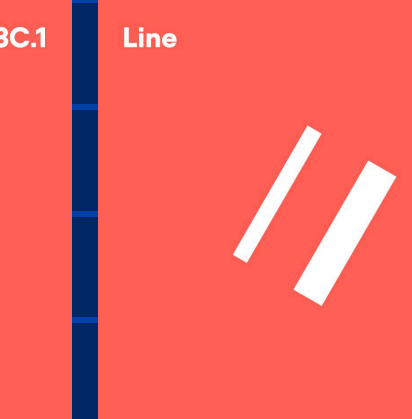
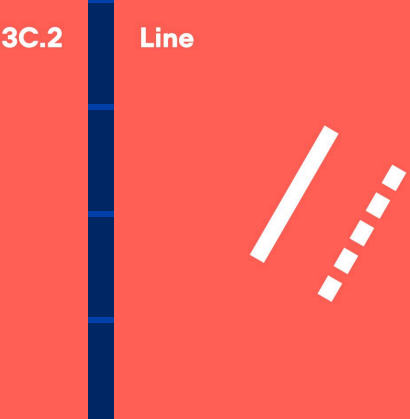
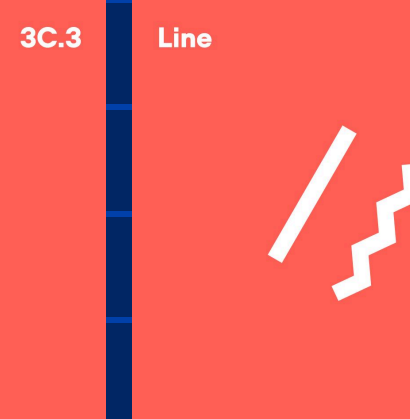
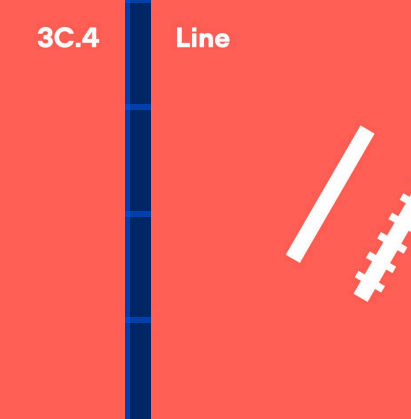

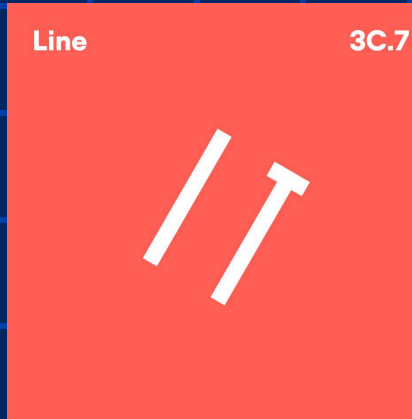
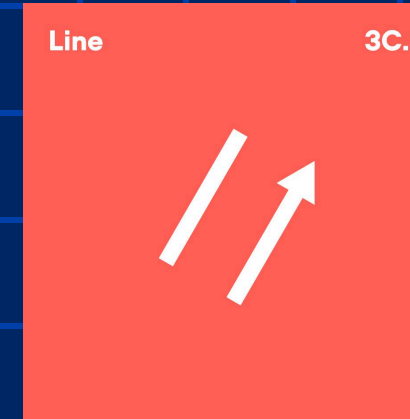
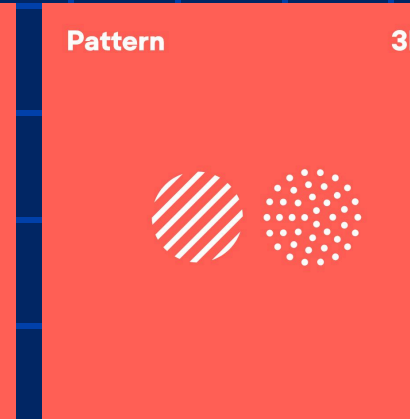
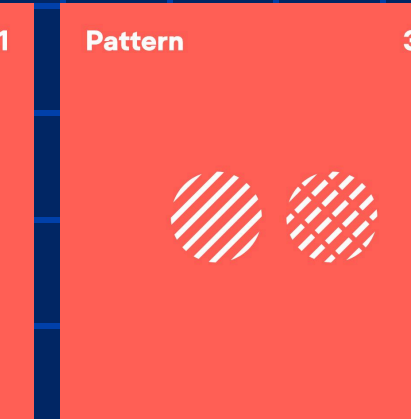

