

**Science  
Communication  
Uni Basel – 12.12.2024**

**The Modular Thinking Mindset**



**Superdot Studio  
Nicole Lachenmeier  
Darjan Hil**

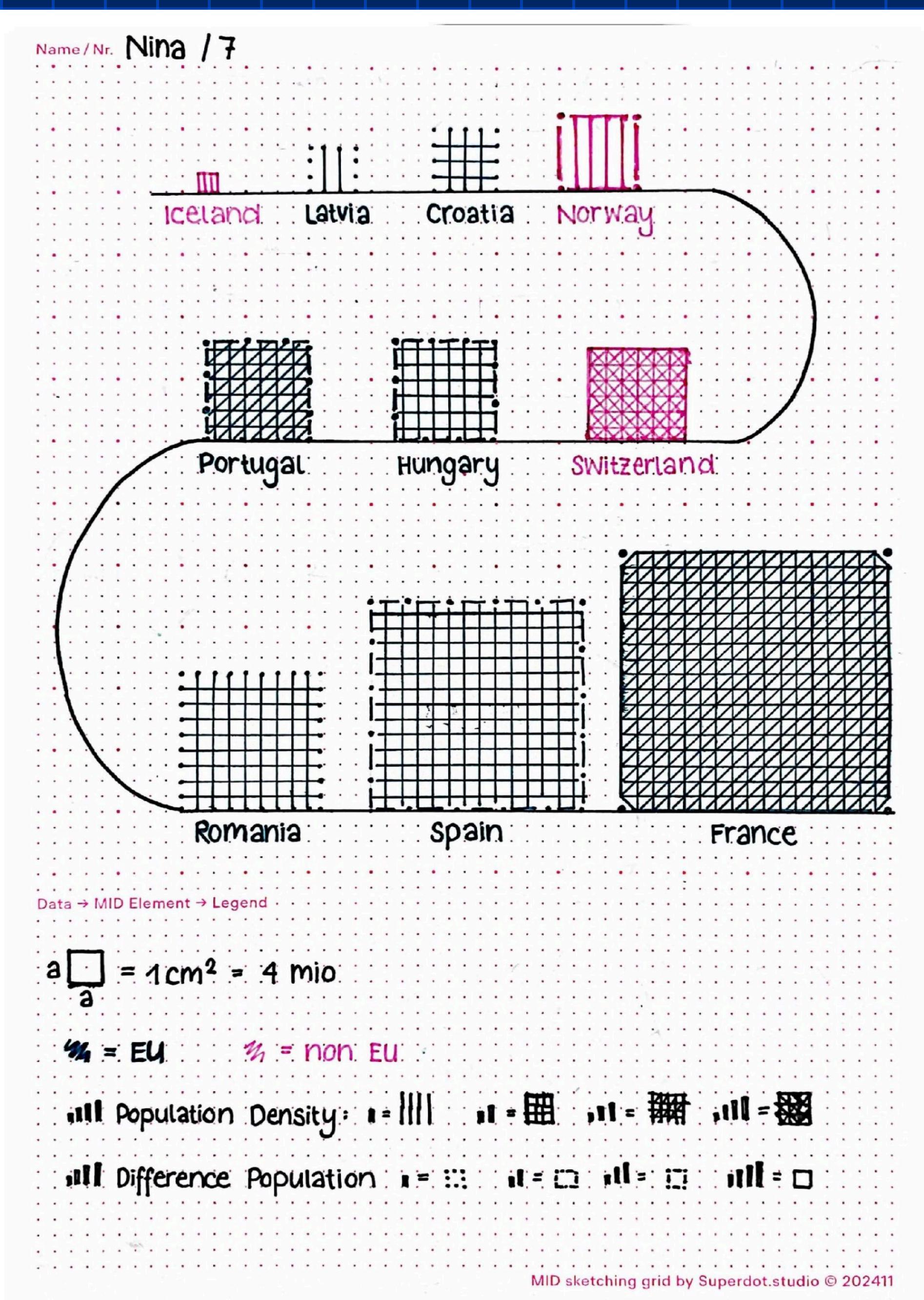
## Multidimensional area graph

### Reflection