Building and Shifting Visual Narrative

### DESIGN ELEMENTS

Ways of visually encoding pattern and quantity

- Color
- Value/Gradation
- Texture
- Symbol
- Sequence
- Size + Scale
- Orientation
- Proximity/Density
- Length
- Area
- Proportion
- Count

See “45 ways to communicate two quantities” for more ideas

blog.visual.ly/45-ways-to-communicate-two-quantities

Created by Steven Braun
Data Analytics and Visualization Specialist

### TRANSFORMATIONS

Manipulations of design elements that transform interpretations

- **Truncate, extend, or invert axis**

- **Quantize data**

- **Collapse cumulative data**

- **Selectively filter or omit data**

- **Collapse null and zero values**

- **Distort perspective or scaling**

- **Plot unrelated data together**

- **Plot data with different scales together**

- **Use perceptually non-uniform color palettes**

- **Use inconsistent placement of chart elements, like labels**

### NARRATIVE SHIFTS

Ways a narrative can be shifted as the result of transformations

- **Exaggerate a trend**
  
  Make a positive or negative trend seem more significant than it is

- **Exaggerate a difference**
  
  Make the difference between compared data seem more significant than it is

- **Minimize a trend**
  
  Make a positive or negative trend seem insignificant or absent

- **Minimize a difference**
  
  Make the difference between compared data seem insignificant or absent

- **Reverse a trend**
  
  Make a positive trend appear negative and vice versa

- **Hide variability**
  
  Make variable data appear uniform and monotonic in behavior

- **Show false correlation**
  
  Imply correlation or causation between unrelated variables

- **Exaggerate effect based on proportion**
  
  Magnify behavior in data by proportioning small values to elements with high gravity in a design (e.g., on a map)
Dichotomies of Design in Information Visualization

PROXY AND ARTIFACT

Observed patterns in a visual representation of data should proxy the actual behavior of those data instead of result from an artifactual consequence of a design choice.

PARSIMONY AND DIMINISHING RETURNS

Visualization is most effective when it is designed parsimoniously: simplify the number and complexity of narratives along with their visual encodings in any given visual representation.

REDUCTIONISM AND HOLISM

Visualization facilitates both close reading and distant reading of data; some patterns may emerge on small, local scales and others on global ones, and it is the responsibility of the designer to balance them effectively.

BIAS AND AUTHORITY

A single visual representation of data captures a differential slice of a larger narrative; as constructed space, how that narrative is interpreted arises from the intersection between the biases and experiences of designer and user.