

Manipulate view

Data Visualization

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Why use view change?

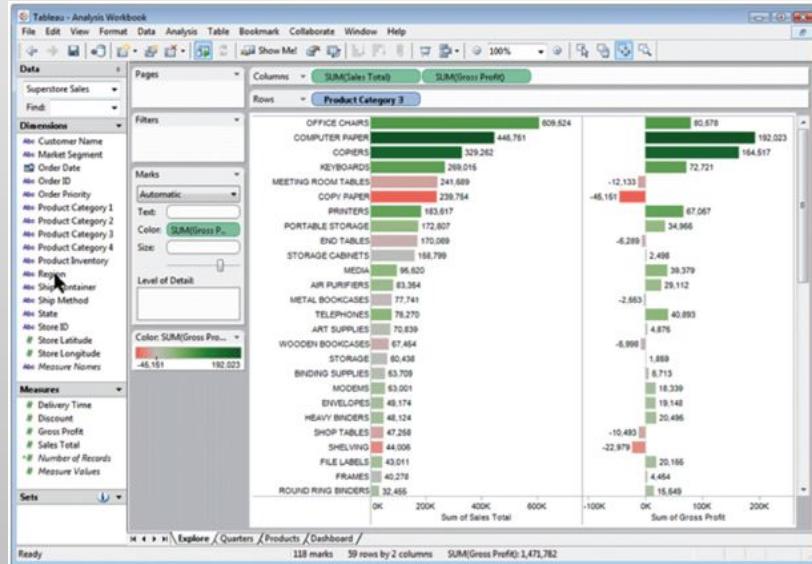
Manage visual complexity

1. Derive data
2. **View change**
3. Facet
4. Reduce
5. Dimensionality reduction

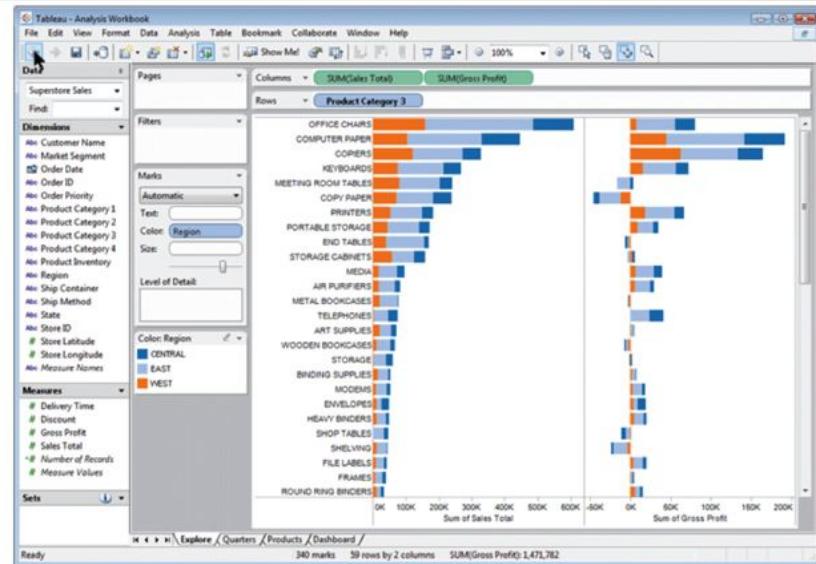
View change: Design choices

- Change over time
- Select
- Navigation
 - Item reduction
 - Zoom (geometric semantic)
 - Pan
 - Constrain
 - Attribute reduction
 - Slice
 - Cut
 - Project