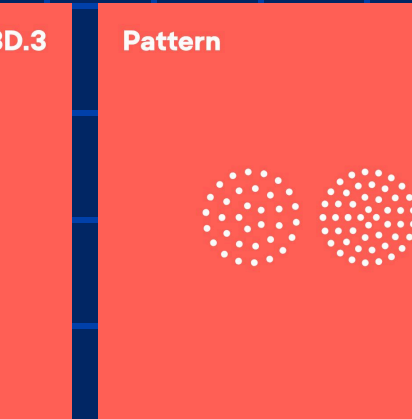
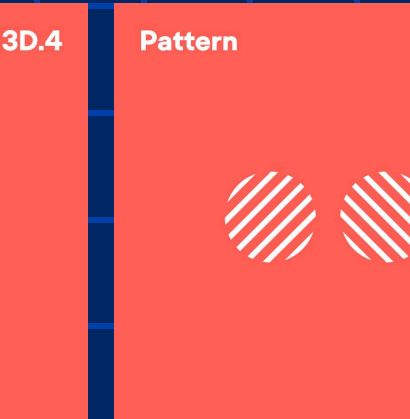
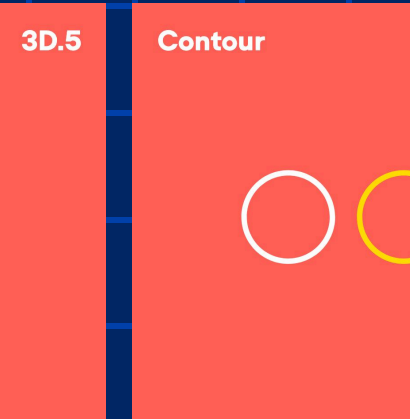
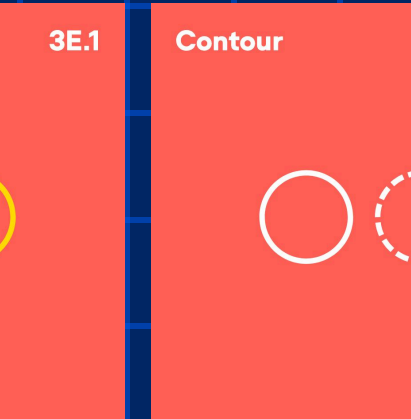


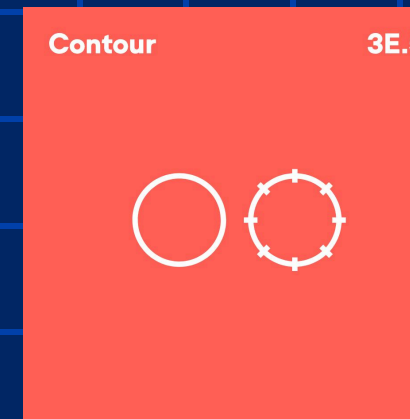
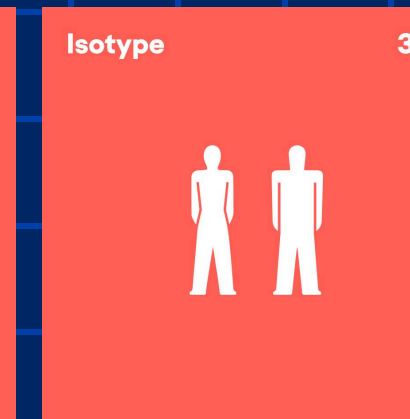
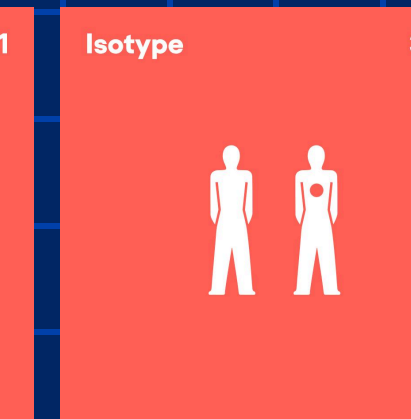

