

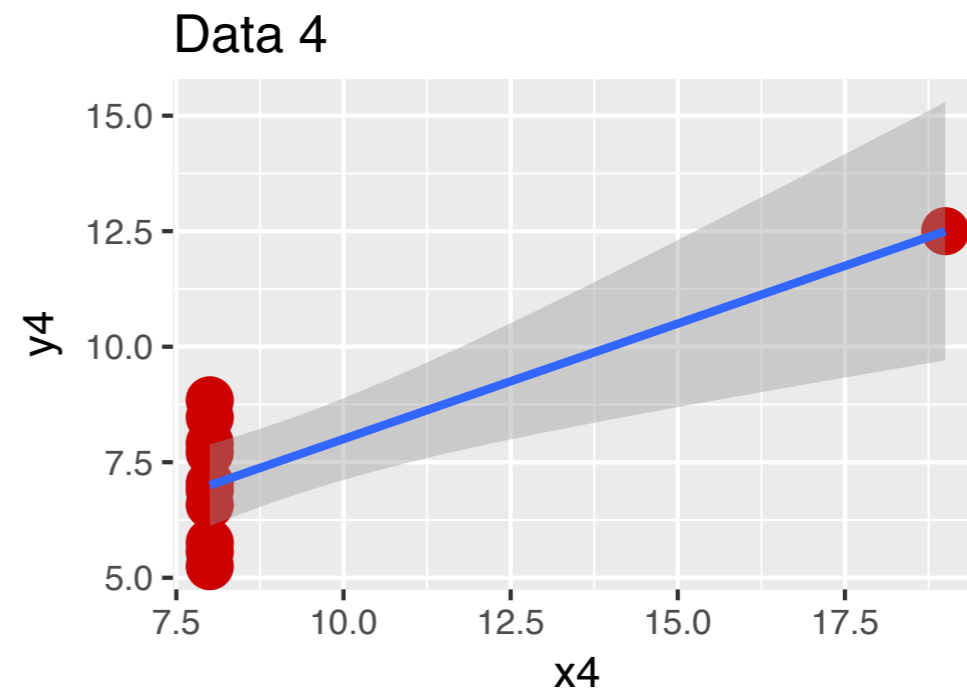
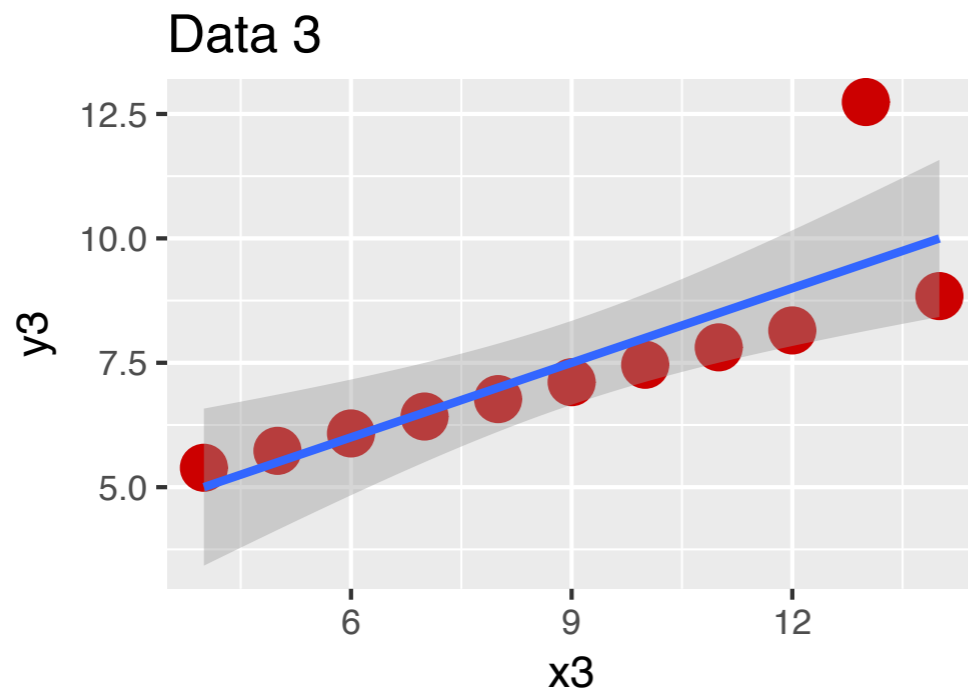
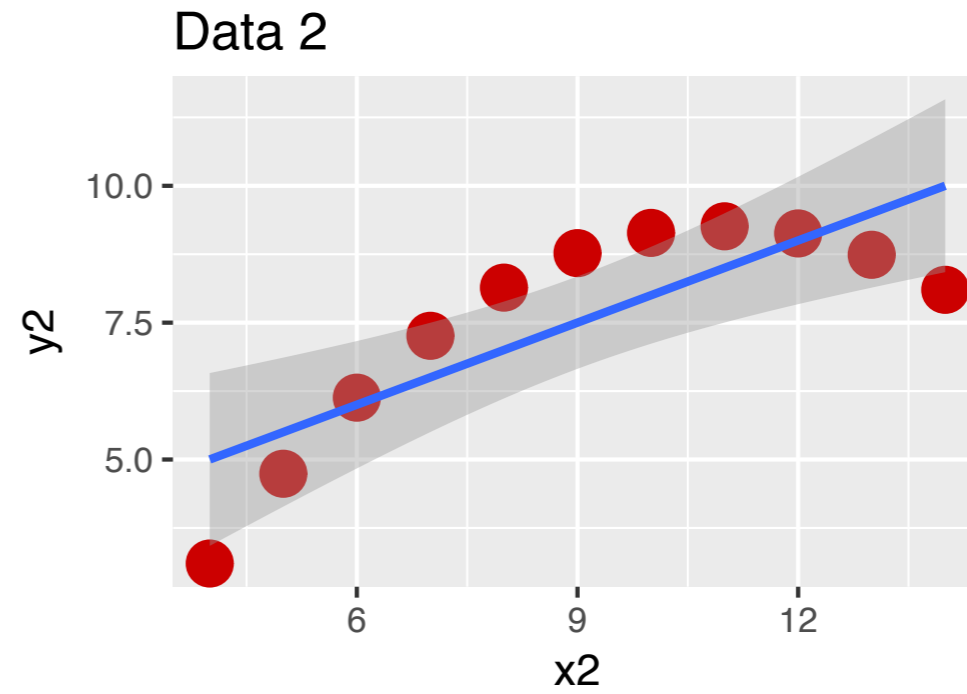
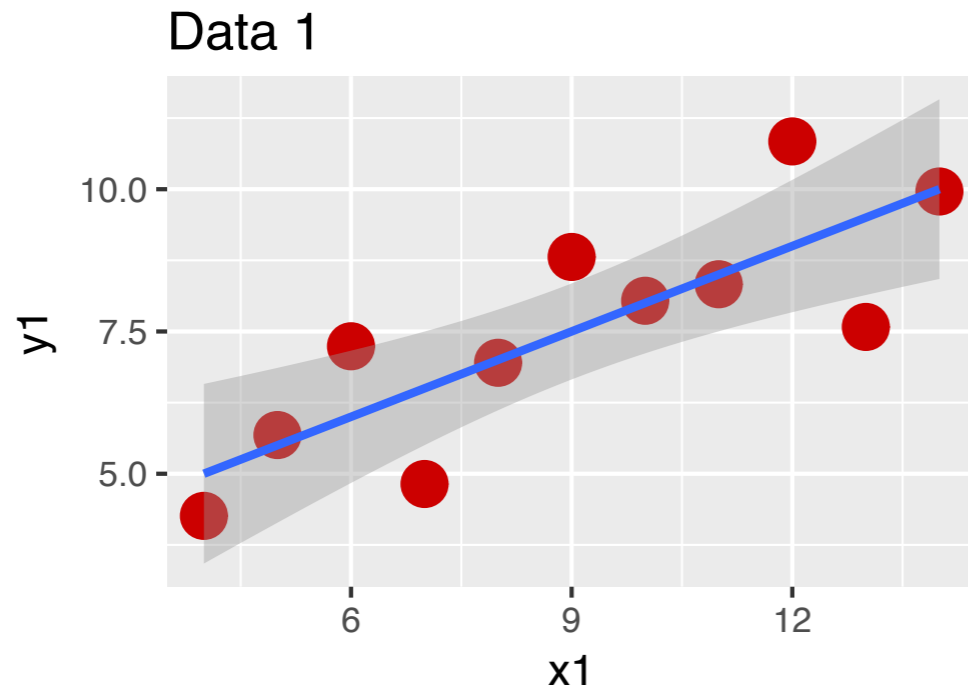