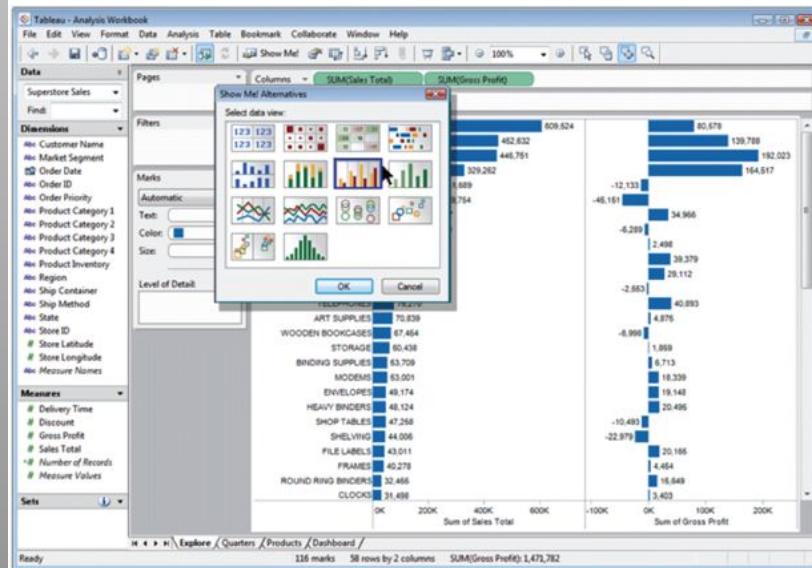
Design choice – Change view of time



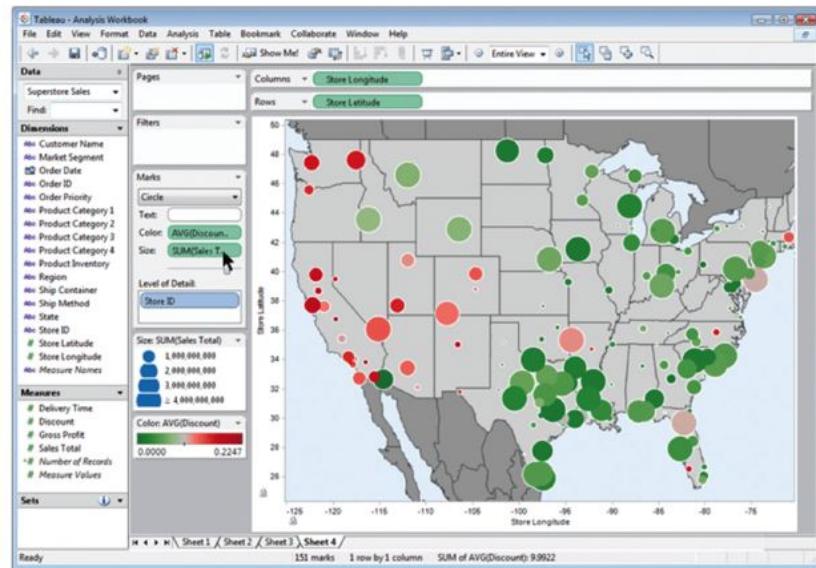
(a)



(b)



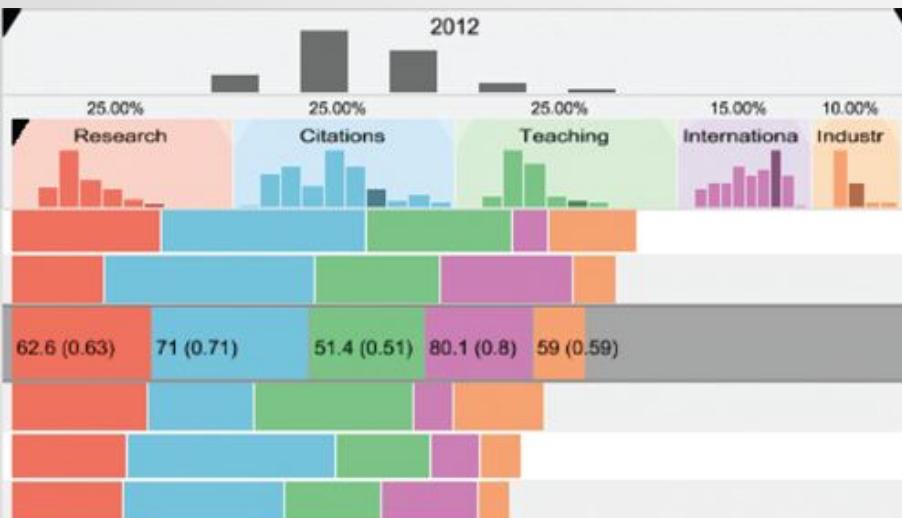
(c)



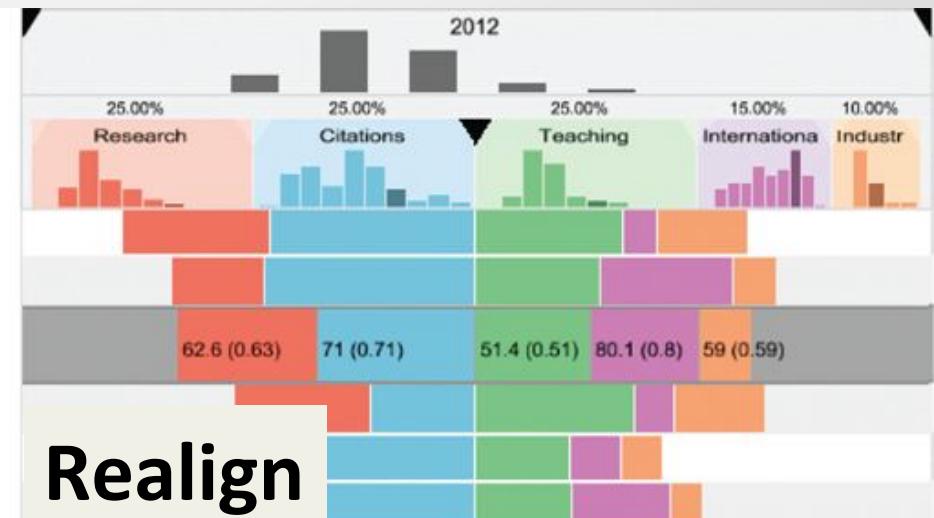
(d)