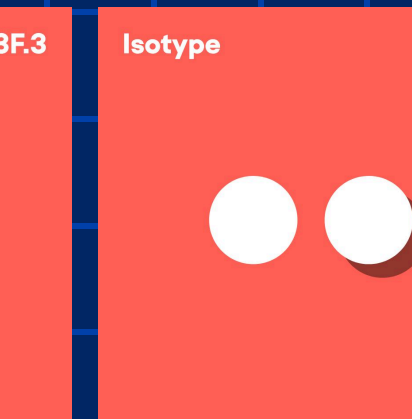
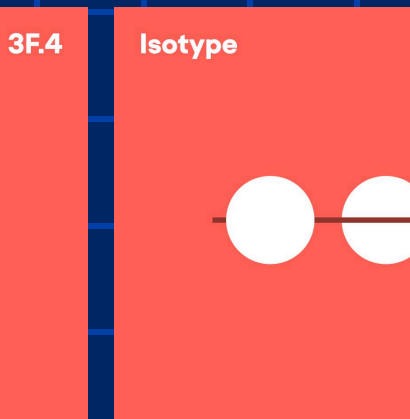
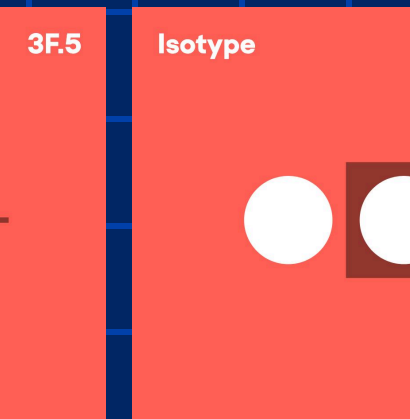
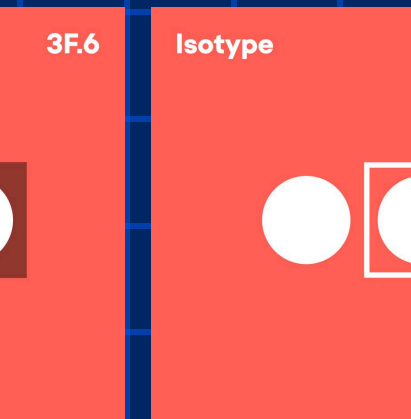
Modular Information Design

Diagrammatical Dimensions: 25 elements

Quantity 2A.1 	Quantity 2A.2 	Quantity 2A.3 	Quantity 2A.4 	Quantity 2A.5 	Quantity 2A.6 	
Line length	Line length Countable	Line length with line break	Line length Countable with line break	Area size	Area size Countable	
Quantity 2A.7 	Quantity 2A.8 	Quantity 2A.9 	Quantity 2A.10 	Quantity 2A.11 	Quantity 2A.12 	Quantity 2A.13 
Area size 100% as a circle from the center out	Area size 100% as a circle from the edge in	Area size 100% in an angle as a circle	Area size 100% in an angle as a circle segment	Area size 100% in an angle as a ring	Area size 100% as a rectangle	Area size 100% as a countable rectangle
Position 2B.1 	Position 2B.2 	Position 2B.3 	Position 2B.4 	Position 2B.5 		
Points in space One coordinate axis	Points in space Two coordinate axes	Points in space Three coordinate axes	Points in space Polar axes	Points in space Geographical coordinates		
Relationship 2C.1 	Relationship 2C.2 	Relationship 2C.3 	Relationship 2C.4 	Relationship 2C.5 	Relationship 2C.6 	Relationship 2C.7 
Network Non-hierarchical	Network Hierarchical	Network Linear	Network Circular	Nesting Intersection sets	Nesting Stacking	Nesting Matrix
