Thema 08: Datenvisualisierung

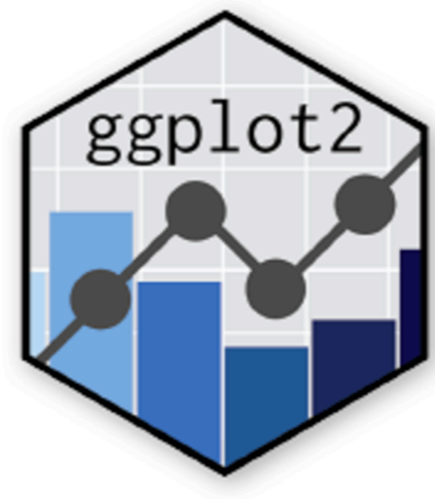
QM1, SoSe 22

Grundlagen

Anscombes Quartett



ggplot2: Eine Implementierung der „Grafik-Grammatik“



Was ist ggplot2?

- ▶ {ggplot2} ist ein R-Paket zur Erstellung von (Daten-)Diagrammen.
- ▶ Es ist eines der am besten entwickelten Systeme zur Erstellung von Datendiagrammen.
- ▶ Es basiert auf der „Grammar of Graphics“ (Wilkinson, 2005)
 - ▶ Daher logisch und konsistent aufgebaut
 - ▶ flexibel
- ▶ So läuft's:
 - ▶ Sie geben ggplot2 die Datentabelle,
 - ▶ sagen welche Spalten zum welchem Diagrammattribut gehören,
 - ▶ welchen Diagrammtyp Sie möchten und
 - ▶ ggplot2 kümmert sich um den Rest

Die „Grammatik der Grafik“

Exam points



Study time

	<i>Study time</i>	<i>Exam points</i>
<i>Anna</i>	10	30
<i>Berta</i>	30	60
<i>Carla</i>	20	90
<i>Dora</i>	50	120

