

«Visualisierung von Daten» und Ideensammlung

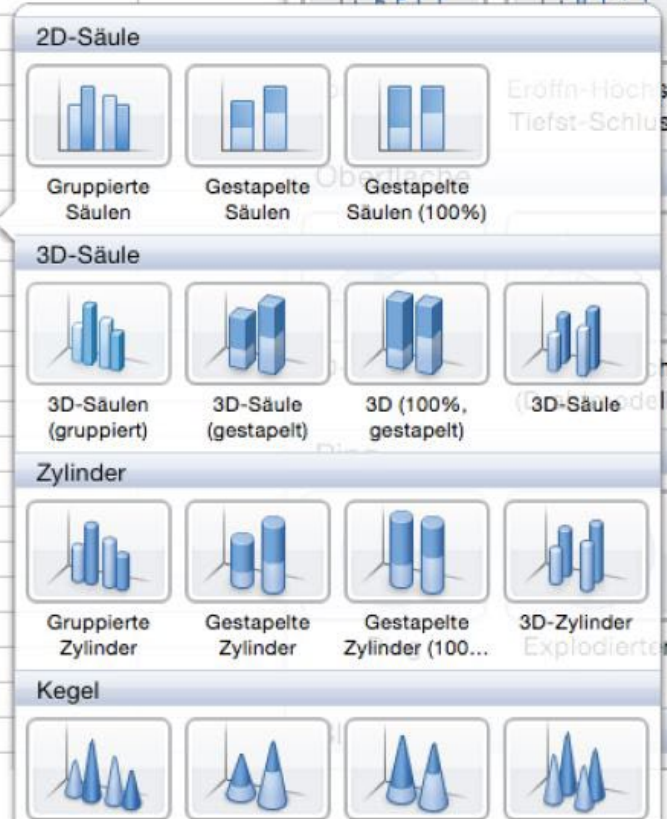
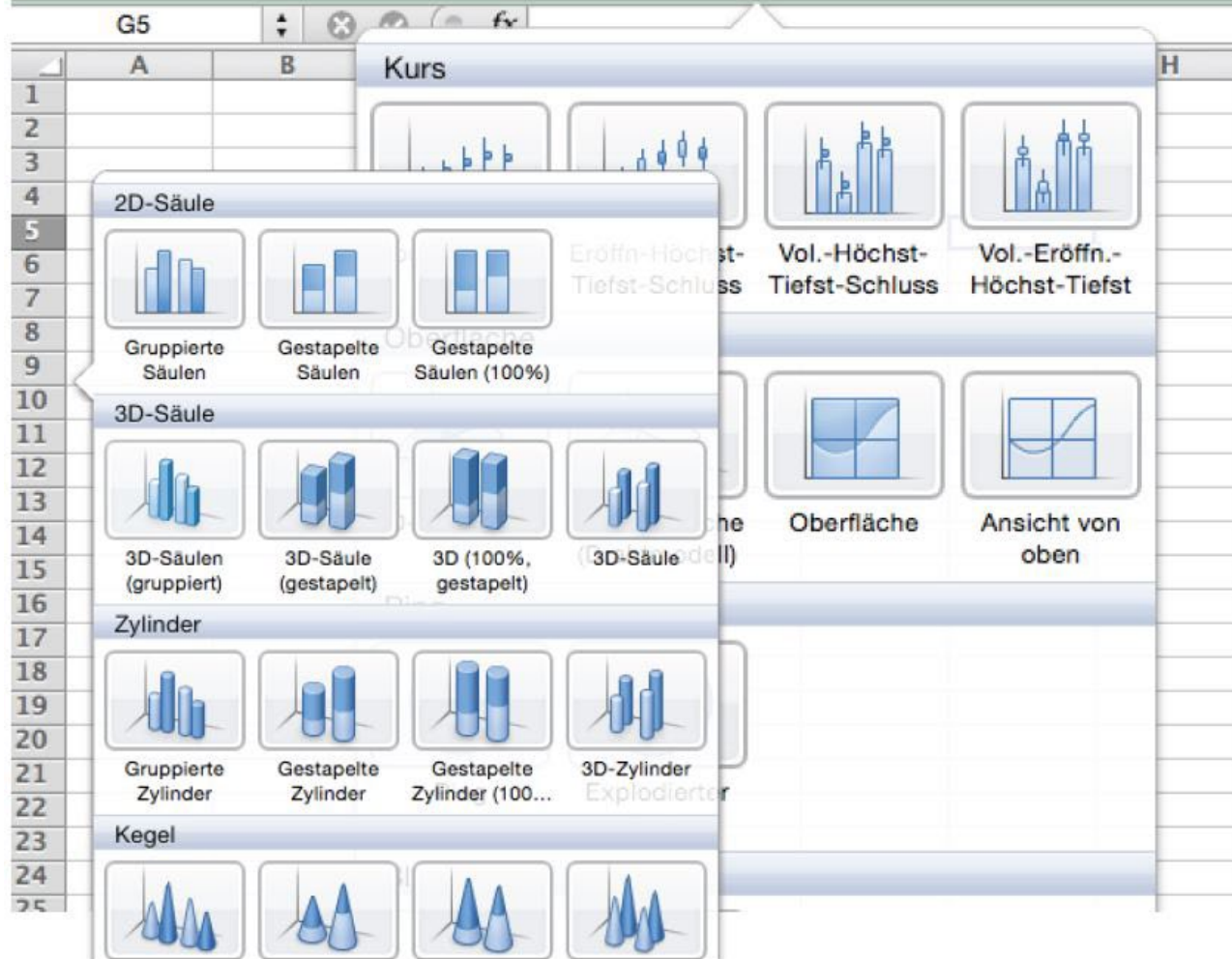
7. GINES-Kolloquium, 2. Juni 2023

Inputreferat Viktor Holdener

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- **Taxonomie** der Datenvisualisierungen?
- Vier erwähnenswerte **Visualisierungsaspekte**



Bubble chart 	Bubble comparison 	Bubble race 	Bubble race with strings 	Bubble clusters 	Bubble network 	Bubble treemap 	Bubble star ring
Infographic 	Charticle 	Word cloud 	Matrix 	Family tree 	Mind map (tidy) 	Mind map (organic) 	Concept map
Bubbles (nested) 	Polar grid (segmented) 	Sun burst 	Coxcomb 	Polar grid 	Icicle pie 	Mandala (complex) 	Mandala
Radar 	Spiral 	Concept fan 	Fan 	Synergy map 	Bubble mind map 	Ven bubbles 	Semantic polar grid
Decision tree 	Dunno what to call it 	Conetree 	Icicle tree 	Treemap 	Flowchart 	Sankey 	Periodic table

