



UNC GREENSBORO

University Libraries

Ethics & Empathy in Data Visualization

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A little about me



- GIS & Data Visualization Librarian
- Library Liaison to:
 - MS in Informatics & Analytics Program
 - Geography, Environment, & Sustainability Department
- Visualizing the Future Symposia Fellow

Previously:





- 1. Data visualization at the library**
- 2. Empathy's role**
- 3. Ethical data visualization**

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Data visualization at the library

The “data-driven” library

- Computer and space usage
- Database and website access
- Circulation statistics
- Reference interactions & instruction sessions
- Financial health & staffing
- Community demographics
- AND MORE

Why?

- Request and justify funding...
- Identify need for collection development (or weeding)...
- Plan programming and services...

...to meet the needs of our users.



Sources of library data

- Library/Branch/System specific data
- Public library surveys:

IMLS Public Libraries Survey (PLS)

- Public library use
- Financial health
- Staffing
- Resources

PLA (ALA) Public Library Data Service (PLDS)

- Service usage
- Finances
- Resources
- Technology



- PLA Community engagement resources (bit.ly/pla-engagement)
- Demographic data:
 - US Decennial Census & Annual ACS
 - Databases like [PolicyMap](#), Social Explorer



“Data visualization is another form of visual art that grabs our interest and keeps our eyes on the message. When we see a chart, we quickly see trends and outliers. If we can see something, we internalize it quickly. It’s storytelling with a purpose.”

From Tableau's [Data visualization beginner's guide](#)

What's your purpose?

Summarizing or
simplifying findings



Starting a conversation



Reporting on a target
or goal



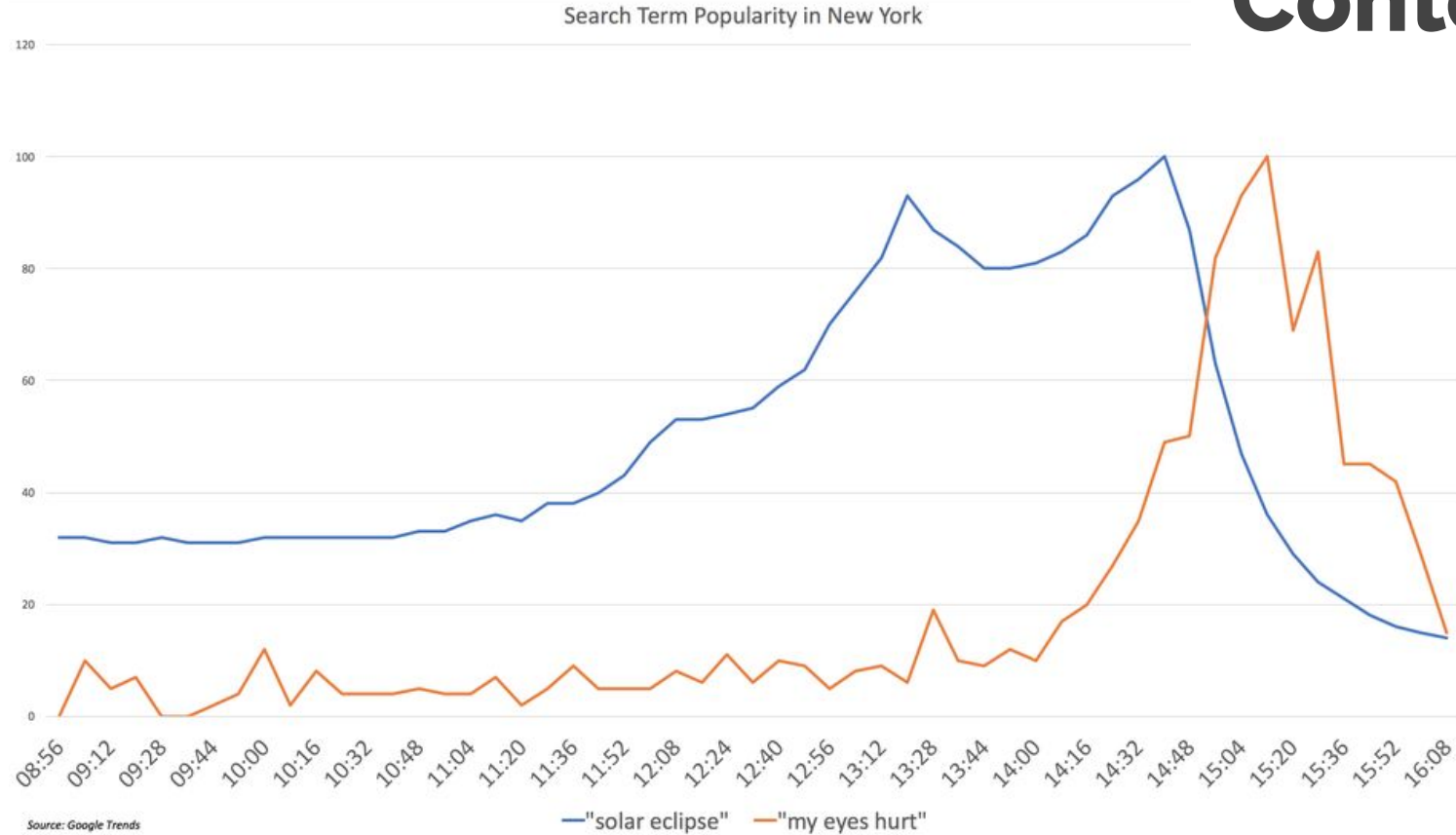
Investigating where
your piece fits in the
puzzle