Data



Study time

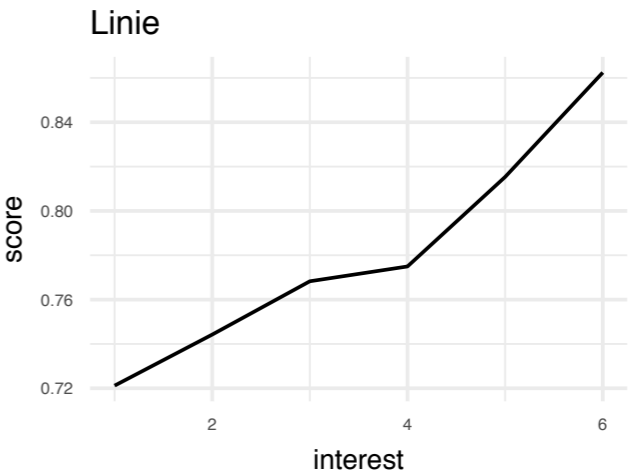
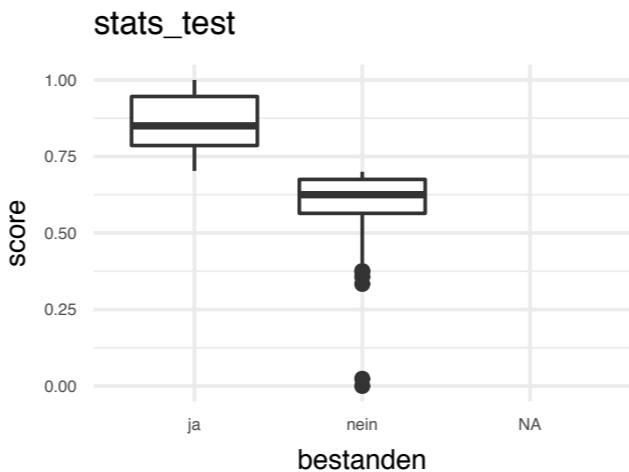
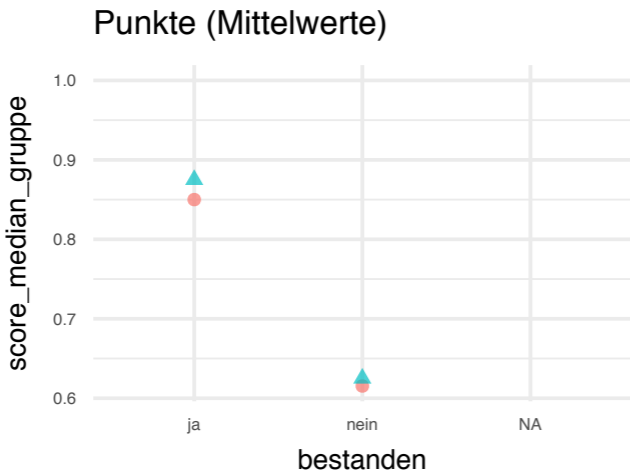
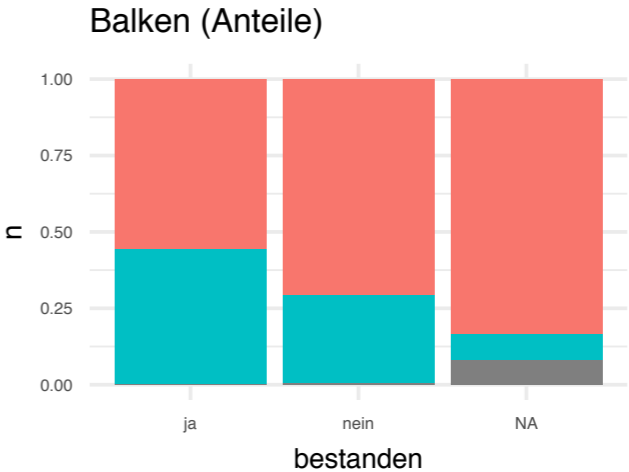
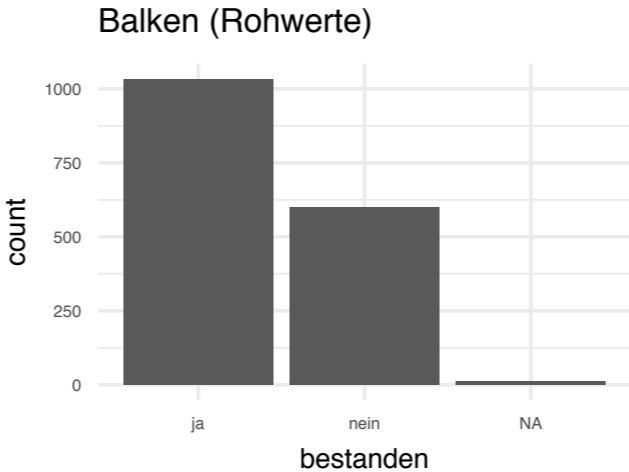
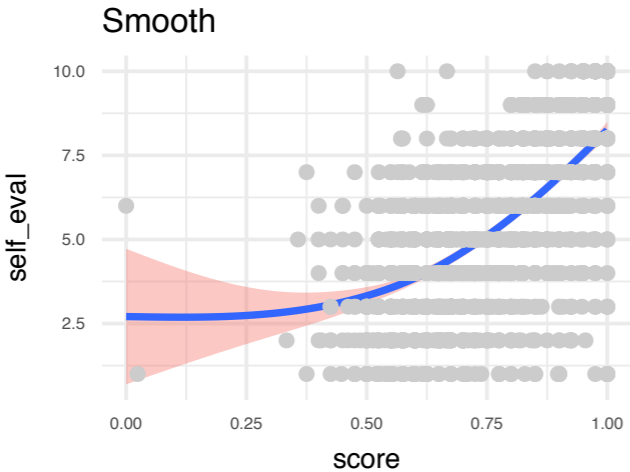
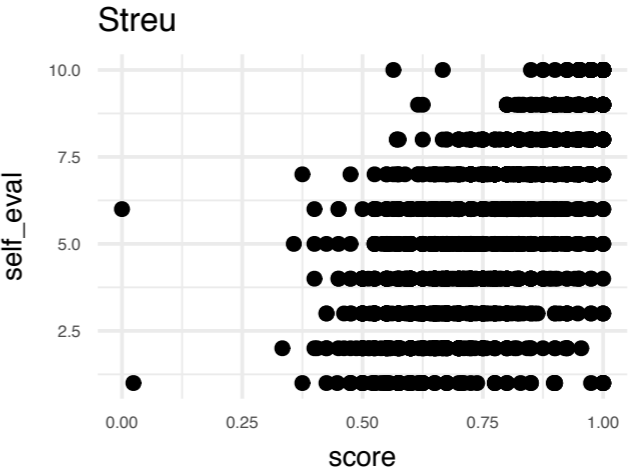
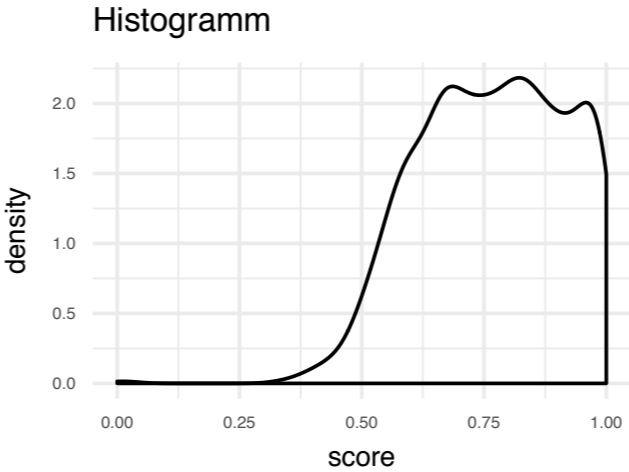
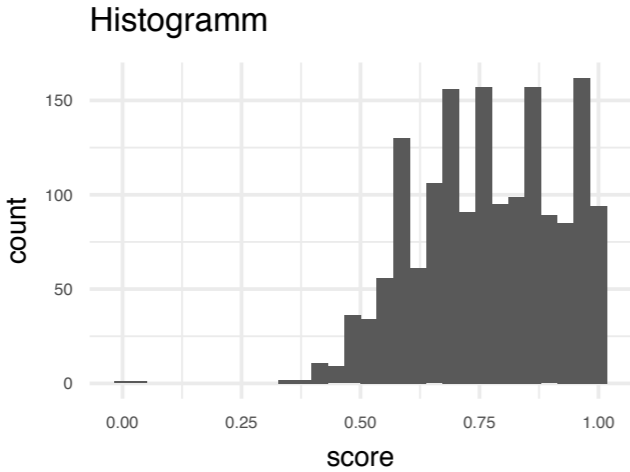
Axes