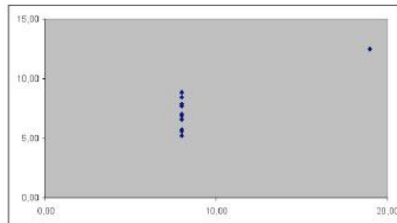
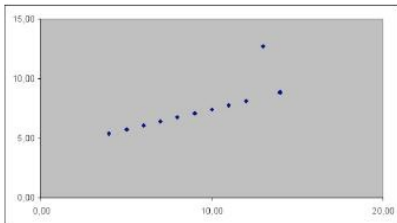
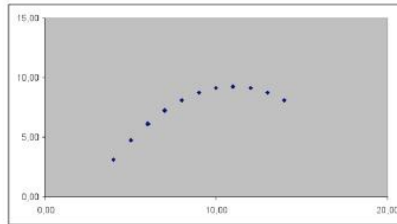
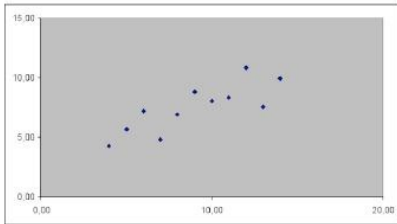


Explorative Datenvisualisierung

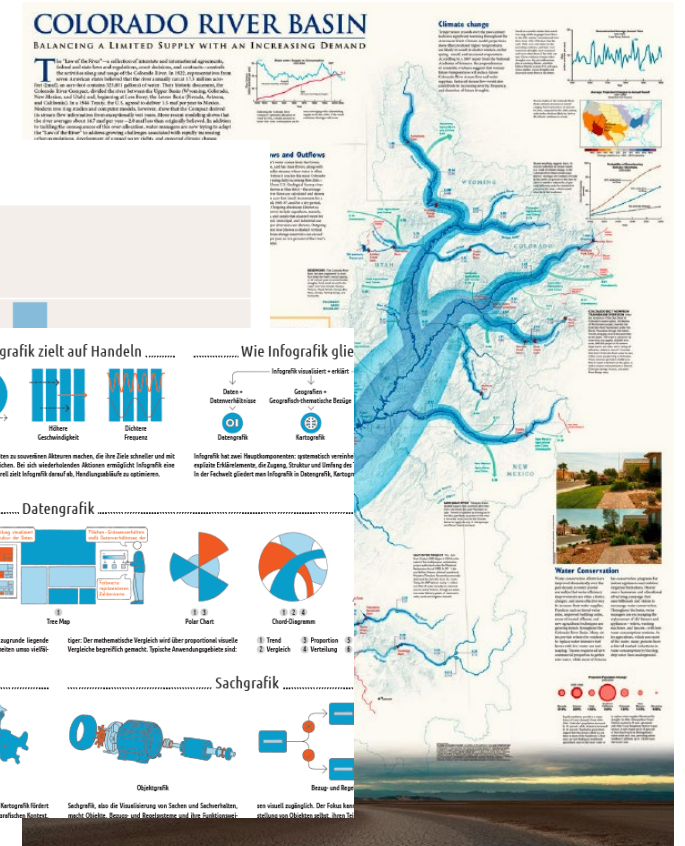
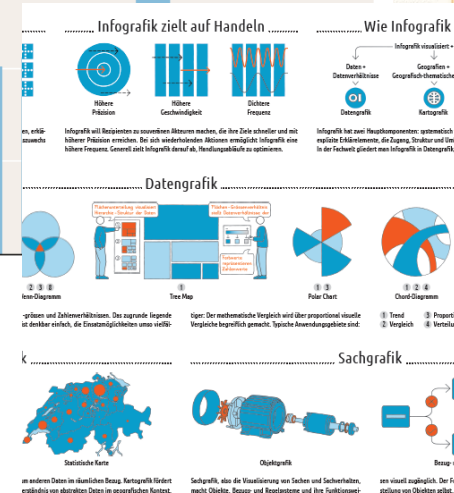
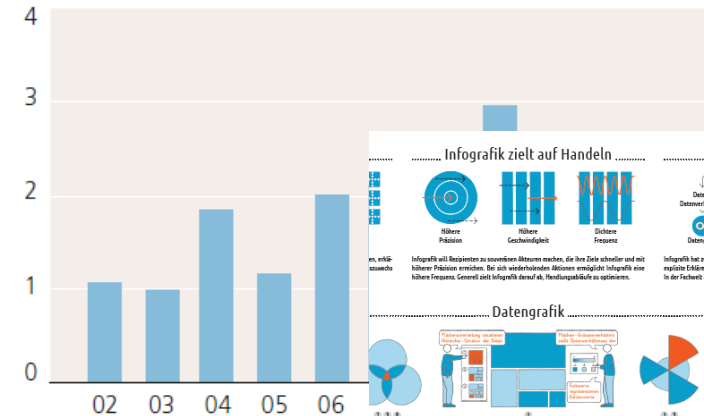
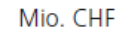
I		II		III		IV	
x	y	x	y	x	y	x	y
10,00	8,04	10,00	9,14	10,00	7,46	8,00	6,58
8,00	6,95	8,00	8,14	8,00	6,77	8,00	5,76
13,00	7,58	13,00	8,74	13,00	12,74	8,00	7,71
9,00	8,81	9,00	8,77	9,00	7,11	8,00	8,84
11,00	8,33	11,00	9,26	11,00	7,81	8,00	8,47
14,00	9,96	14,00	8,10	14,00	8,84	8,00	7,04
6,00	7,24	6,00	6,13	6,00	6,08	8,00	5,25
4,00	4,26	4,00	3,13	4,00	5,39	19,00	12,50
12,00	10,84	12,00	9,13	12,00	8,15	8,00	5,56
7,00	4,82	7,00	7,26	7,00	6,42	8,00	7,91
5,00	5,69	5,00	4,76	5,00	5,73	8,00	6,89

N=11
Mittelwert X = 9.0
Mittelwert Y = 7.5

Regressionsgerade: $Y = 0.5 X + 3$



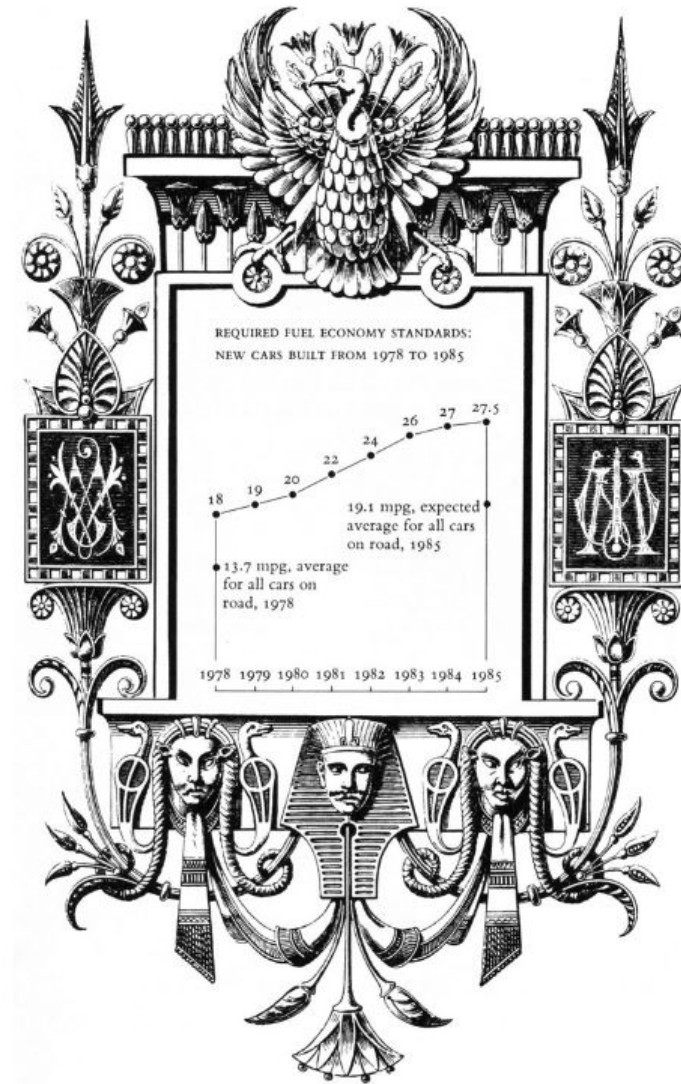
Informationsvermittlung
Kommunikation
Infografik