2

Empathy's role

Context



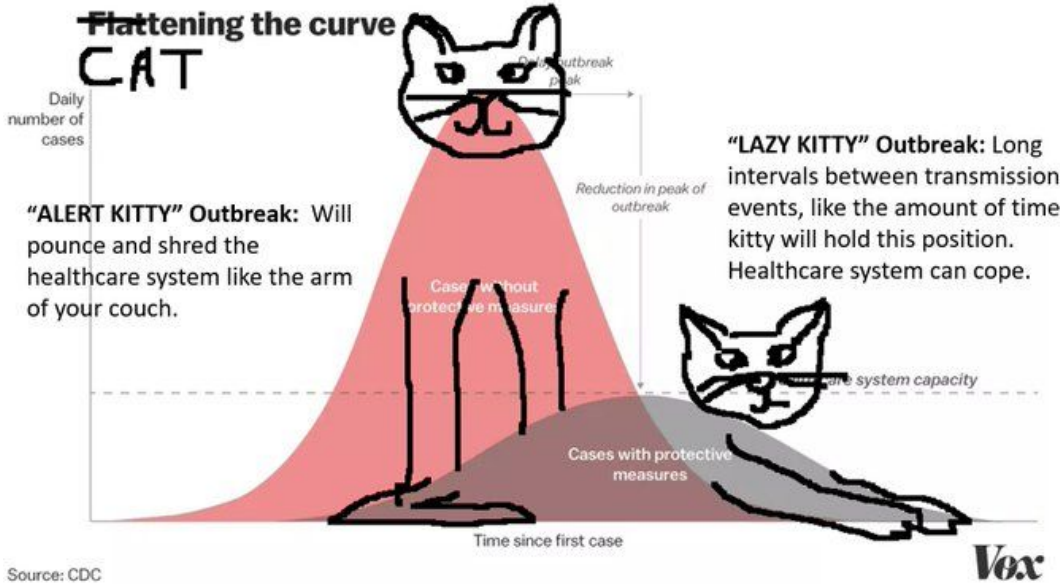
Experience

Anne Marie Darling @amdarling · Mar 11
Lots of science-y folks are posting this graph. But if there is one thing I have learned from being on the internet, it is this:























Data/graphs: Not compelling to many.
Kitties: Compelling to many.