exercise E



# Multidimensional area graph

## Reflection exercise E



**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

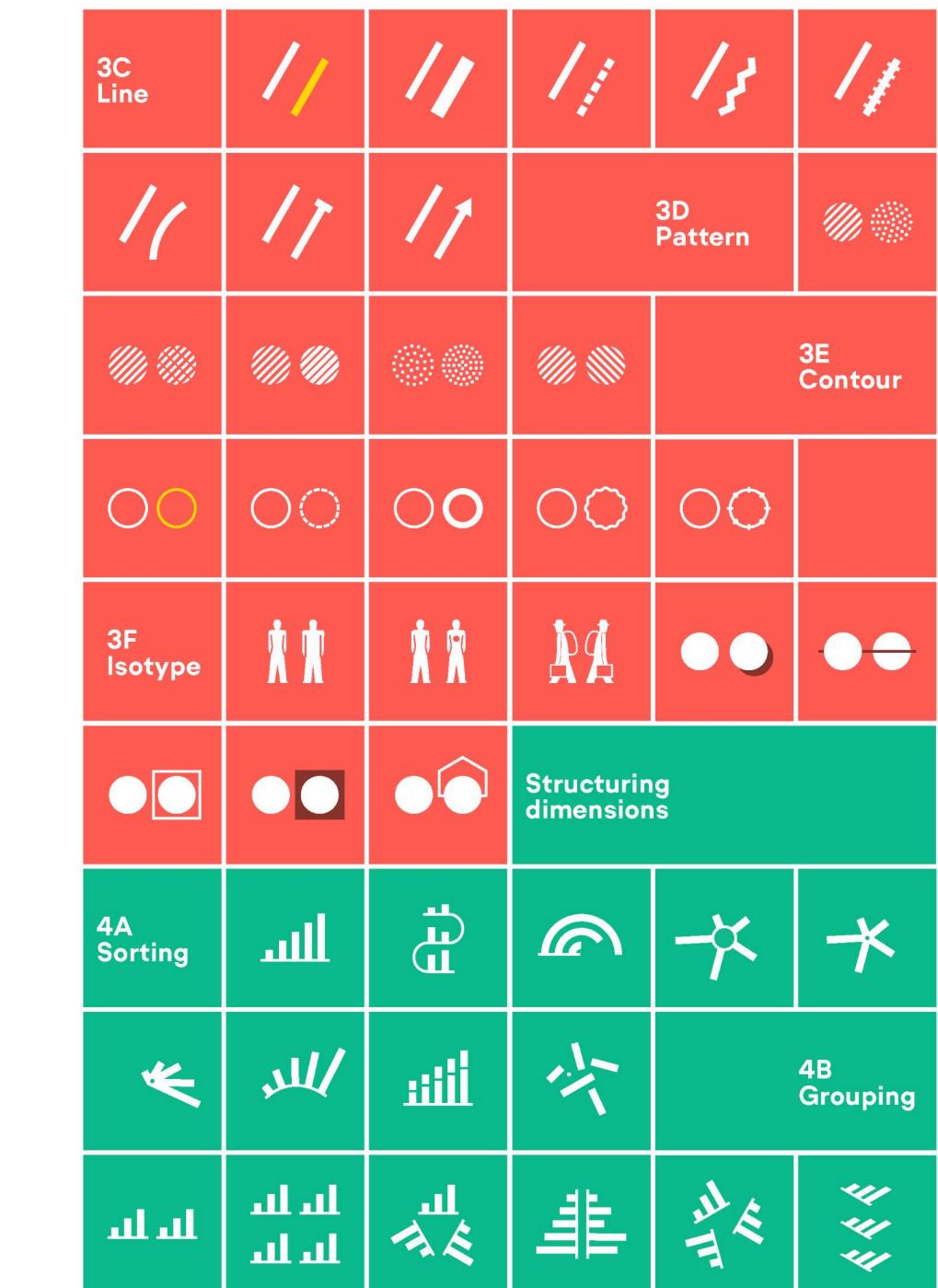
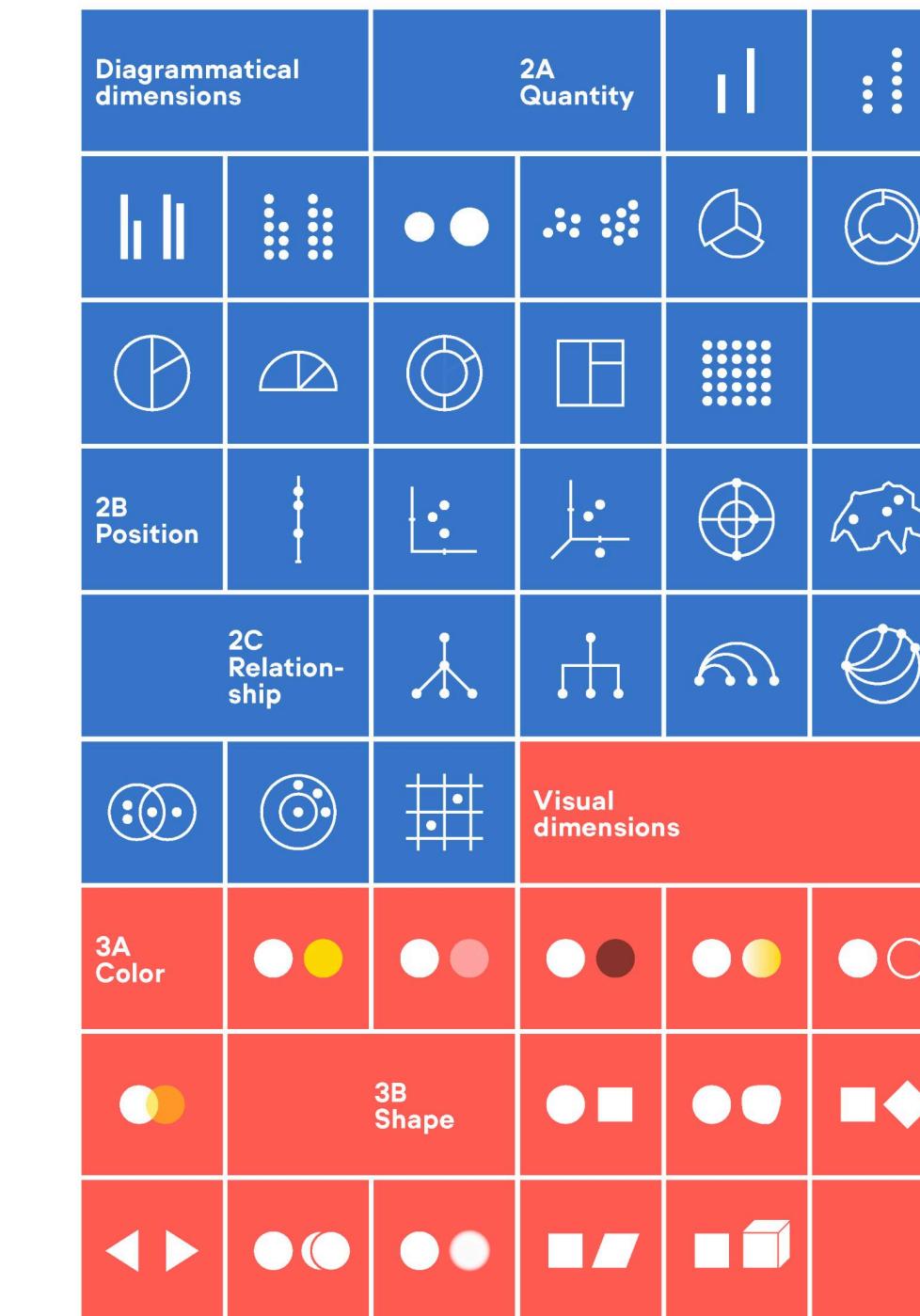
# Modular Thinking Mindset