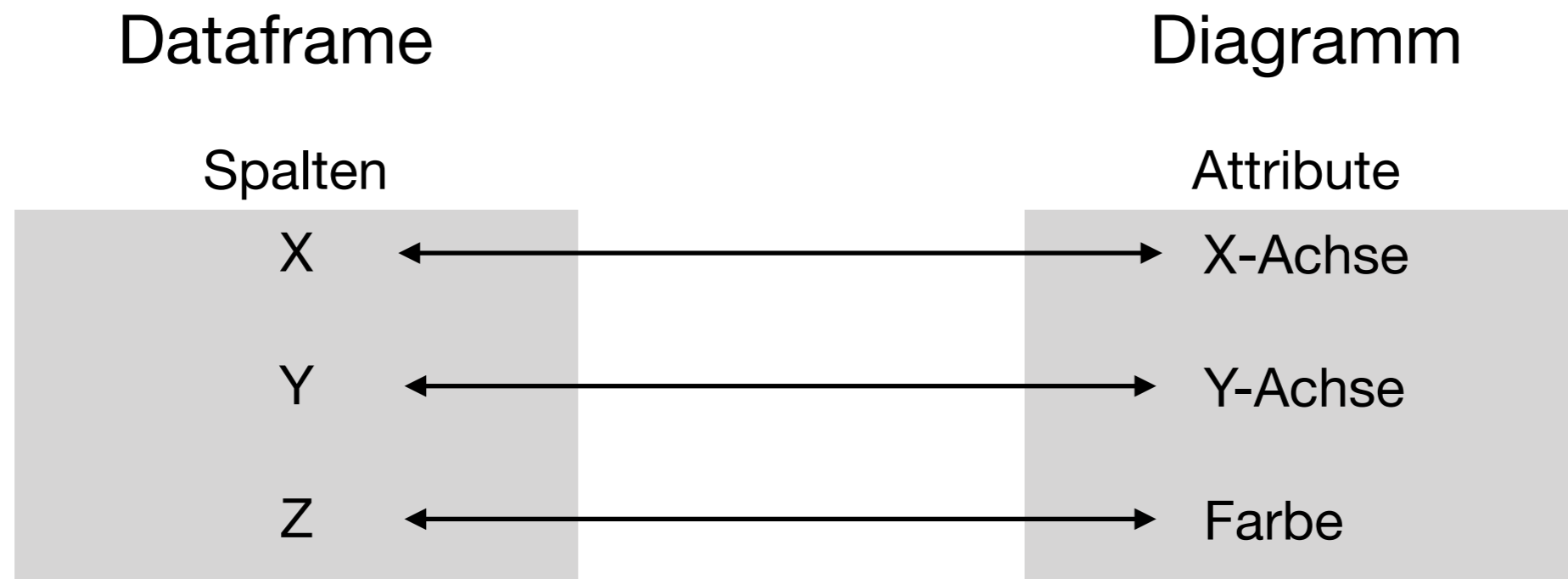
Geom

Zusammenhang nominaler Variablen

Einige Geome

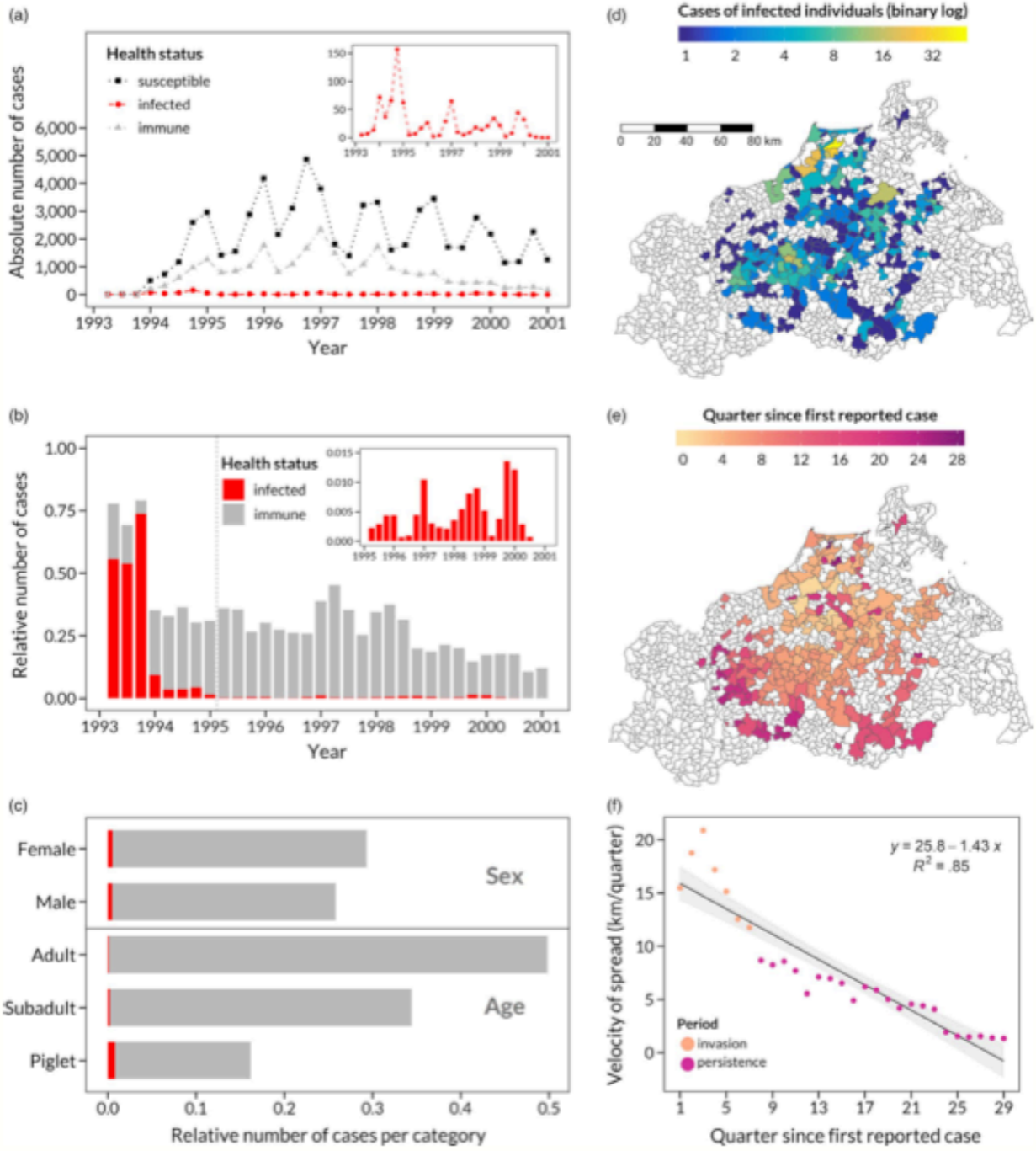


