A STUDY IN MAP PRESENTATION:
Our Experience Creating “How Vulnerable Are American Communities to Automation, Trade, & Urbanization?”

Nathan Law & Victoria Meldrum
Ball State University Center for Business and Economic Research
Outline of Presentation

1. *Spreadsheet to Presentation*: Considerations When Portraying Data for Policy Makers
3. *Data Presentation*: Lessons Learned
SPREADSHEET TO PRESENTATION:
Considerations When Portraying Data for Policy Makers
Data Visualization in Policy

- Data presentation method can affect audience interpretation
  - “An 80 percent reduction in fatalities” versus “20 percent of deaths will still occur”
- When the audience interpreting your data is an audience of policy makers, this interpretation can have far reaching effects
Talking Data Visualization

- Consider the following in your discussion:
  - Who is the target audience?
  - What does this visualization really add?
  - What level of detail needs to be included?
- You may not have the answer to all of these questions, but be ready to talk them out with your visual expert.
Understand the Target Audience

- *Who?* Typically the most important question
- Understanding the target audience can help inform the answer to other questions
  - Level of scale
  - Level of detail
Examples of Scale
Examples of Detail
Internal Considerations

When giving information to your visual expert...

- Verify data format
  - (Excel, CSV, etc)
- Additional data needed?
- For publication or used internally to aid analysis?
- Agree on an internal timeline
  - Graphics are usually needed before the project deadline
TALKING SHOP:
Best Practices in Map Making
Options for Mapping Data

Options vary depending on base maps, level of manipulation

- **Graphic designers use...**
  - Google Maps, Bing Maps
  - PDF vector maps - NationalAtlas.gov, GIS output (PDF, AI)
  - Adobe Illustrator

- **Other experts use...**
  - GIS software - ArcGIS, ESRI, others
  - Data viz software - Google Charts, Highsoft, Tableau, R Project
  - *Automate for Census tracts, school districts, 100+ data points*
Tips for Polished Maps

Limit number of colors

- Digital - tone down bright colors
- Print - more contrast okay
- Colorblindness

Outlines

- White outlines look more modern
- Make black outlines very thin

Label necessary elements

- Make labels legible - size, bold, shadow/outline

Examples: GeoAwesomeness.com
More Variables = More Problems

« Bad: Bubble chart has overlapping bubbles, pie charts have too many slices, too much data all around

Good: Two variables displayed through color/texture layers »
Equal Representation, Relative Location

Custom map of London boroughs, project by After the Flood (UK design firm)
For Vulnerability Study...

Myriad data points = requires GIS expertise

- Base map already loaded in ArcGIS
- GIS output = fewer human errors
- Ability for bulk revisions

View vulnerability study at projects.cberdata.org
DATA PRESENTATION:

Lessons Learned
Media Response

A follow-up to “The Myth & the Reality of Manufacturing in America” (CBER 2015)

Story on vulnerability study considered by some big names...

- The Atlantic, Wall Street Journal

Actually published in...

- Media - Forbes, Vanity Fair, Washington Post, CBS This Morning, CBS MoneyWatch, Entrepreneur.com, various newspapers, political blogs
- Niche - Rural Policy Research Institute, Gen Re, The Fabricator
- 7,450 unique pageviews on projects.cberdata.org
Professional Feedback

Robert Allison, graph technical expert @ SAS
blogs.sas.com/content/sastraining/2017/07/20/risks-to-us-employment-automation-and-offshoring/

Critique Points

Flip the legend - biggest values at top
Use % because these are percents
Reduce decimal places in division labels
Condense number of divisions
Use a diverging color scale
Rephrase legend title
Behind the Scenes

In our defense...

- Easily show one variable
- Accessibility (color-blind, low vision)
- Black & white printing

Also...

- Simplest, fastest output from ArcGIS for this scale/volume of data points
Alternate Approach

Hot/cold scale in new Appendix 2

But, consider the following when using multiple colors...

- **Color intensity** - muted hues versus default bold hues
- Number of colors/divisions
- Increase general visibility with thickness of lines, size of labels
Side-by-Side Comparison
Last Thoughts

- Discuss your needs and available options with your team or peers
- Set internal deadlines for sample/final
- Keep visuals simple; move comprehensive data to appendix
- Consider audience familiarity w/ topic
- Use plain language on labels, legibility
- Clearly differentiate color scale
- Ask how visuals can be misinterpreted

Contact Info

Nathan Law - NMLAW49@gmail.com
- former graduate research assistant @ Ball State CBER
- background: urban planning, public administration

Victoria Meldrum - VRMELDRUM@bsu.edu
- manager of publications @ Ball State CBER
- background: journalism graphics, user centered-design