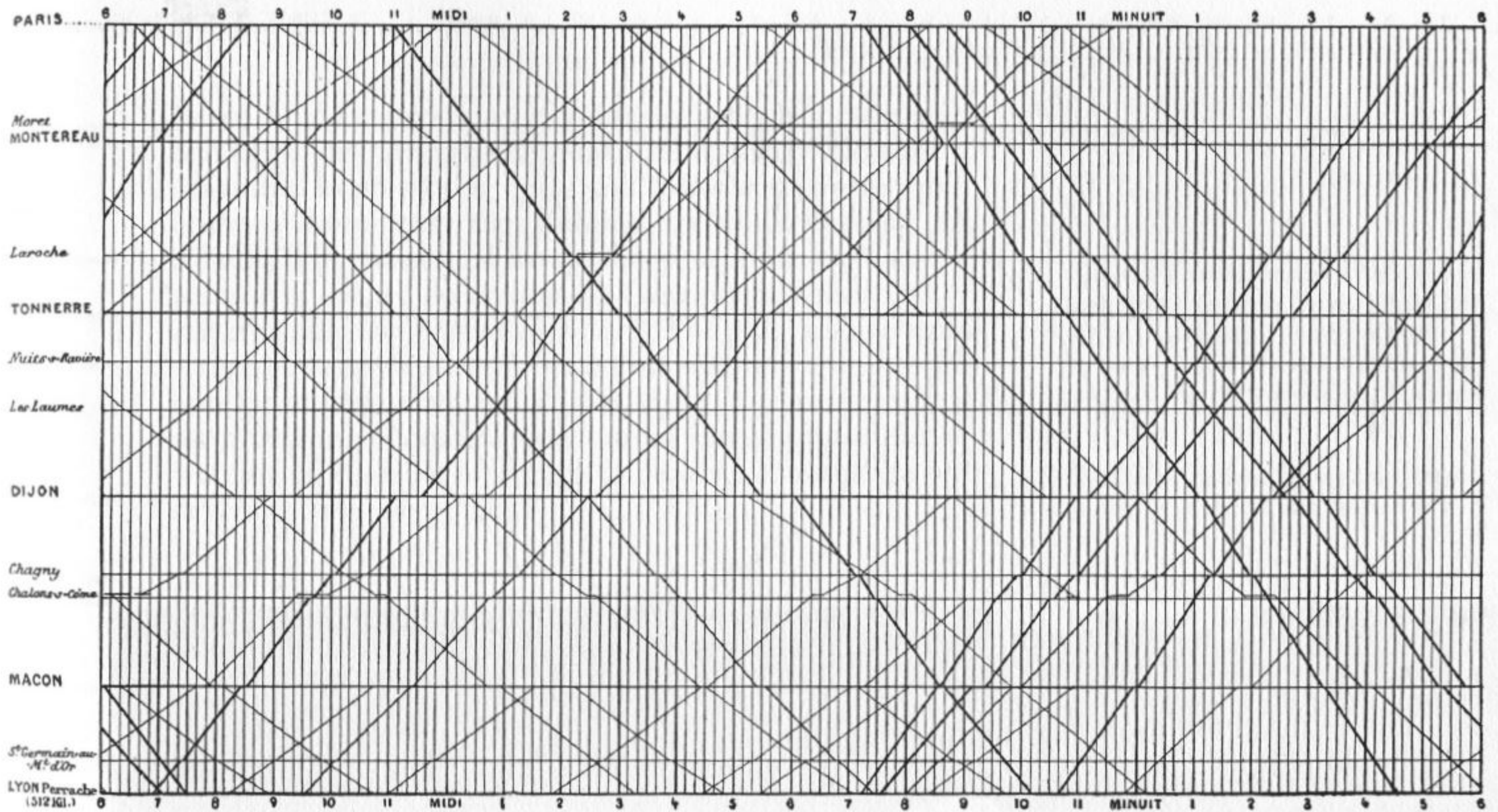


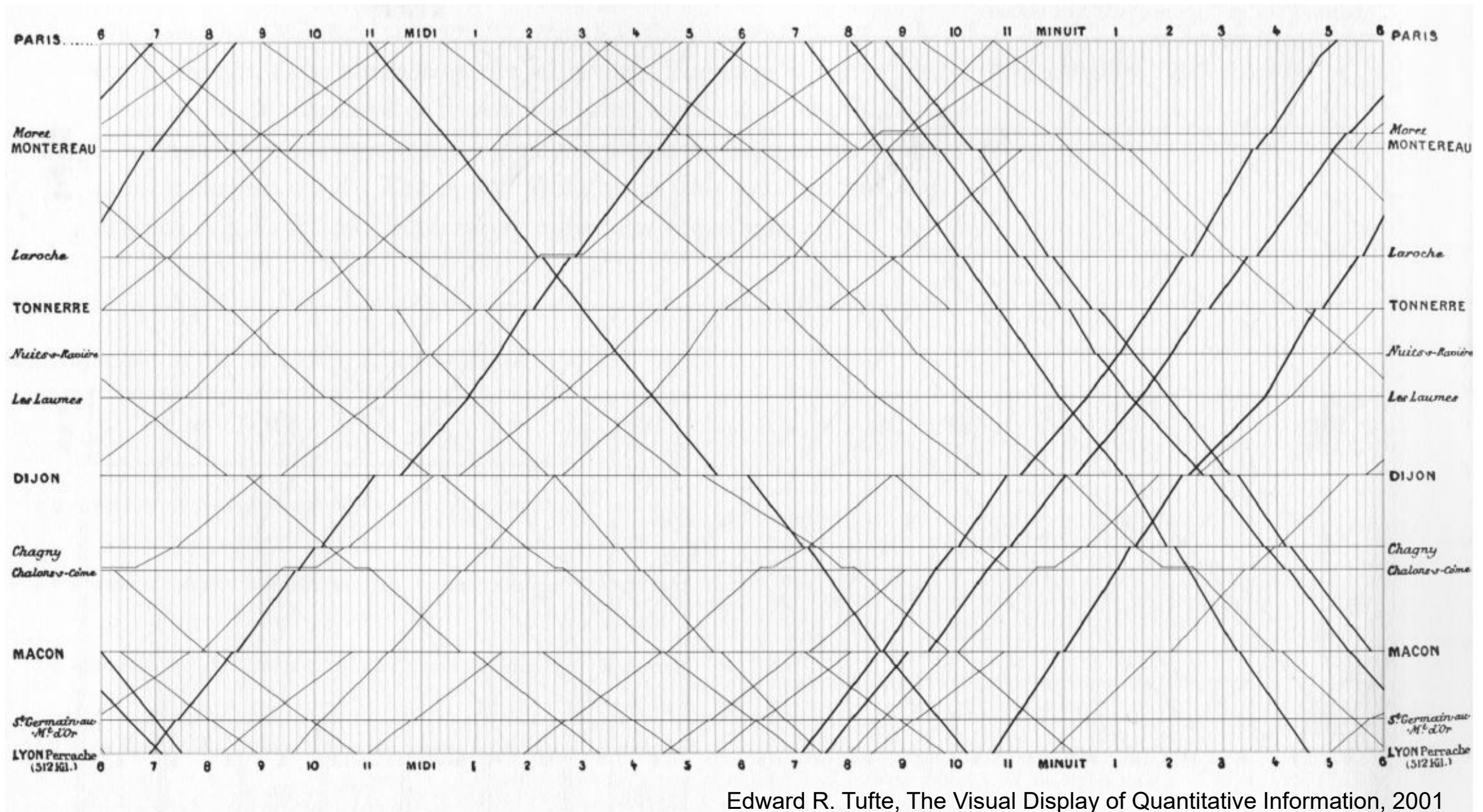
- Taxonomie der Datenvisualisierungen?
- Vier erwähnenswerte Visualisierungsaspekte