Zuordnung von Variablen zu Diagrammattributen



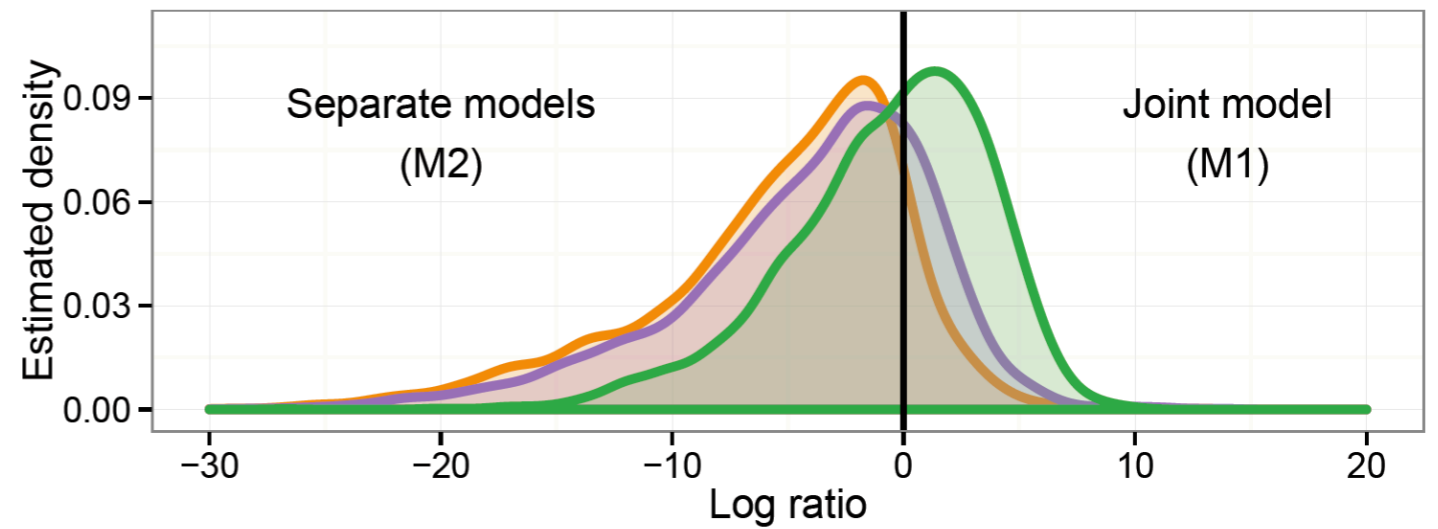
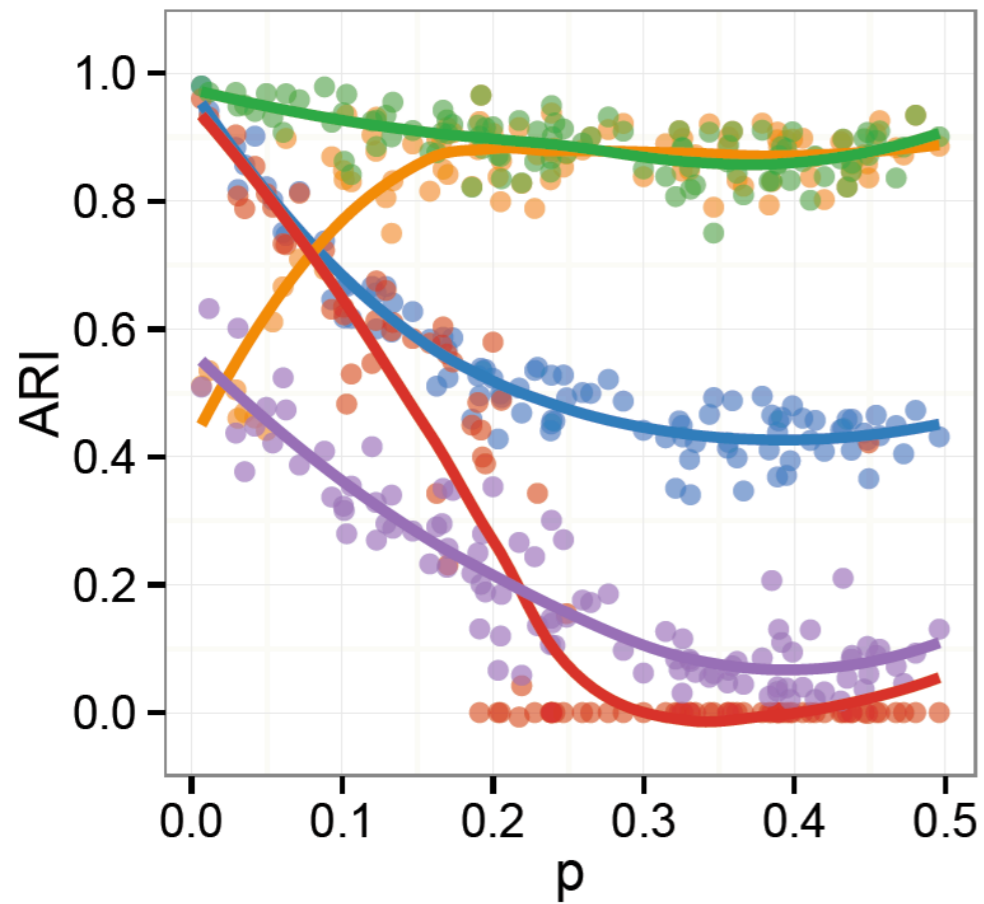
Beispiele für Datendiagramme