## 8 Steps

Why

# 1. Grundlegende Gestaltungselemente kennen

Overview of all 80 elements



# Modular Thinking Mindset

## 8 Steps

Why

## 2. Von Varianten zu Optimierung und Innovation

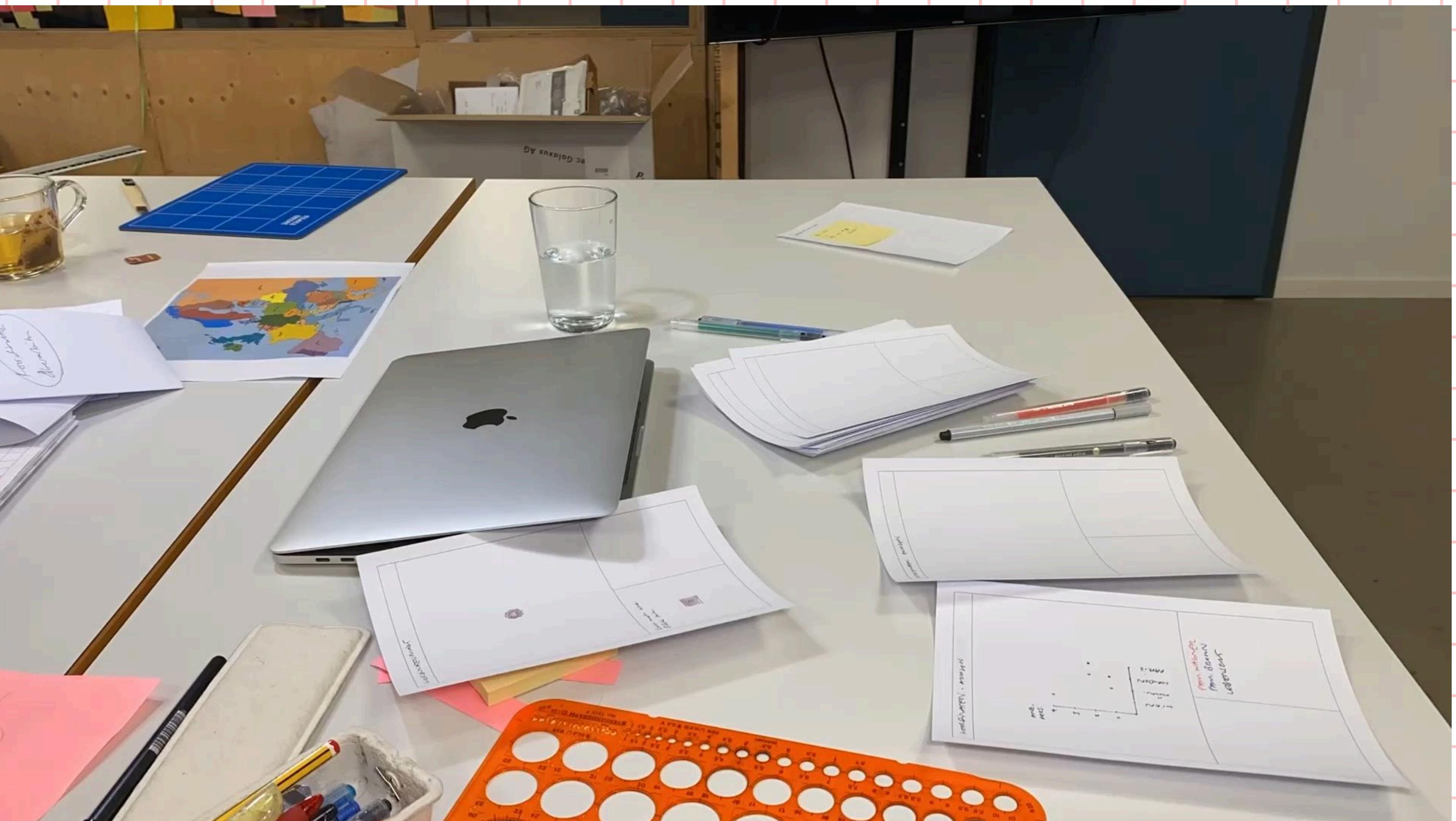


# Modular Thinking Mindset

## 8 Steps

Why

### 3. Skizzieren für Flow und Tiefe



# **Modular Thinking Mindset**

## **8 Steps**

**Why**

## **4 . Skizzieren für Partizipation und Transparenz**



# Modular Thinking Mindset

## 8 Steps

Why

## 5. Komplexität Schritt für Schritt steigern und dokumentieren



# Modular Thinking Mindset

## 8 Steps

Why