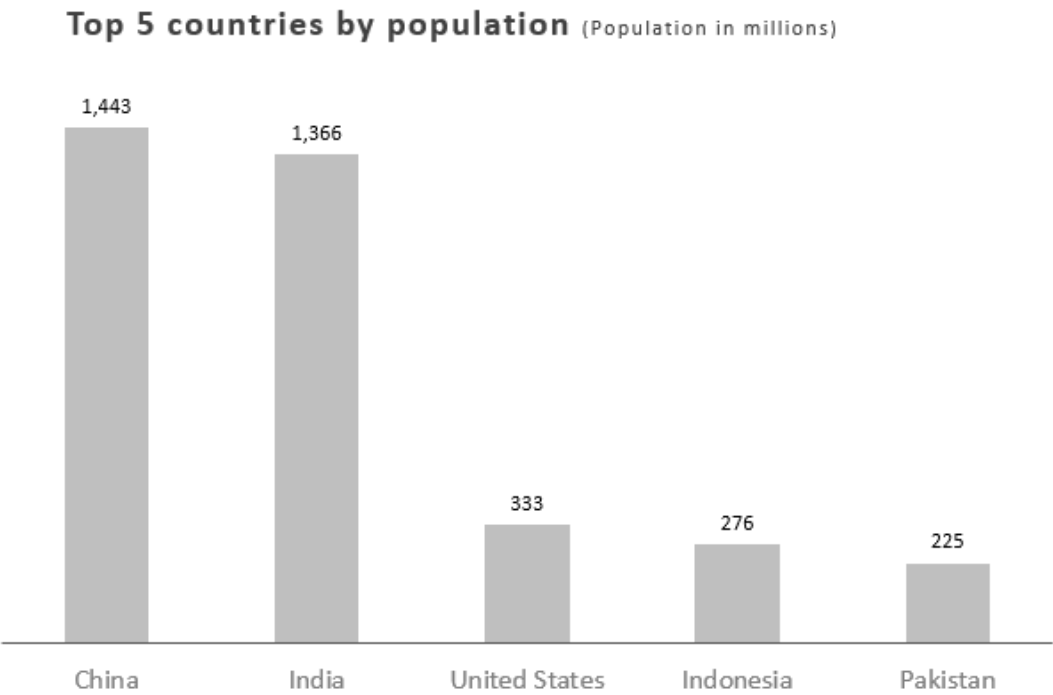
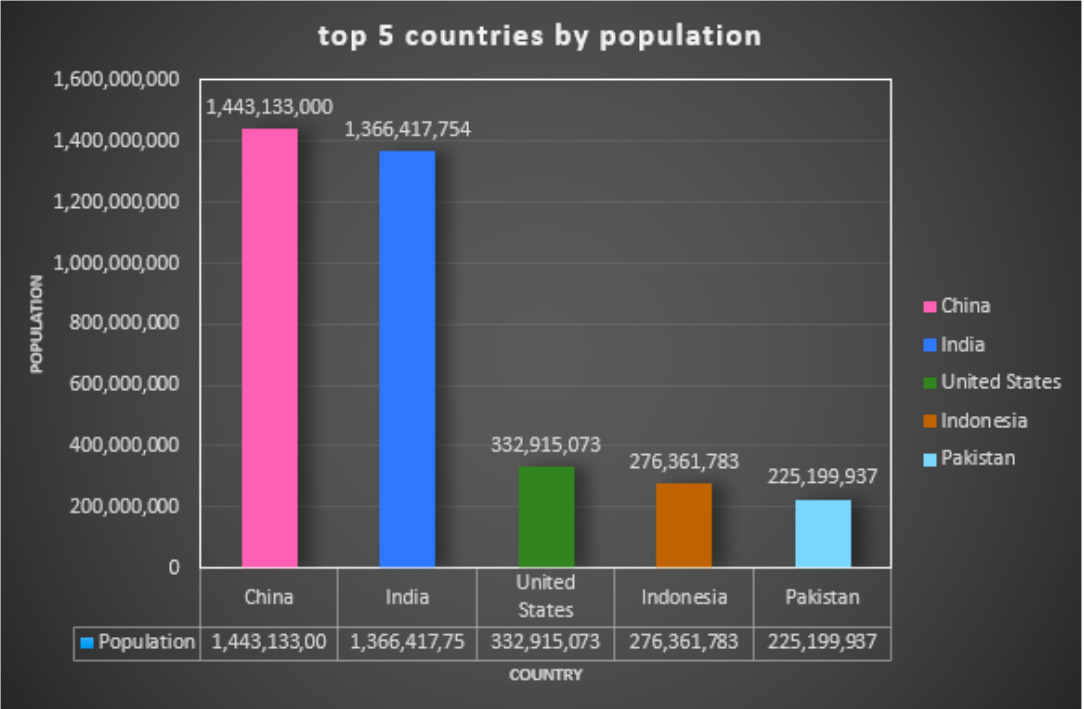
1) «Data Ink Ratio»

Was kann weggelassen werden, ohne dass dabei Information verloren geht?