Figure: Tableau

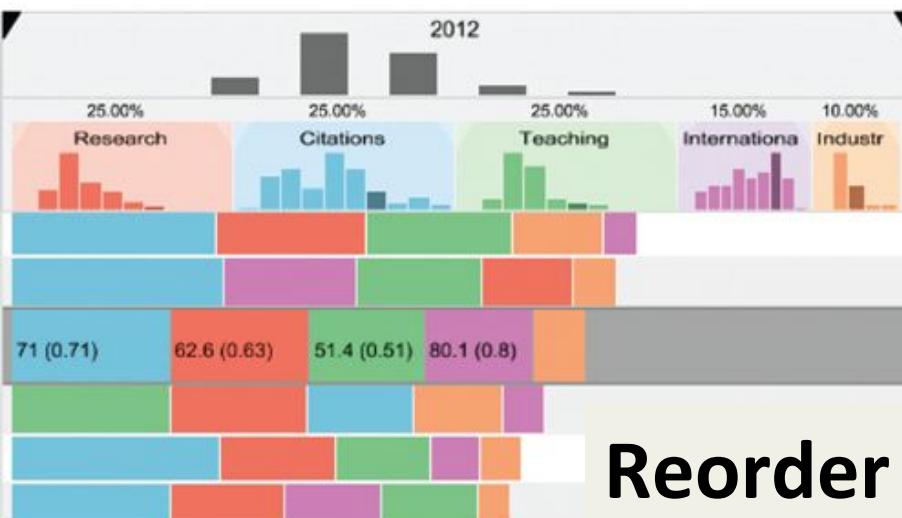
Design choice – Change view of time



(a)

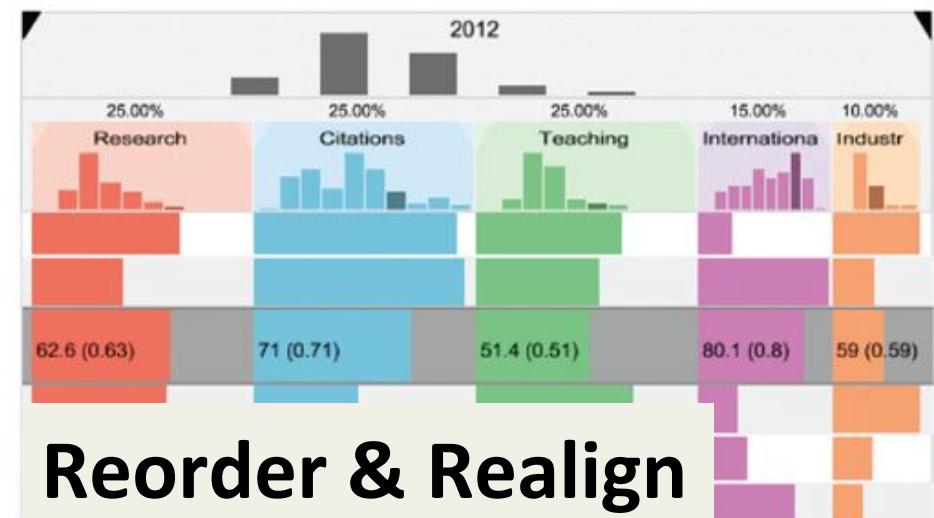


(b)



Reorder

(c)



Reorder & Realign

(d)