## 6. Externalisieren, Auslegen und Vergleichen

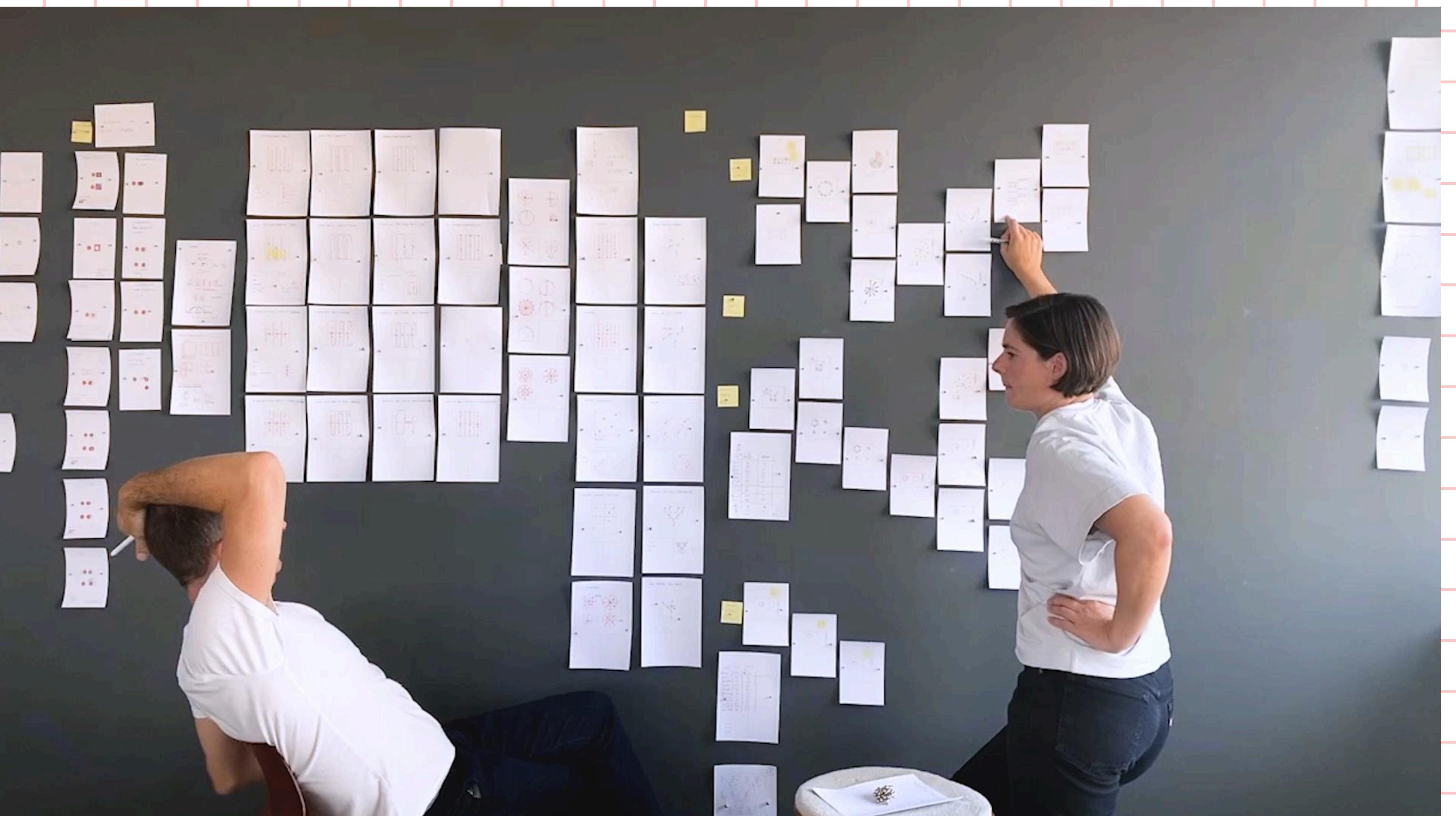


# Modular Thinking Mindset

## 8 Steps

Why

## 7. Sortieren, Gruppieren und Hierarchisieren

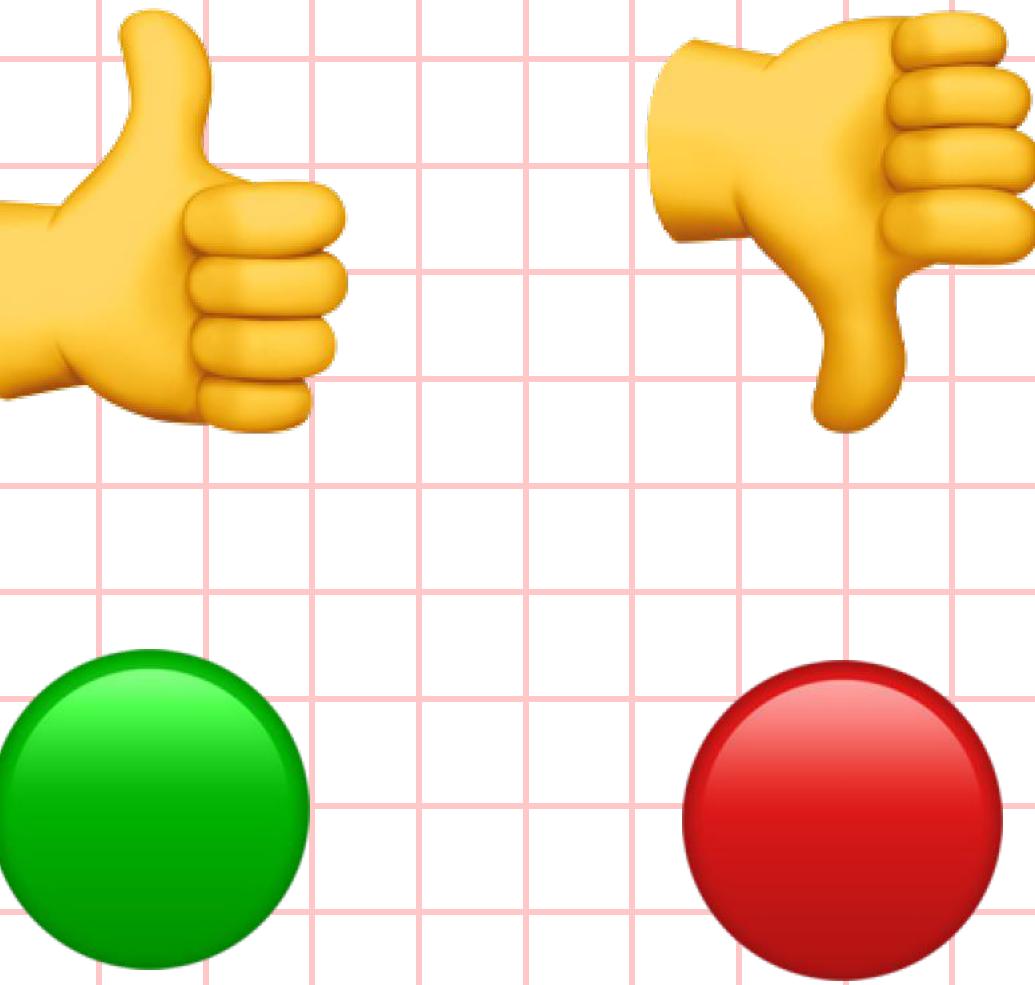


# **Modular Thinking Mindset**

## **8 Steps**

**Why**

## **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

---

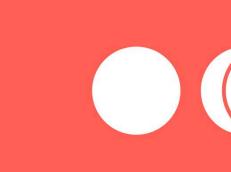
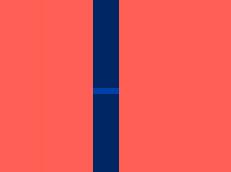
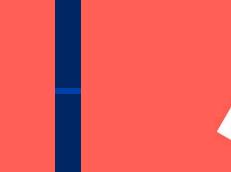
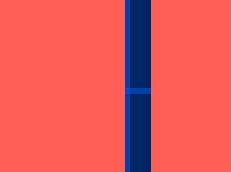
<b>Class</b>	<b>Superdot Studio / Modular Information Design</b> <b>12.12.2024</b>
<b>Task</b>	<b>Reverse engineering visualizations with Modular Information Design</b>
<b>Material</b>	<b>A5 grid paper or other paper (portrait format) / 4x color pens / ruler / scanner app, visualization examples</b>
<b>Step 1 – what</b>	<b>Decode (reverse engineering) both historical visualization examples in the slides (Minard + Barr)</b>
<b>Step 2 – how</b>	<b>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</b>
<b>Step 3</b>	<b>Scan (with scanning app) your sketch as .jpg Upload your sketch/table to Adam till Wednesday 18.12 / 10am</b>