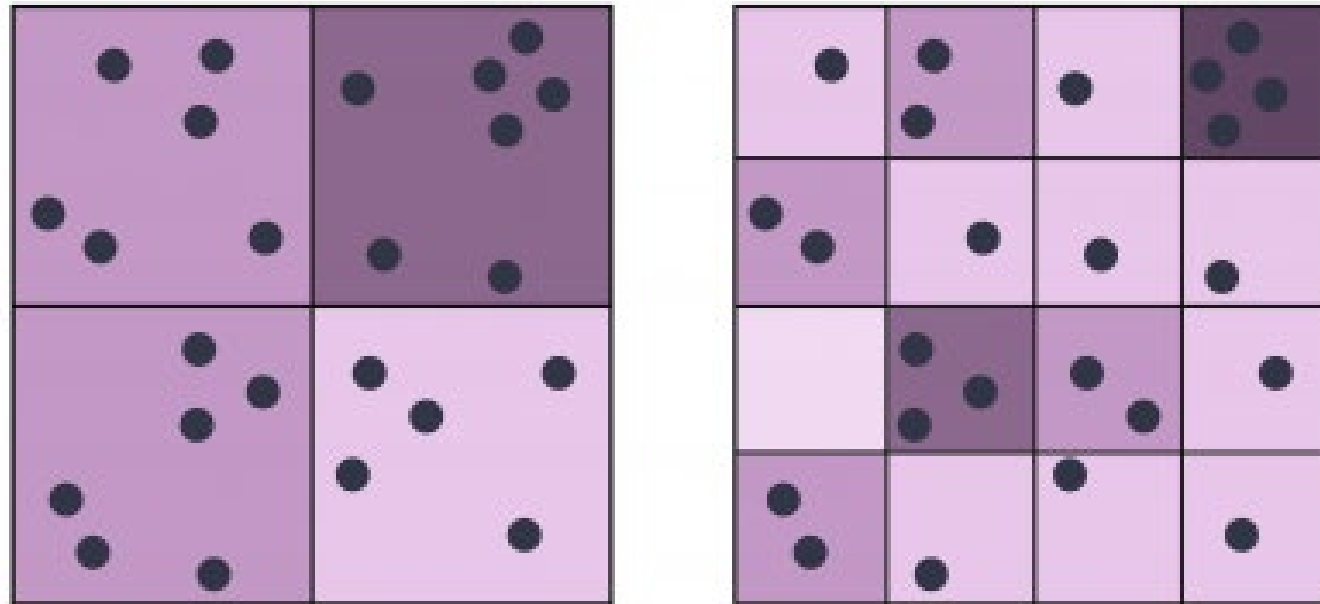




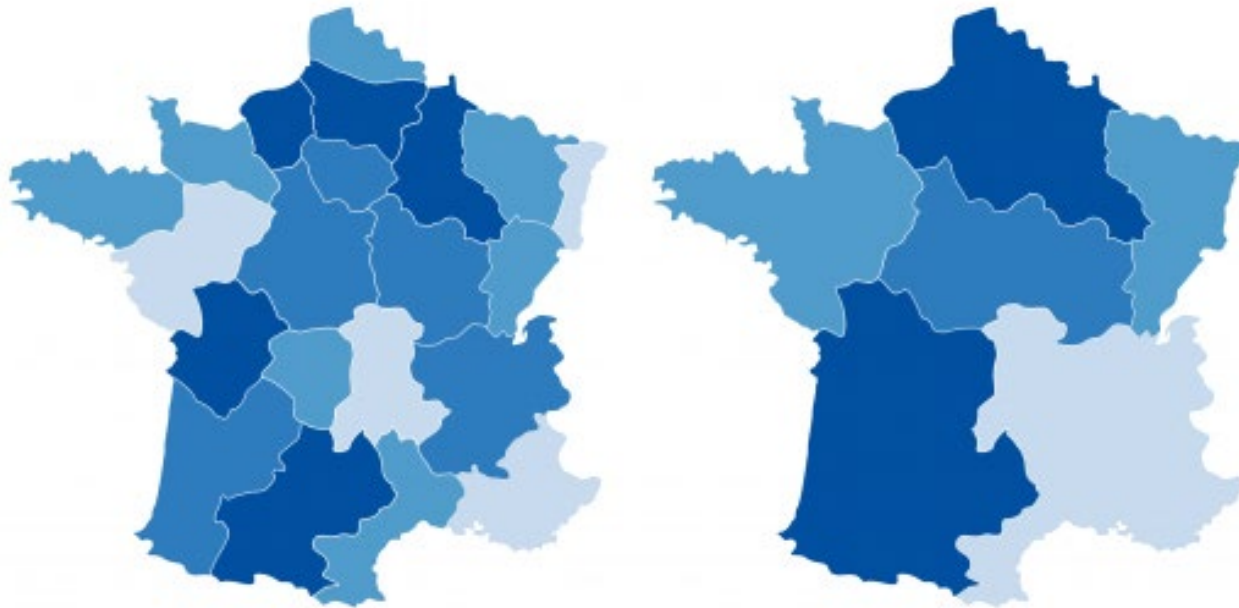
2) «MAUP»

modifiable areal unit problem

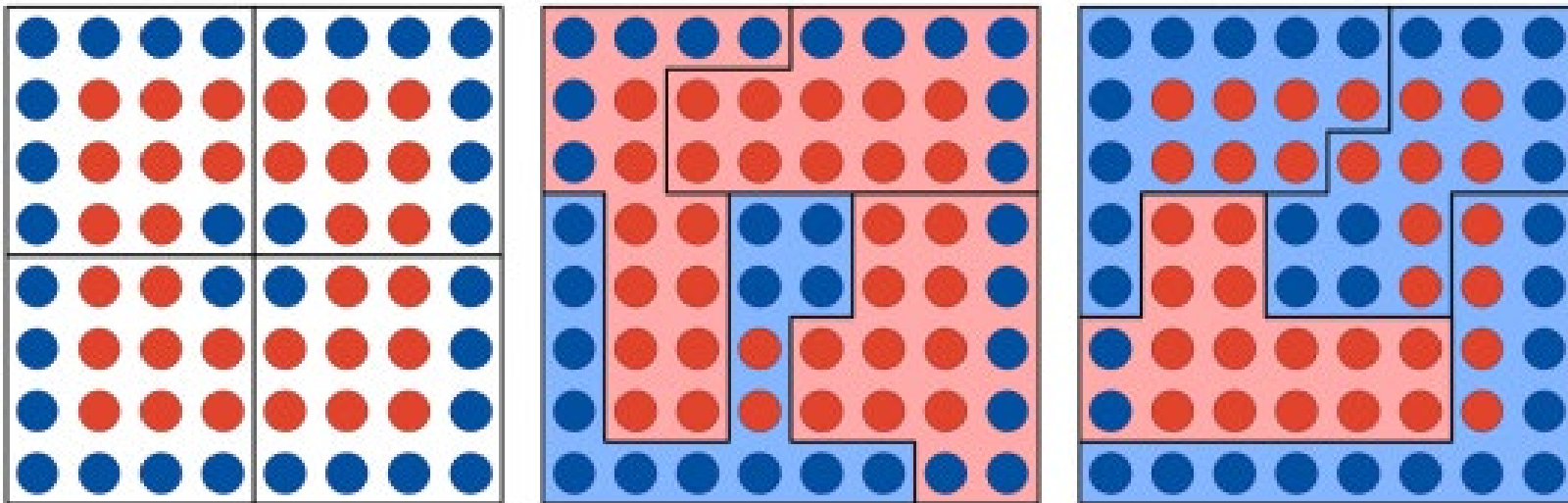
«scale effect»