Modular Information Design

Visual Dimensions: 40 elements

 <p>Shape 3B.4</p>	 <p>Color 3A.1</p>	 <p>Color 3A.2</p>	 <p>Color 3A.3</p>	 <p>Color 3A.4</p>	 <p>Color 3A.5</p>	 <p>Color 3A.6</p>	 <p>Shape 3B.1</p>	 <p>Shape 3B.2</p>	 <p>Shape 3B.3</p>
Direction	Basic Colors	Saturation with white	Saturation with black	Color gradient	Filled and empty	Transparency	Geometrical	Organic	Rotation
 <p>Line 3C.6</p>	 <p>Shape 3B.5</p>	 <p>Shape 3B.6</p>	 <p>Shape 3B.7</p>	 <p>Shape 3B.8</p>	 <p>Line 3C.1</p>	 <p>Line 3C.2</p>	 <p>Line 3C.3</p>	 <p>Line 3C.4</p>	 <p>Line 3C.5</p>
Organic	Stacking	Blurring	Transformation	Volume	Color	Thickness	Interruption	Roughing	Details
 <p>Contour 3E.3</p>	 <p>Line 3C.7</p>	 <p>Line 3C.8</p>	 <p>Pattern 3D.1</p>	 <p>Pattern 3D.2</p>	 <p>Pattern 3D.3</p>	 <p>Pattern 3D.4</p>	 <p>Pattern 3D.5</p>	 <p>Contour 3E.1</p>	 <p>Contour 3E.2</p>
Thickness	Detail Beginning or end	Arrow	Texture	Broken lines	Line thickness	Density	Direction	Color	Interruption
 <p>Isotype 3F.8</p>	 <p>Contour 3E.4</p>	 <p>Contour 3E.5</p>	 <p>Isotype 3F.1</p>	 <p>Isotype 3F.2</p>	 <p>Isotype 3F.3</p>	 <p>Isotype 3F.4</p>	 <p>Isotype 3F.5</p>	 <p>Isotype 3F.6</p>	 <p>Isotype 3F.7</p>
Background Figurative	Shape	Details	Figurative Shape	Figurative Shape Detail	Direction	Background Shaded	Background / Foreground	Background Areal	Frame or separating line