---



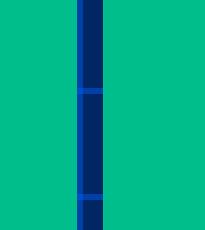
# Modular Information Design

## Visual Dimensions: 40 elements

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

# Modular Information Design

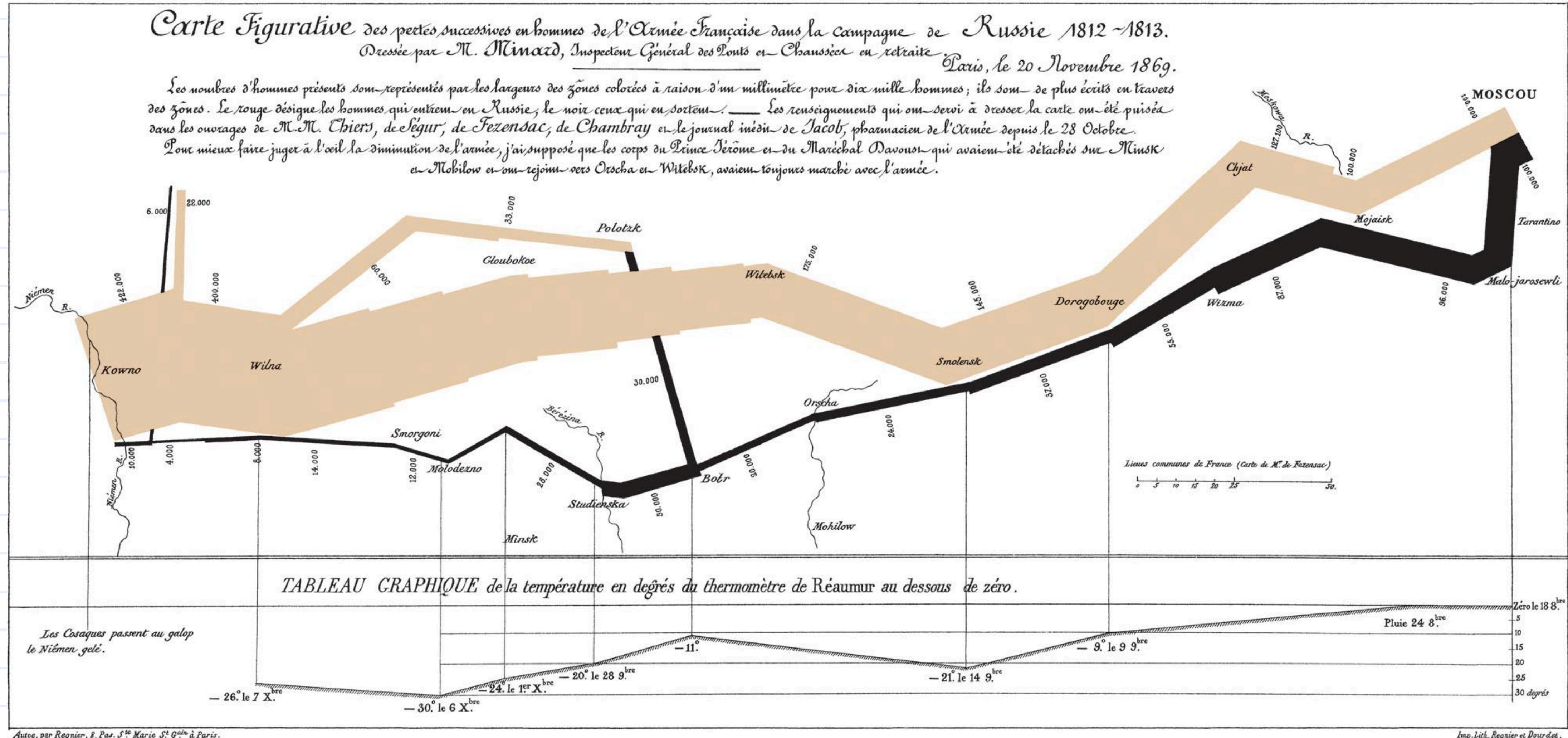
## Structuring Dimensions: 15 Elements

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