Design choice – Change view of time

Animated transitions

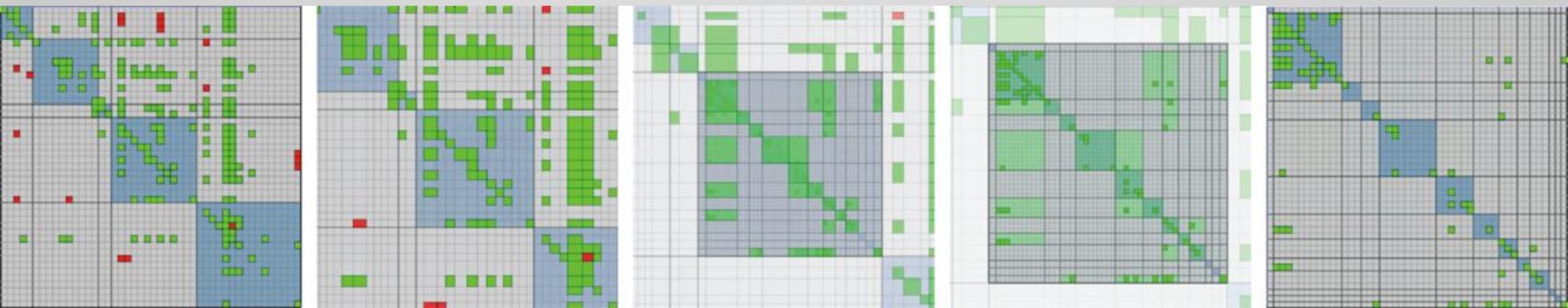


Figure: Heer and Robertson. "Animated Transitions in Statistical Data Graphics."

Design choice – Select

Single

Multiple

Contiguous

Non contiguous

Selection and Highlighting are coupled.

Highlighting may interfere with color channel attribute.

- Outline
- Different line styles
- Motion
- Separate selection window
- Context preserving links

Design choice – Select



Figure: Steinberger et al. "Context-Preserving Visual Links."

Design choice: Navigation (Item reduction)

Scrolling or Panning in 2D

Zooming

Geometric – Scaling only

Semantic – Contents changed based on available space

Line charts

[Maps](#)

Design choice: Navigation (Attribute reduction)

- Slice
- Cut
- Project

Design choice: Navigation (Attribute reduction)

- Slice
- Hyperslice

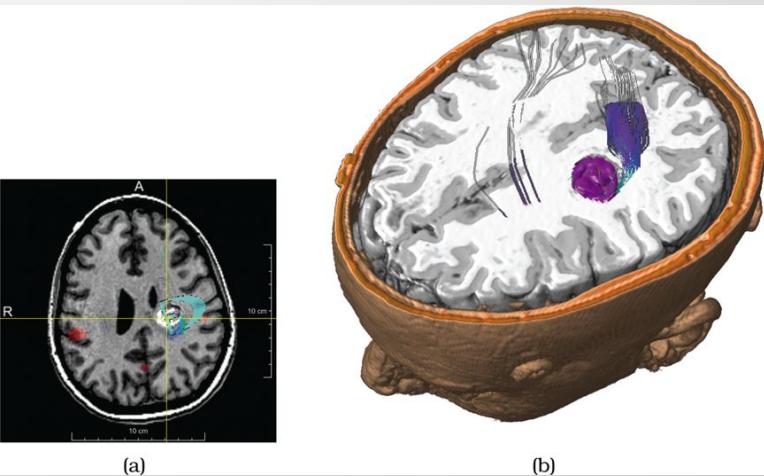


Figure: Rieder et al. "Interactive Visualization of Multimodal Volume Data for Neurosurgical Tumor Treatment."