Modular Information Design

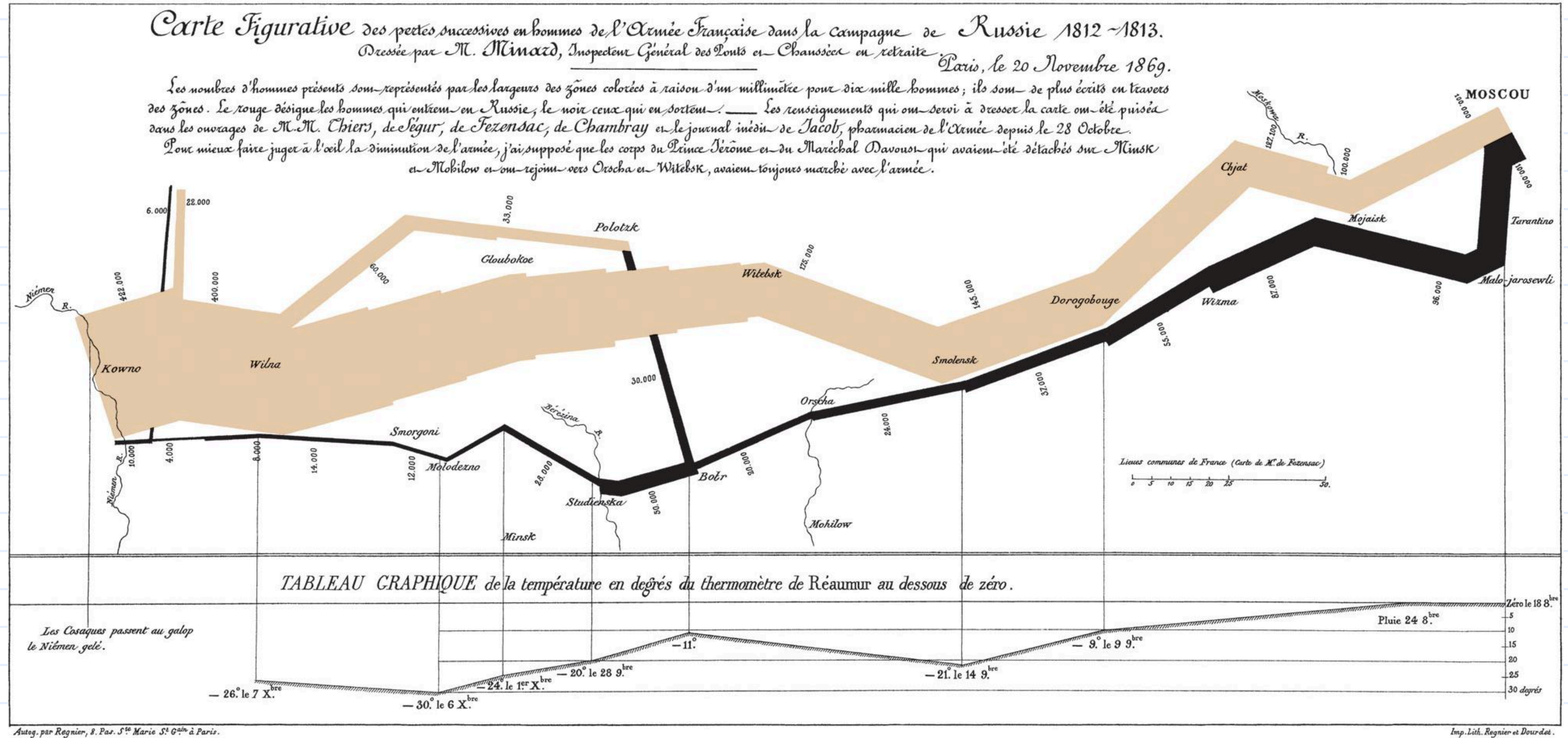
Structuring Dimensions: 15 Elements

Sorting 4A.3  Circular Parallel	Sorting 4A.4  Radially at an angle	Sorting 4A.5  Radially Evenly distributed	Sorting 4A.6  Radially Evenly distributed on Shape	Sorting 4A.7  Axis Free Shape	Sorting 4A.8  Linear axis Stacked	Sorting 4A.9  Free without axis or point	Sorting 4A.1  Linear axis	Sorting 4A.2  Linear axis with line break
Grouping 4B.1  Linear	Grouping 4B.2  Grid	Grouping 4B.3  On Shape or angle	Grouping 4B.4  Mirroring	Grouping 4B.5  Free in space	Grouping 4B.6  On levels			