So I present: #Catteningthecurve.
#scicomm #epitwitter

818 26.1K 56.5K



Design

Designing for users with low vision	Designing for users who are Deaf or hard of hearing	Designing for users on the autistic spectrum	Designing for users with physical or motor disabilities	
Do... use good colour contrasts and a readable font size  publish all information on web pages  use a combination of colour, shapes and text  200% magnification  follow a linear, logical layout  put buttons and notifications in context 	Do... write in plain English Do this. use subtitles or provide transcripts for videos  use a linear, logical layout  break up content with sub-headings, images and videos  let users ask for an interpreter when booking appointments 	Do... use simple colours  write in plain English Do this. use simple sentences and bullets  make buttons descriptive  build simple and consistent layouts 	Do... make large clickable actions  give form fields space  design for keyboard or speech only use  design with mobile and touchscreen in mind  provide shortcuts 	Don't... use bright contrasting colours use figures of speech and idioms create a wall of text make buttons vague and unpredictable build complex and cluttered layouts Don't... demand precision  bunch interactions together  make dynamic content that requires a lot of mouse movement  have short time out windows  tire users with lots of typing and scrolling 

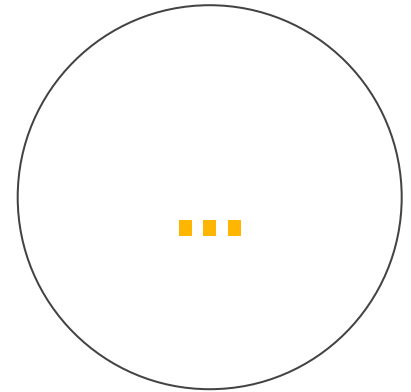
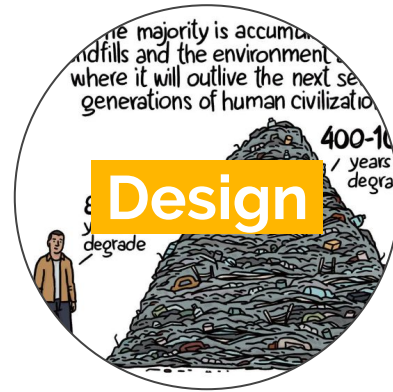
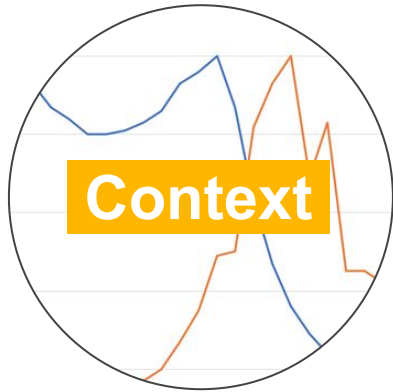
Design elements:

- Space and scale
- Color
- Iconography
 - “Anthropographics”
- “Data comics” - datacomics.net

["Data Visualization + Empathy"](https://bit.ly/dataviz-empathy)
(bit.ly/dataviz-empathy) by Sally
Gore and Tess Grynoch, Visualizing
the Future Symposia Research
Fellows

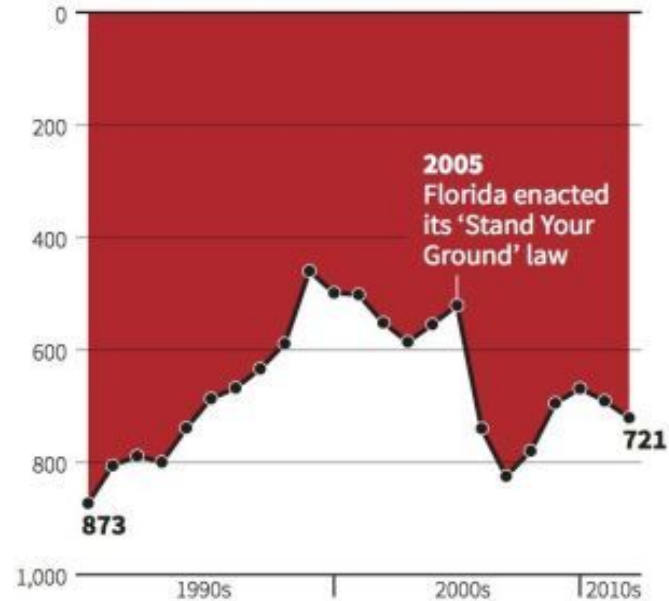


Connecting with your community using empathy



Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

REUTERS

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Ethical data visualization

Things to keep in mind

- Is the data being accurately represented
- Exploitation vs. benefit
- Privacy and confidentiality
- Data visualization is an extension of other data activities