«zone effect»

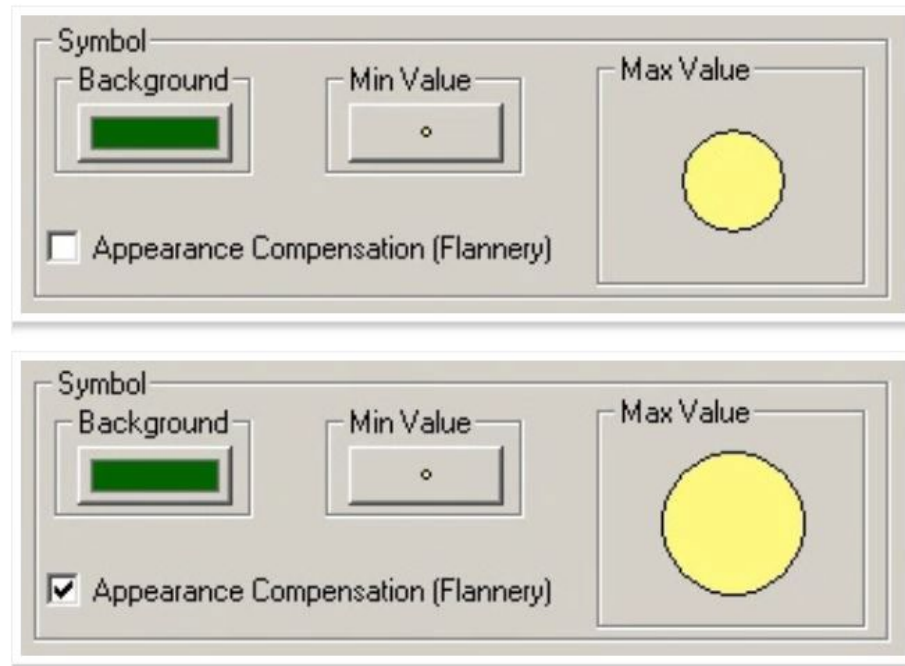


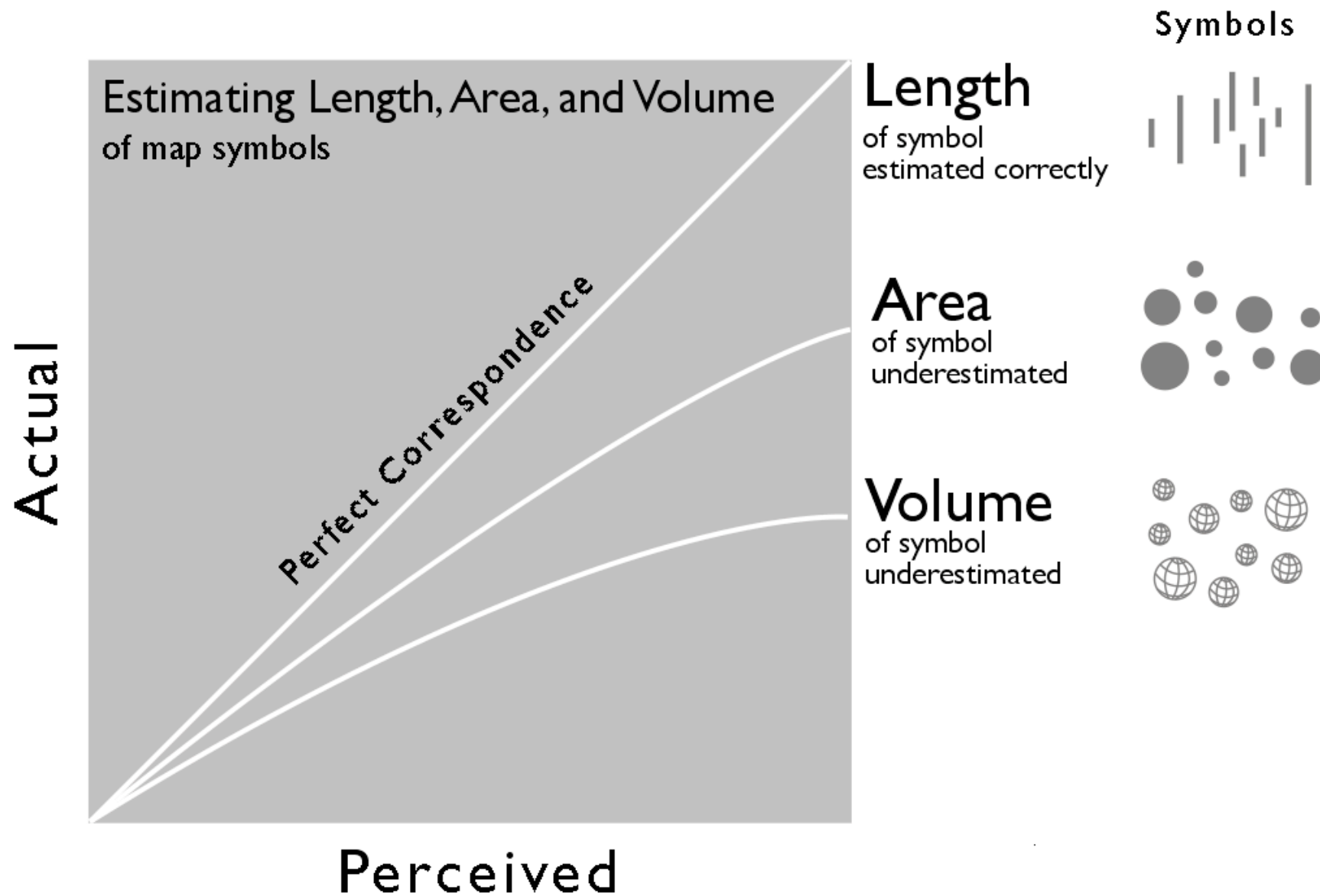
«gerrymandering»

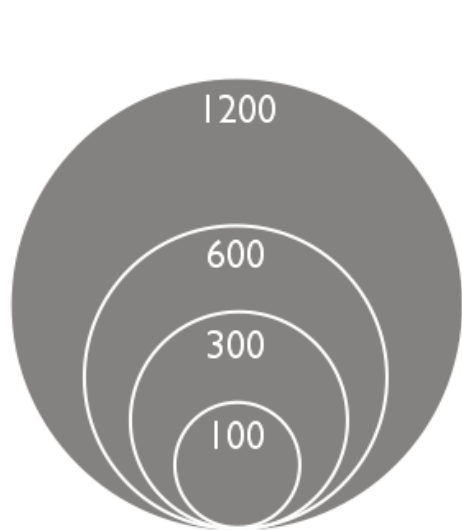


3) «Flannery who?»