Datendiagramm mit ggplot2

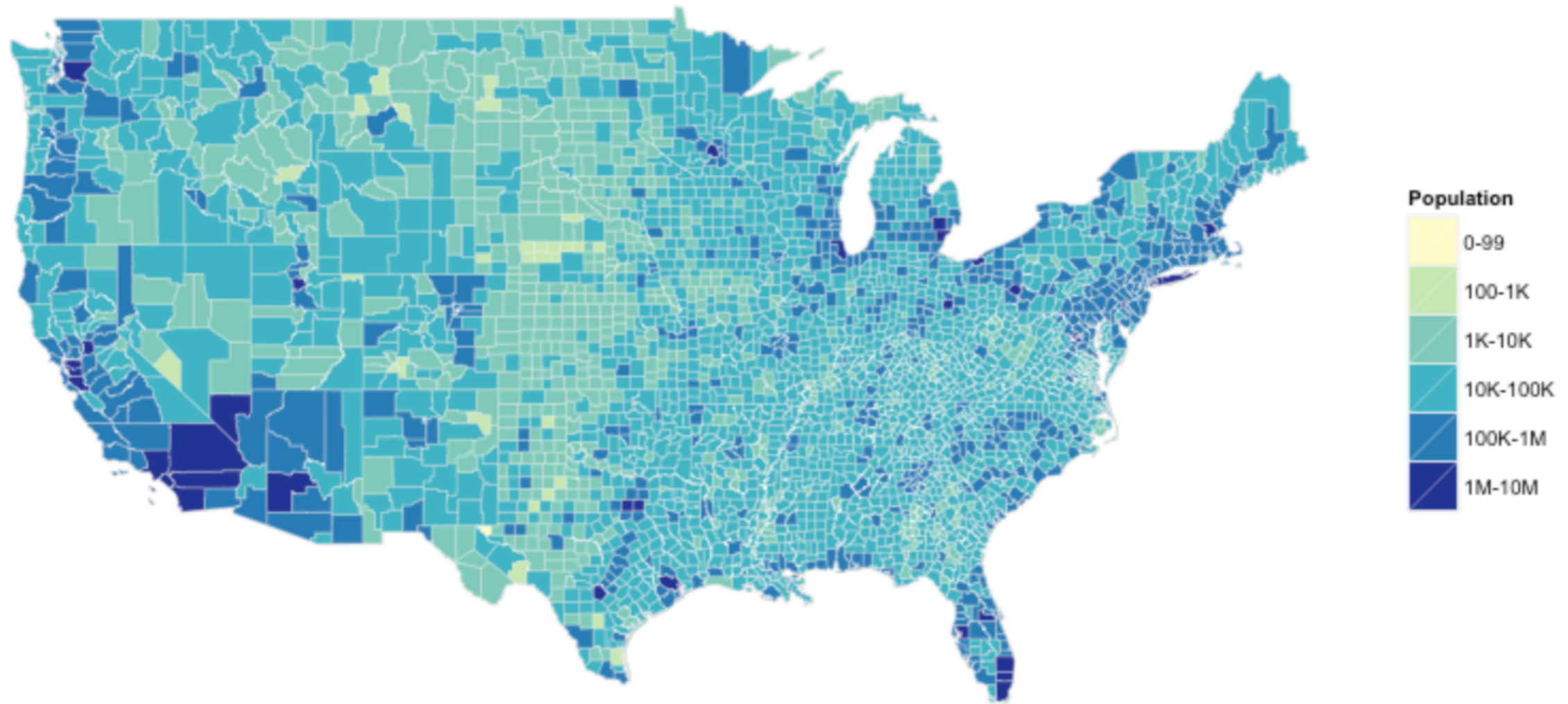


Scherer, C., Radchuk, V., Staubach, C., Müller, S., Blaum, N., Thulke, H., & Kramer-Schadt, S. (2019). Seasonal host life-history processes fuel disease dynamics at different spatial scales. *Journal of Animal Ecology*, 88(11), 1812–1824. <https://doi.org/10.1111/1365-2656.13070>

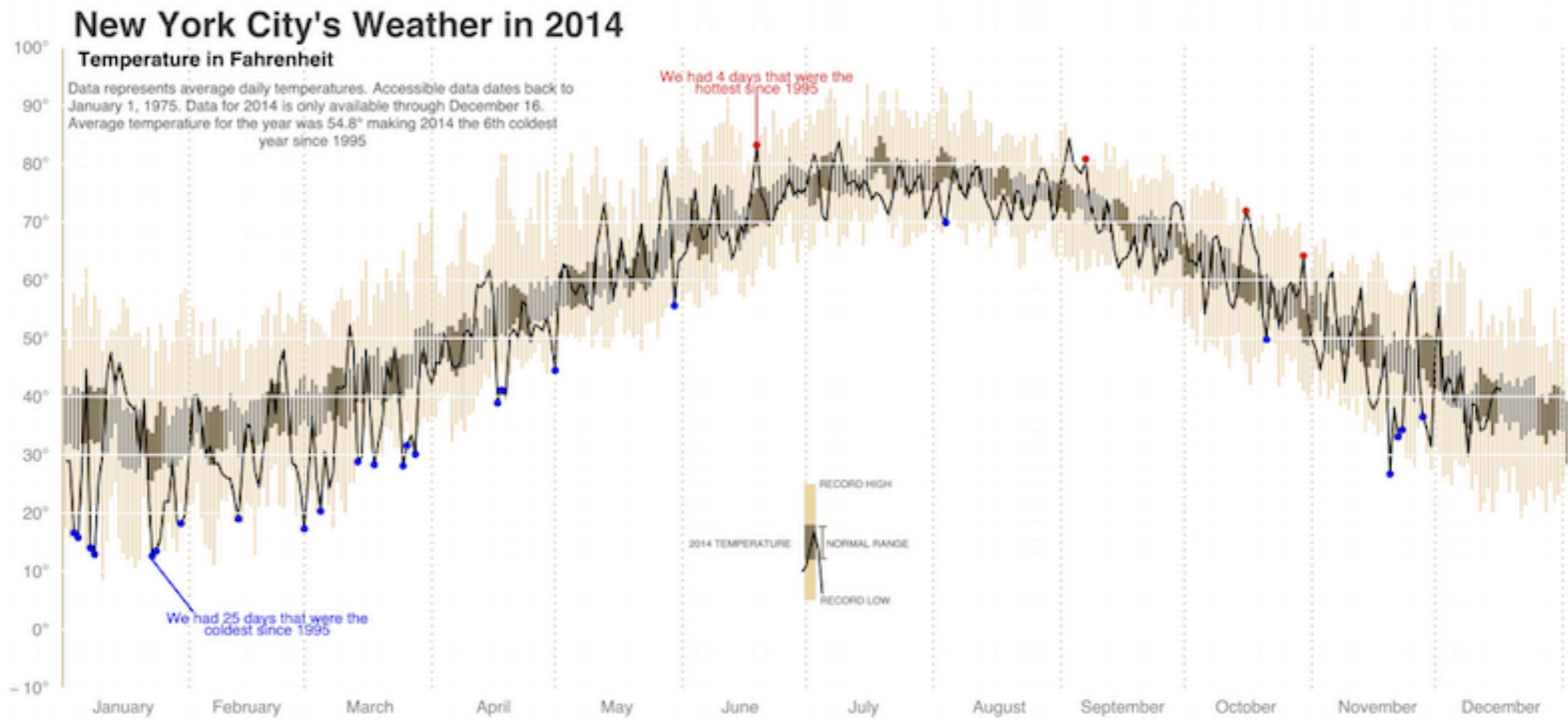
Typische Diagramme in der Statistik, Beispiele