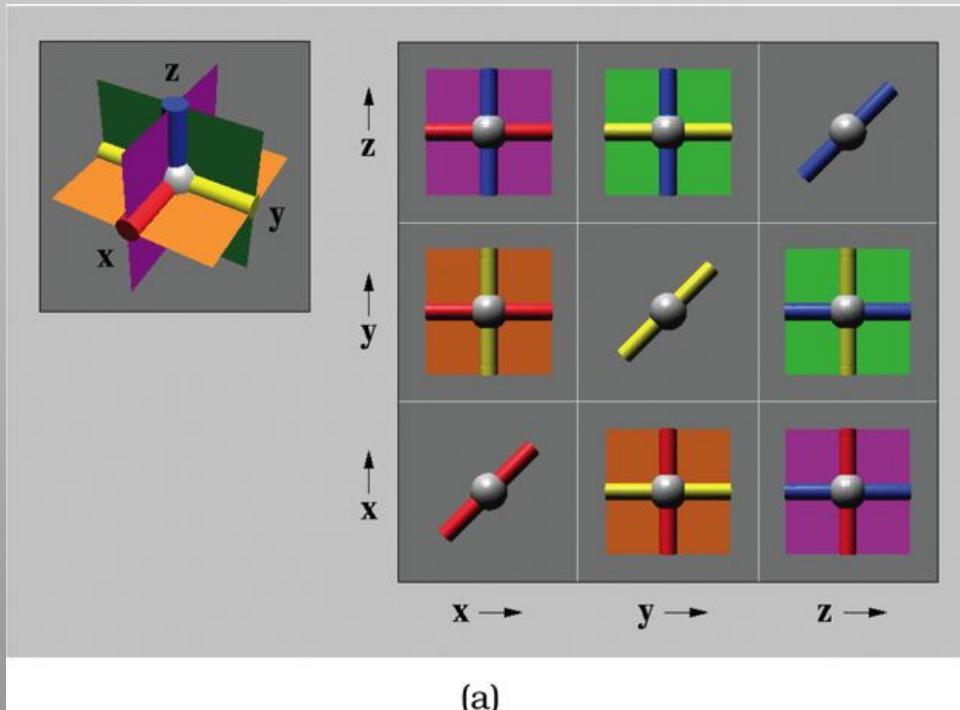
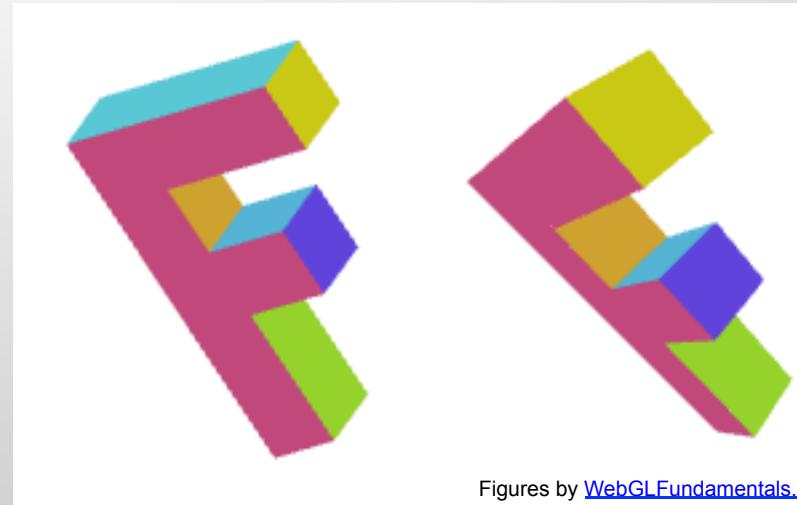


Figure: van Wijk and Liere. "HyperSlice: Visualization of Scalar Functions of Many Variables."

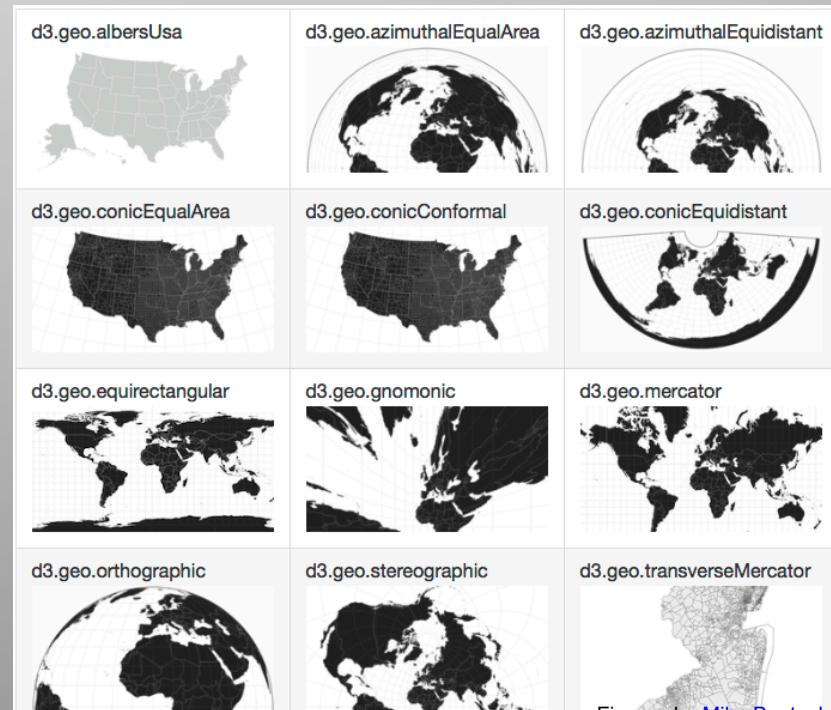
Design choice: Navigation (Attribute reduction)

- Project
 - Orthographic vs Perspective



Figures by [WebGLFundamentals.org](#)

- Map projections



Figures by [Mike Bostock](#)

Readings

- Visual Analysis and Design – Chapter 12