# Reverse engineering

## Exercise H: homework

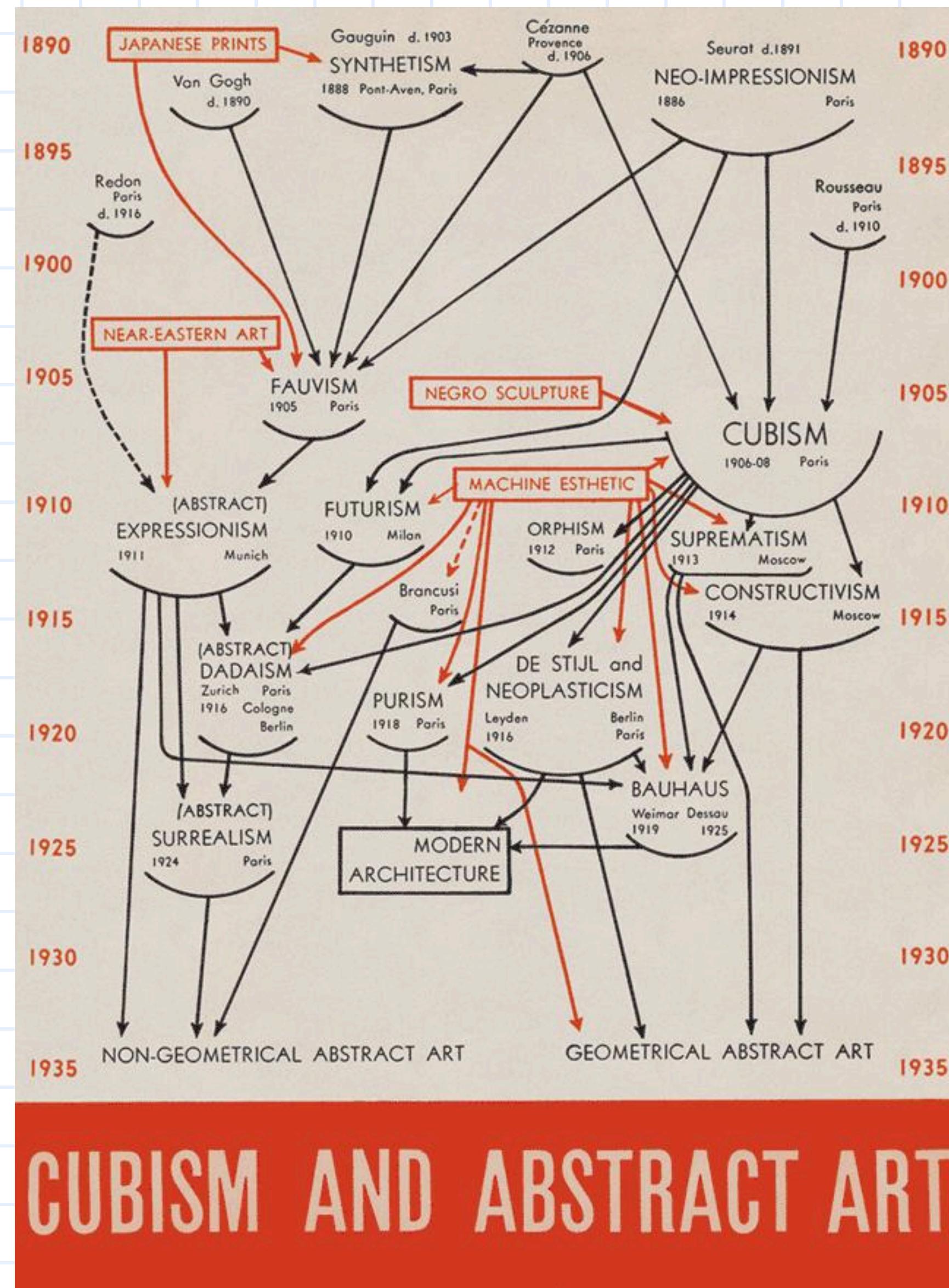
### Historical example A



# Reverse engineering

## Exercise H: homework

### Historical example B



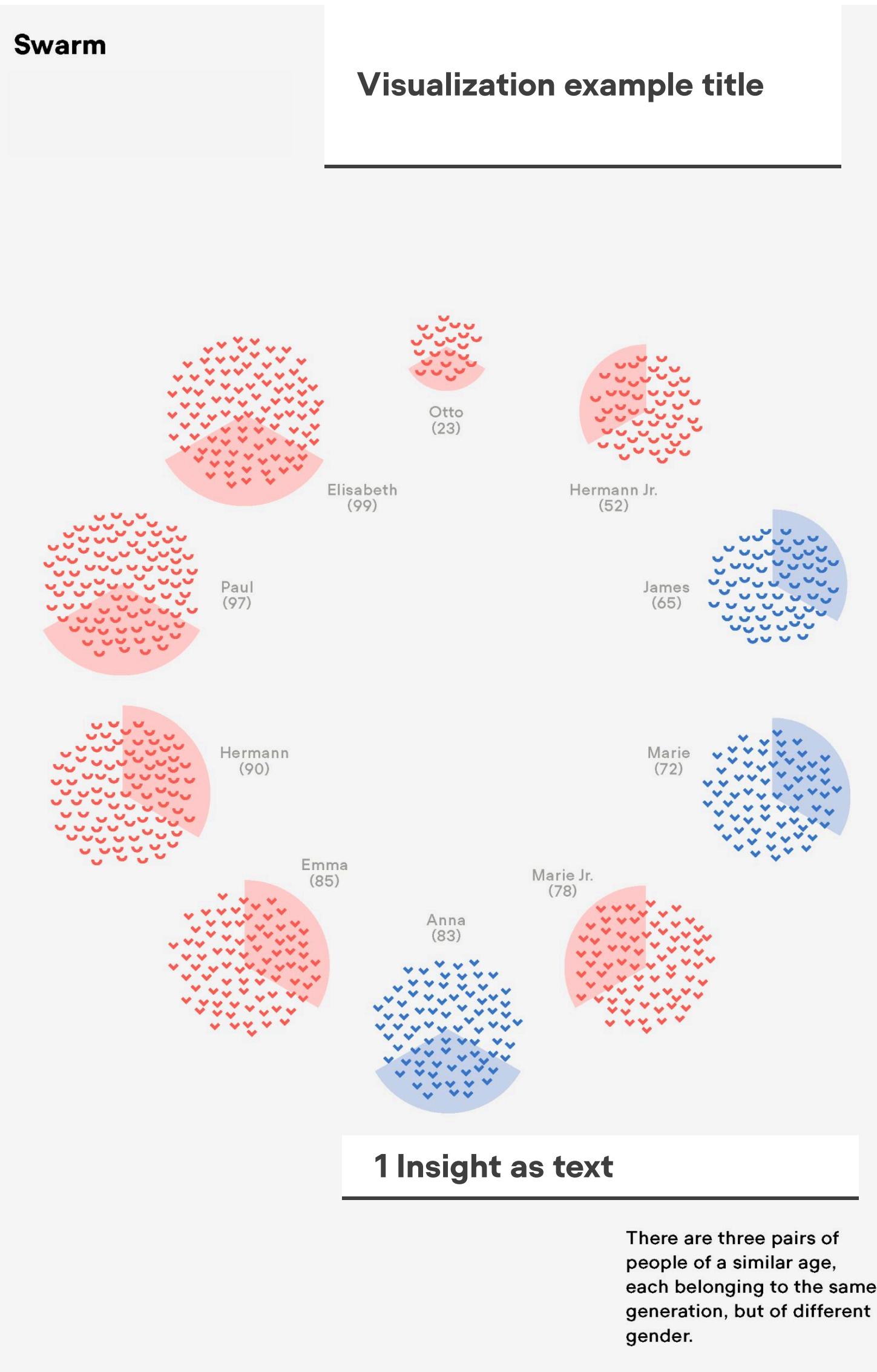
Alfred H. Barr, Jr.  
for the 1936 MoMA  
exhibition Cubism  
and Abstract Art.