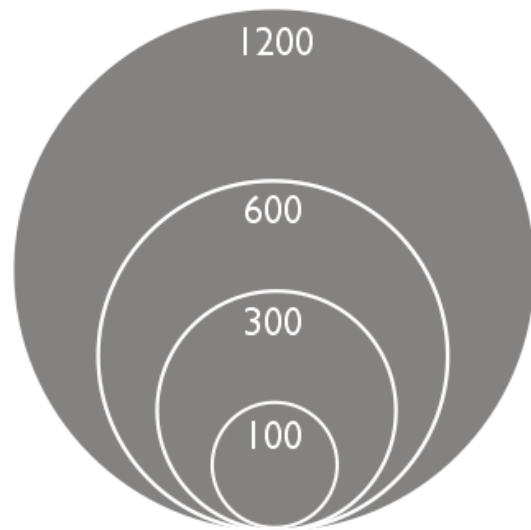
how to scale a map symbol so the average user correctly judges the symbol's value?



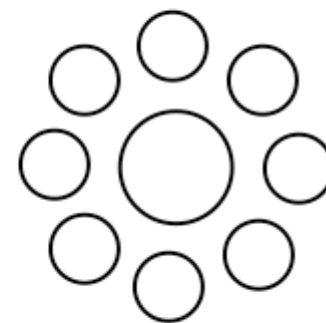
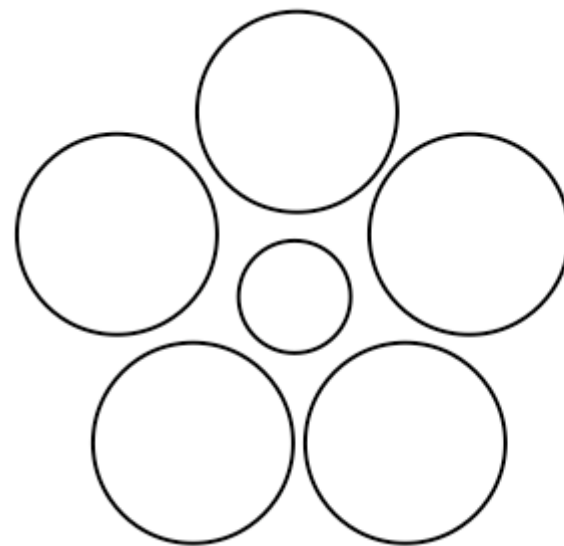




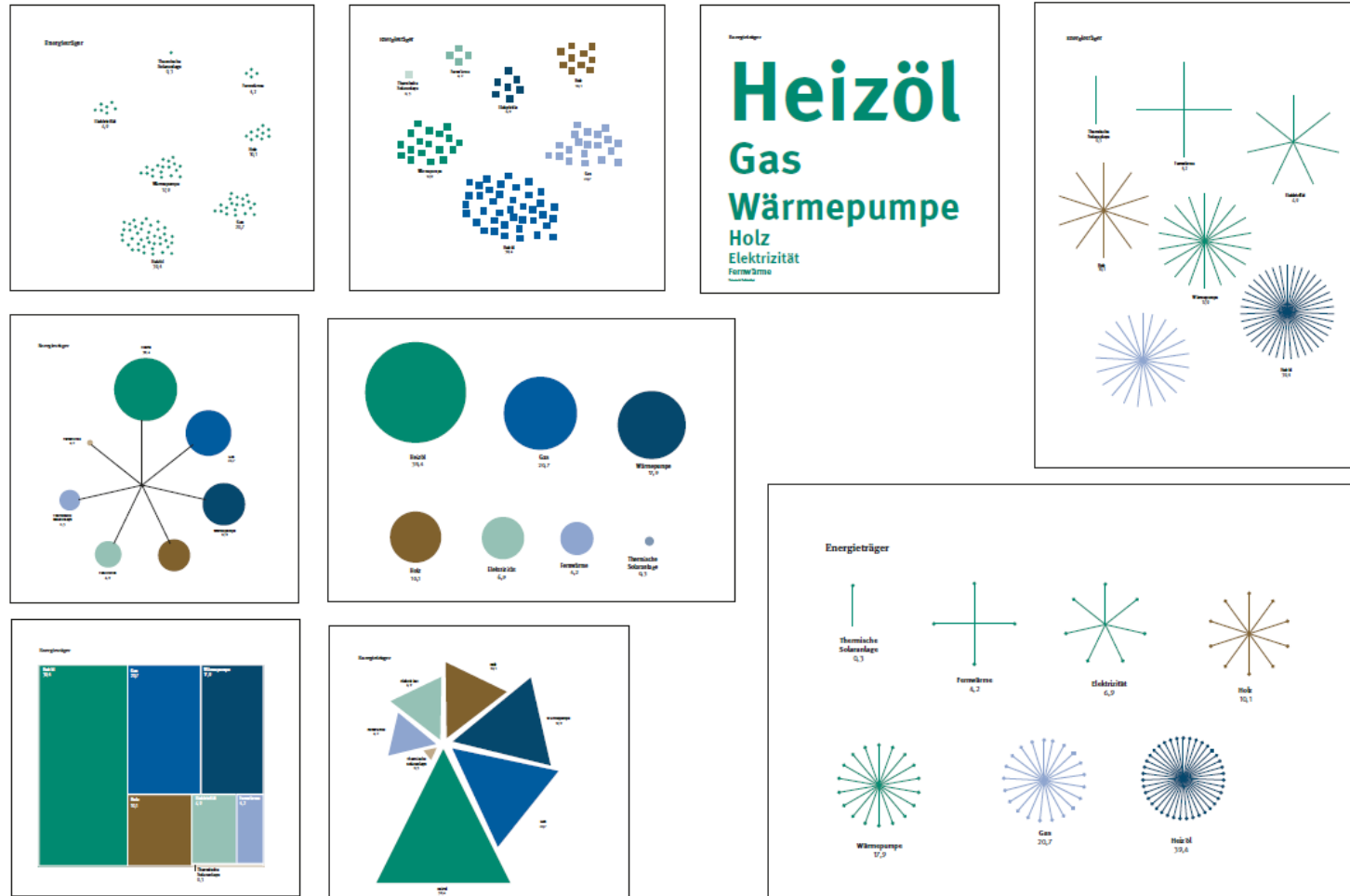
Absolute Scaling



Apparent Scaling
(Flannery's Compensation)



4) «Arbeit in Varianten»

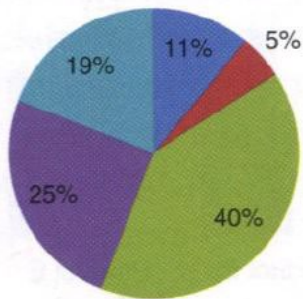


Quelle: Hahn+Zimmermann, Erdölvereinigung

Survey Results

PRE: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited



POST: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited

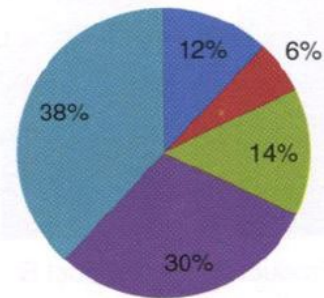
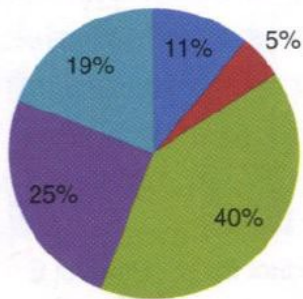


FIGURE 0.4 Example 2 (before): showing data

Survey Results

PRE: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited



POST: How do you feel about doing science?