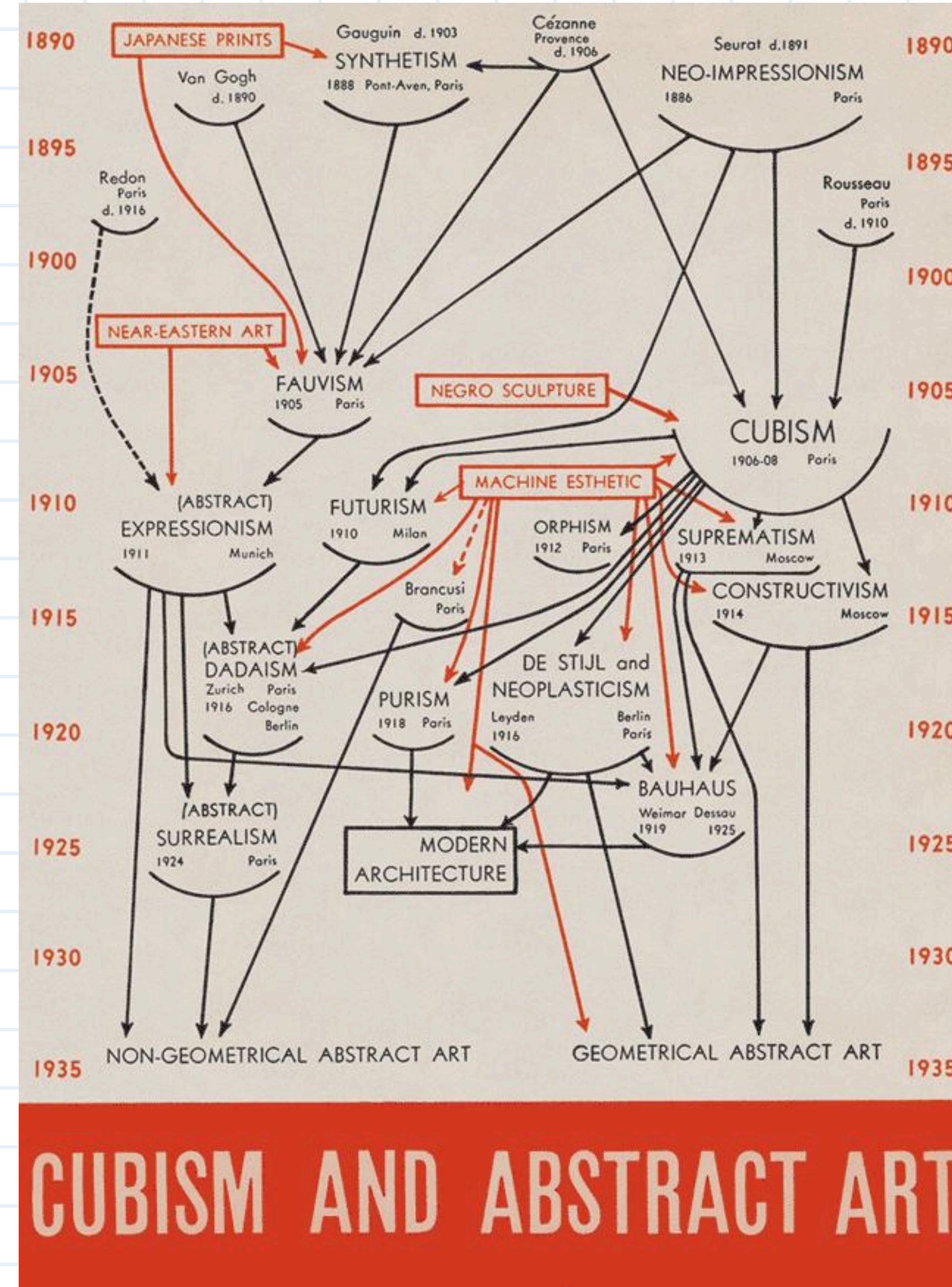
Reverse engineering

Exercise H: homework

Historical example A



Reverse engineering Exercise H: homework Historical example B



[Alfred H. Barr, Jr. for the 1936 MoMA exhibition Cubism and Abstract Art.](#)