# Reverse engineering visualizations

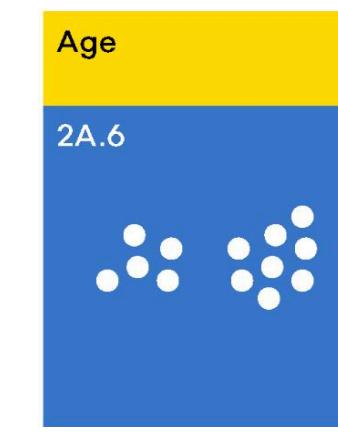
## Exercise G homework

### Solution example

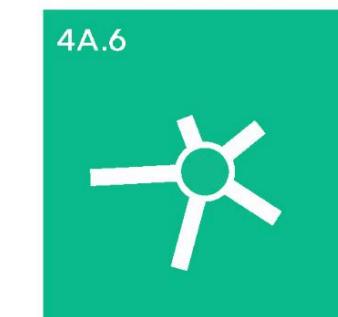
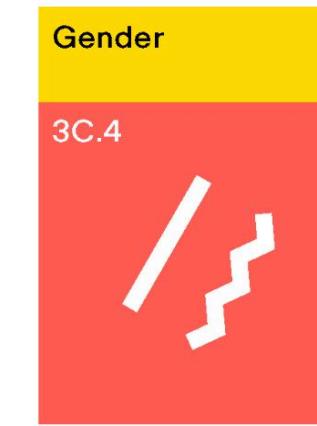
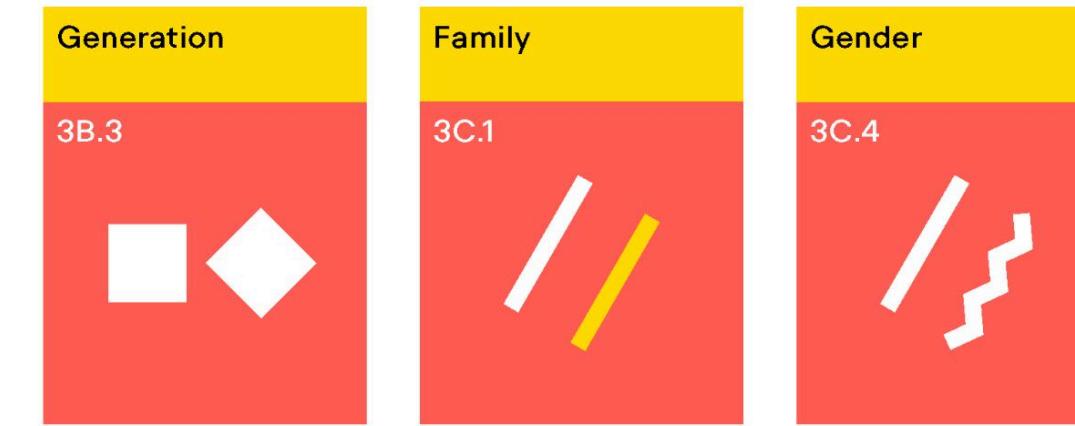
Swarm



176



Legend with  
Data dimensions  
MID element with number



177

# 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

#### Video collection

[On Data And Design  
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

[Christiansen, Jen. Building Science Graphics: An Illustrated Guide to Communicating Science through Diagrams and Visualizations. First edition. Boca Raton, FL: AK Peters, 2023. Print.](#)

---

Book

[Pontis, Sheila, and Michael Babwahsingh. Information Design Unbound: Key Concepts and Skills for Making Sense in a Changing World. London: Bloomsbury Publishing, 2024. Print.](#)

---

Paper

[Corrigendum: The Science of Visual Data Communication: What Works](#)

---

---

---

---

---

**Science Communication**  
**Evaluation 5.12**

**Thank you very much  
for you praticipation!**