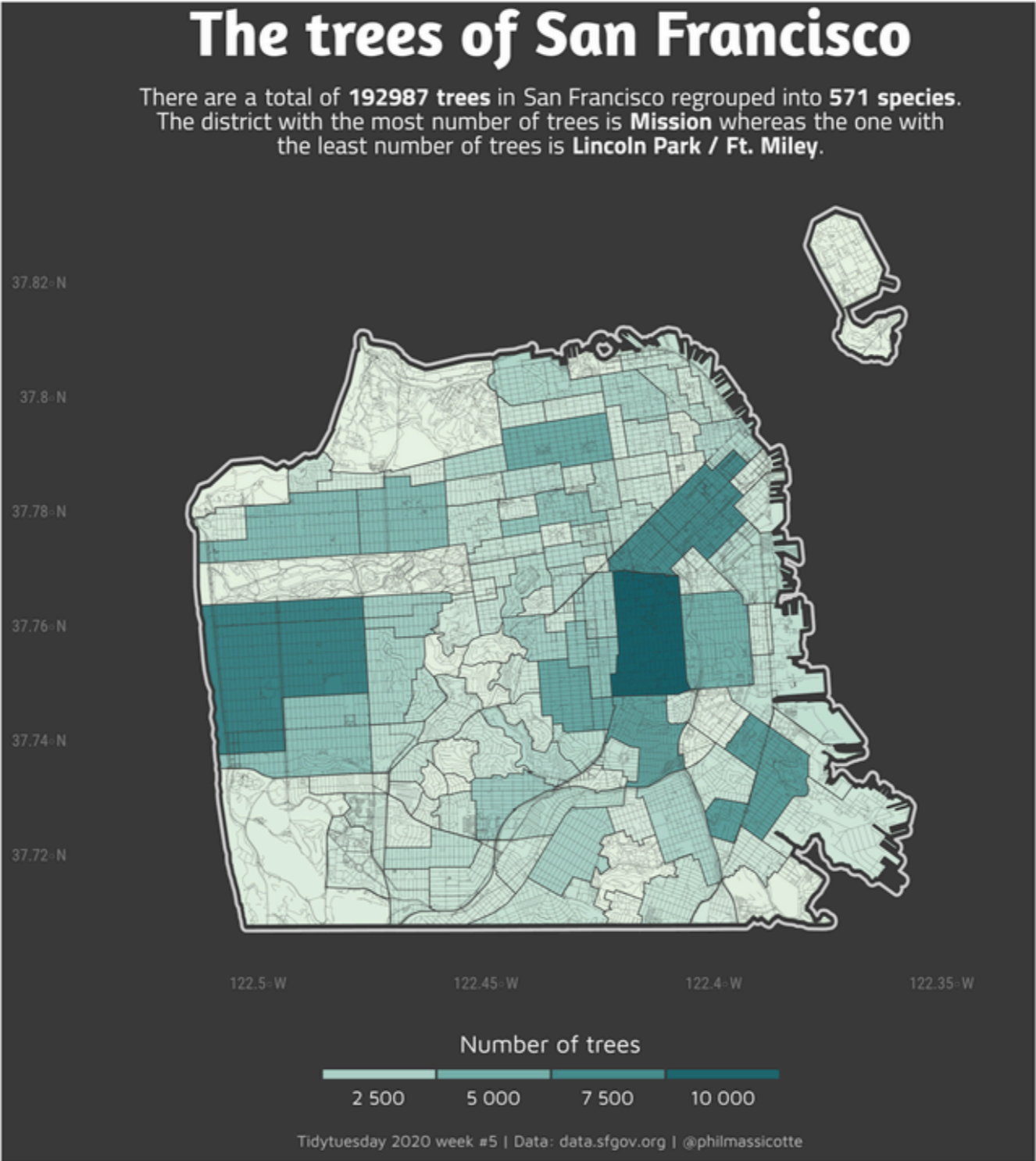
Beispiel: Geo-Visualisierung



Beispiel: Liniendiagramm

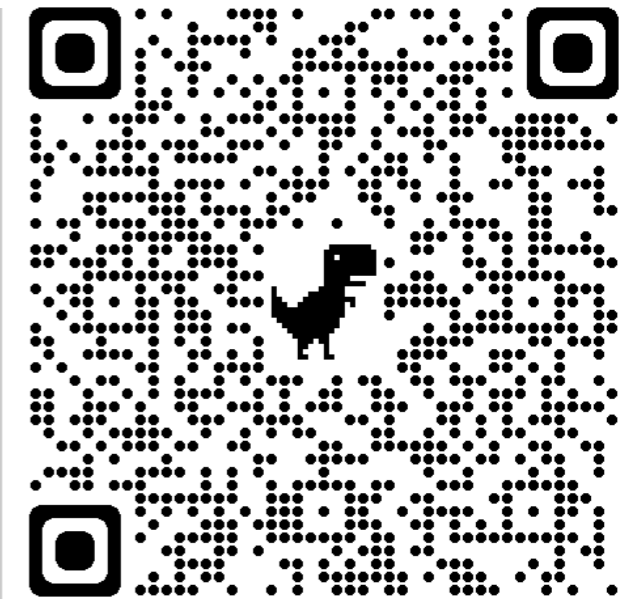
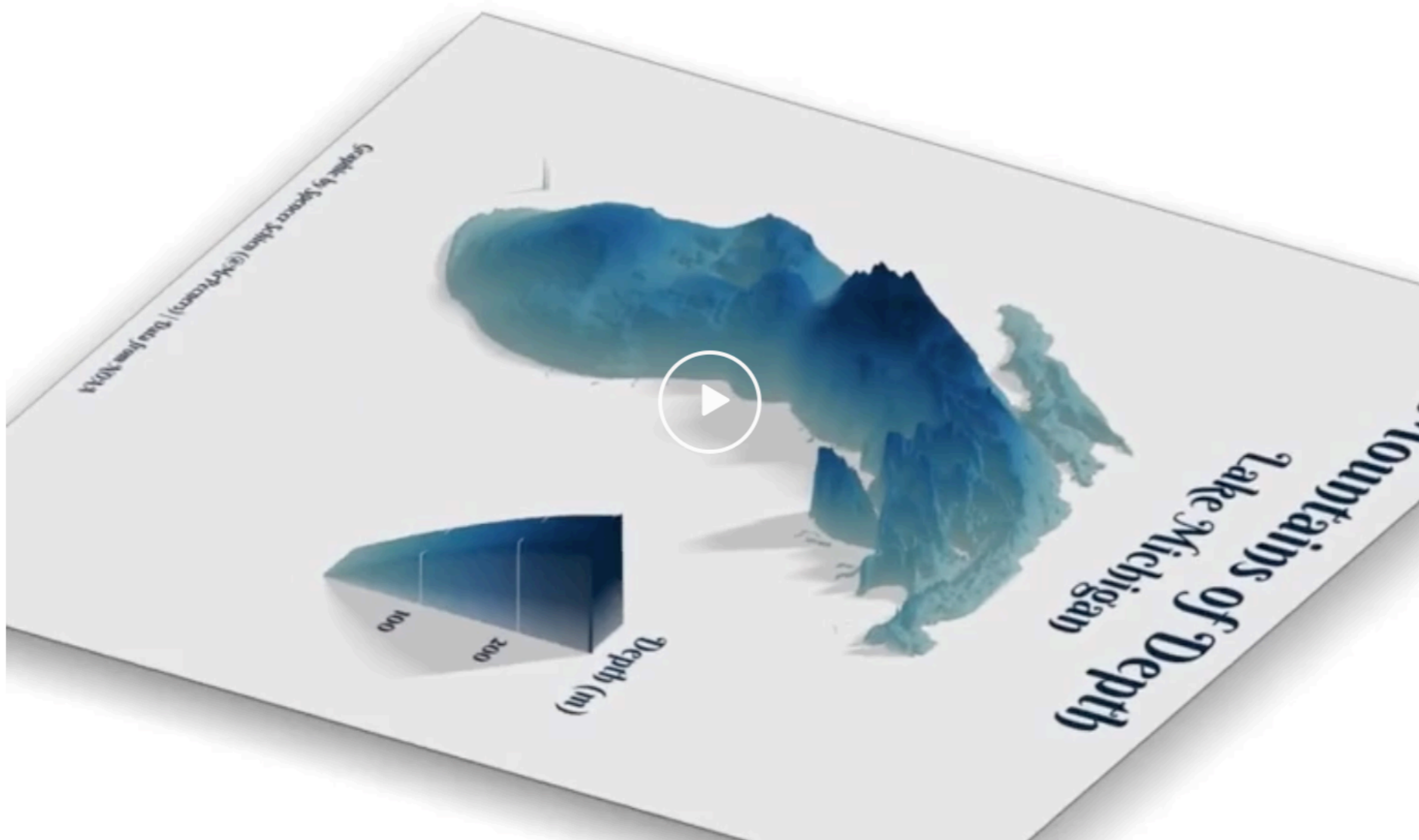