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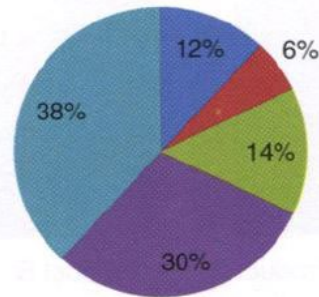
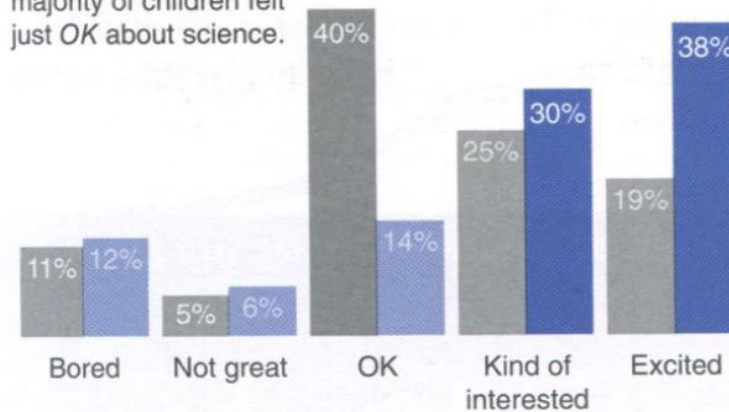


FIGURE 0.4 Example 2 (before): showing data

Pilot program was a success

How do you feel about science?

BEFORE program, the majority of children felt just OK about science.



AFTER program, more children were *Kind of interested* & *Excited* about science.

Based on survey of 100 students conducted before and after pilot program (100% response rate on both surveys).

FIGURE 0.5 Example 2 (after): storytelling with data

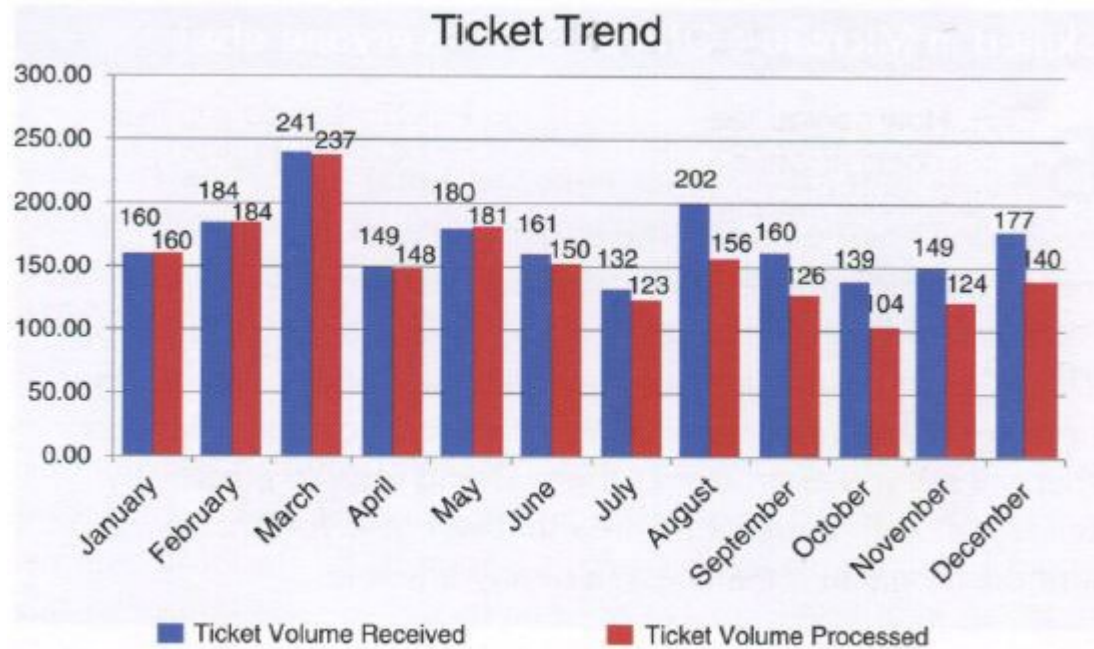


FIGURE 0.2 Example 1 (before): showing data

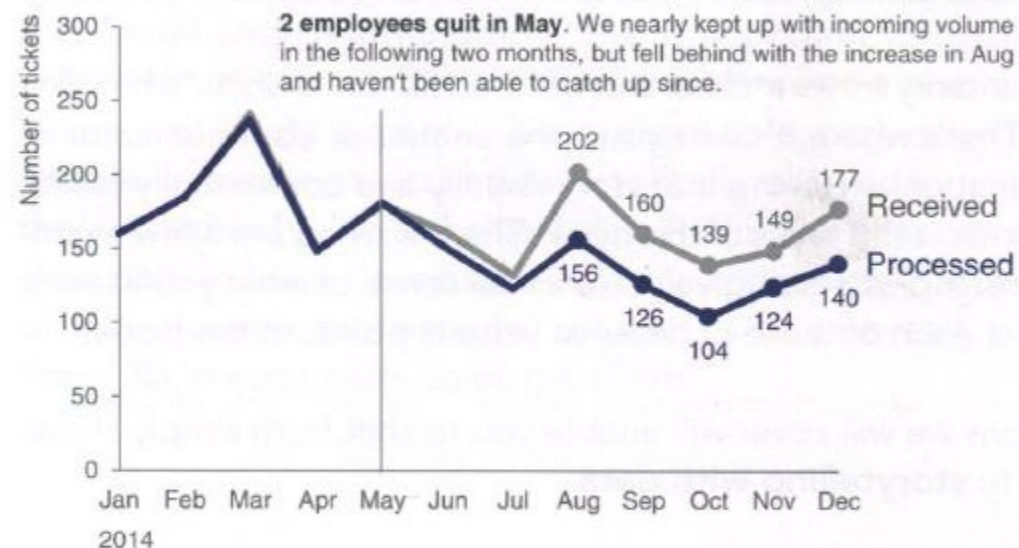


FIGURE 0.2 Example 1 (before): showing data

Please approve the hire of 2 FTEs

to backfill those who quit in the past year

Ticket volume over time



Data source: XYZ Dashboard, as of 12/31/2014 | A detailed analysis on tickets processed per person and time to resolve issues was undertaken to inform this request and can be provided if needed.

FIGURE 0.3 Example 1 (after): storytelling with data

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552478992451524155615421492555214515
125104245151954005151210549897789584
21212515424977898075649797238546495

Ausgewählte Abbildungen stammen aus den Schulungsunterlagen des
«CAS Data Visualization» (2021/22) an der Hochschule der Künste Bern
von **Fabienne Kilchör** und **Barbara Hahn**.