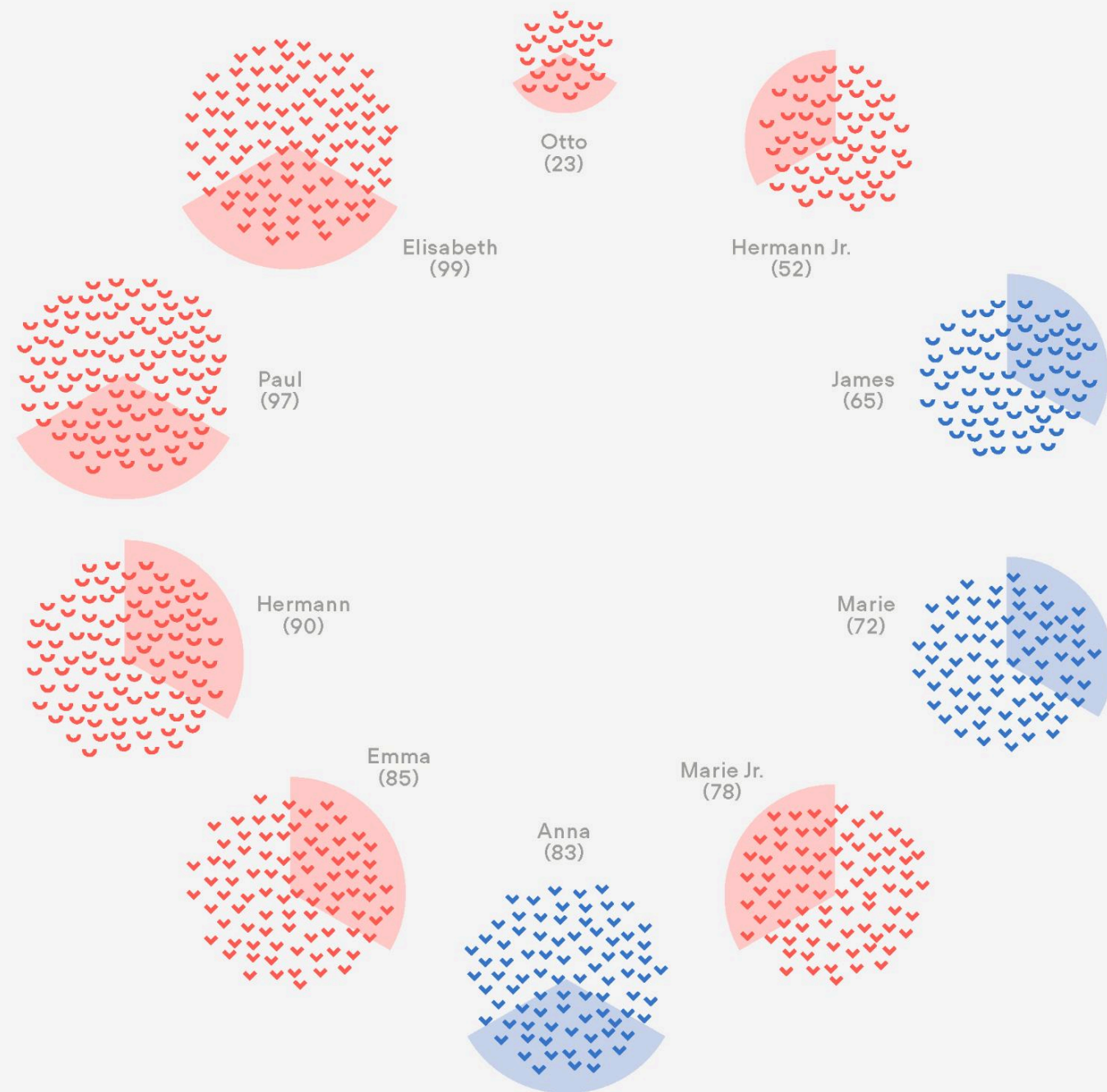
Reverse engineering visualizations

Exercise G homework

Solution example

Swarm

Visualization example title



1 Insight as text

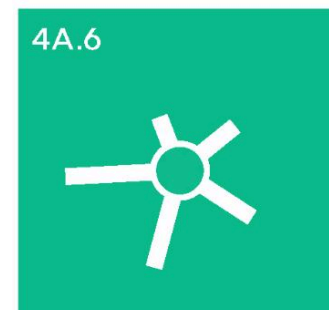
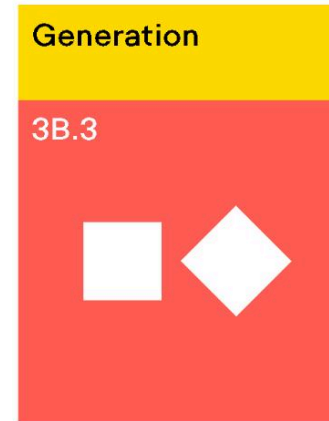
There are three pairs of people of a similar age, each belonging to the same generation, but of different gender.



Legend with

Data dimensions

MID element with number



Resources Superdot Studio

Book [Visualizing Complexity](#)
[Modular Information Design Handbook](#)

Article [Grafikmagazin: Komplexität Attraktiv machen](#)
[Organisator Magazin: Auf den ersten Blick klar](#)

Online Event Series [On Data And Design](#)
Video collection hosted by Superdot Studio

Podcast [This is HCD: Nicole Lachenmeier 'UN-Designing Complexity: Beyond Templates to True Visualization'](#)

Podcast [Nodes of Design](#)

Podcast [PolicyViz Podcast](#)

Course [Thinkific](#)

Course [Domestika](#)

More [Superdot.studio](#)

Further Reading

-
- | | |
|--------------|---|
| Book | <u>Christiansen, Jen. Building Science Graphics: An Illustrated Guide to Communicating Science through Diagrams and Visualizations. First edition. Boca Raton, FL: AK Peters, 2023. Print.</u> |
| Book | <u>Pontis, Sheila, and Michael Babwahsingh. Information Design Unbound: Key Concepts and Skills for Making Sense in a Changing World. London: Bloomsbury Publishing, 2024. Print.</u> |
| Paper | Corrigendum: The Science of Visual Data Communication: What Works |
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**Thank you very much
for your participation!**