Bäume in San Francisco

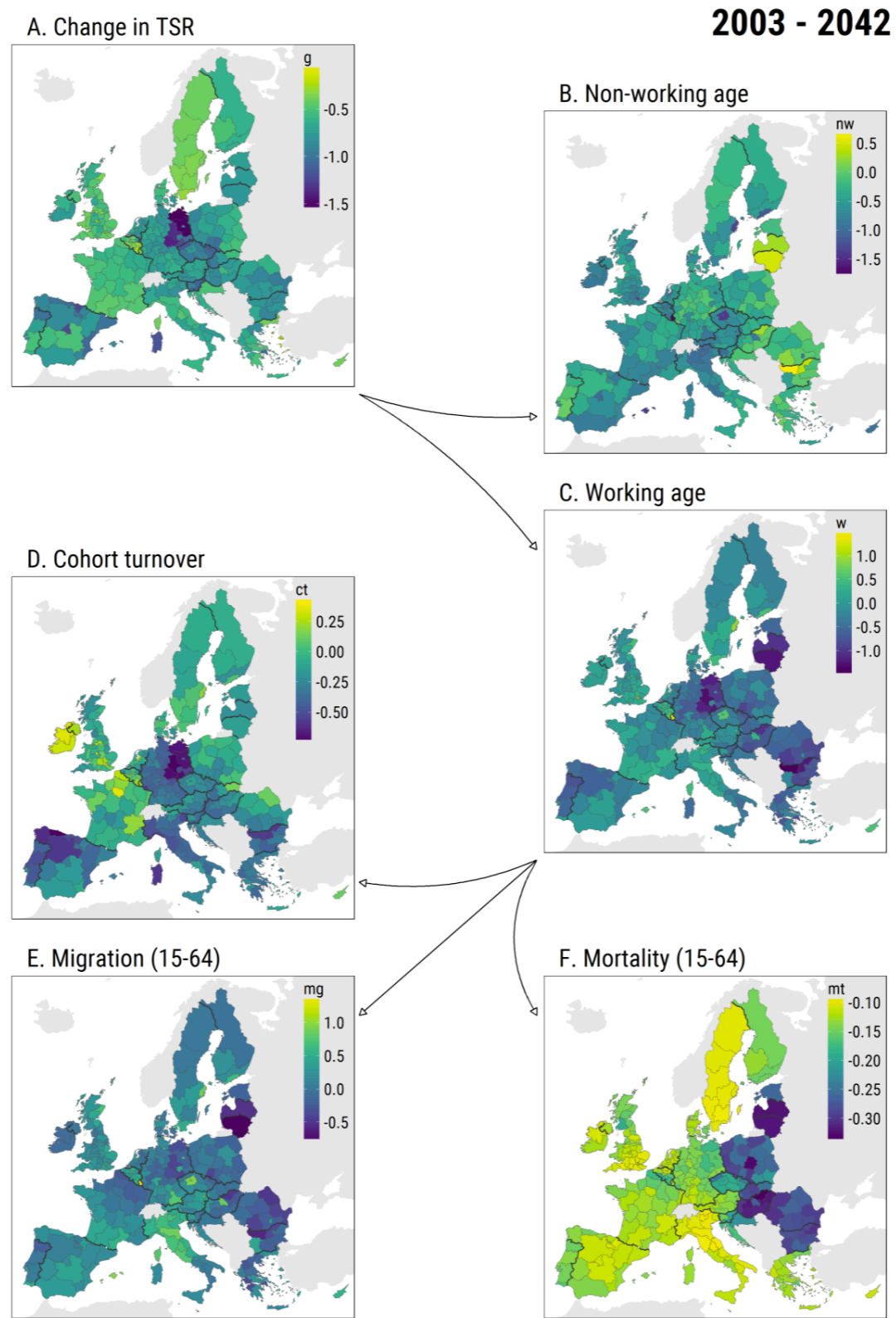


3D-Animation

OC



Facetten-Diagramme (Teil-Diagramme)



Abschluss

Hinweise

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- ▶ Autor: Sebastian Sauer
- ▶ Für externe Links kann keine Haftung übernommen werden.