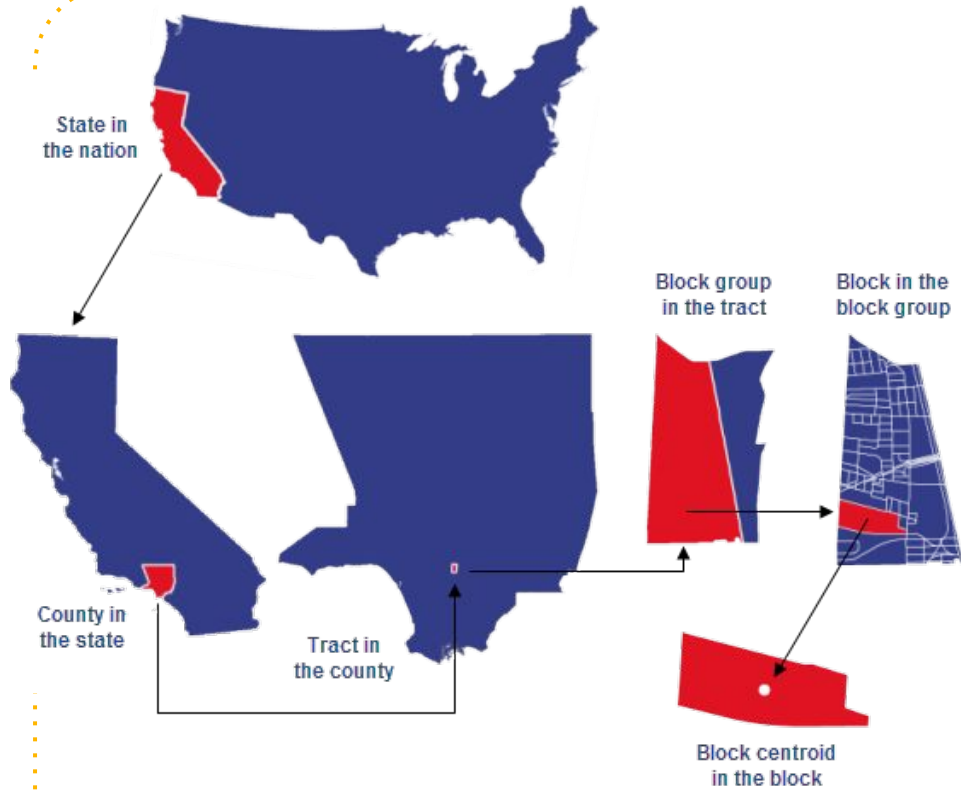
**Data visualization is
an extension of
other data activities**



Questions to ask

- Who is your community?
- Is the data considered public knowledge/information, and/or is there an expectation of confidentiality?
- Does your community/subject know about the data collection?
- Did they consent to collection **and** give permission for sharing?
- How will the data be used?
 - How **could** the data be used?
- What are the risks and what is the risk level?

Image from [Learn ArcGIS: United States Census Geography](#)



Tectonix GEO @TectonixGEO · Mar 24
Want to see the true potential impact of ignoring social distancing? Through a partnership with @xmodesocial, we analyzed secondary locations of anonymized mobile devices that were active at a single Ft. Lauderdale beach during spring break. This is where they went across the US:

6.7M views 0:00 / 1:14

1.4K 16.9K 22.1K

[Tweet by @TectonixGEO](#). 24 Mar. 2020, retrieved 5 May, 2020.

Thanks!



Any questions?

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References not cited directly on slides:

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