Data Storytelling Notes + Resources
October 11, 2017

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the story vs. the narrative

- **the story (requirements)**
  - The elements of a data story
  - Genres and Masterplots

- **the narrative (visualization)**
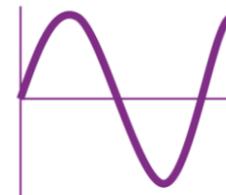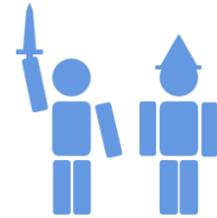 - Rhetoric (Normalization + Closure)
  - Data poetry

Get your story straight

The first part of telling a story is imagining the story. This is where we gather the requirements of the data story.

Setting
What's the situation?

Characters
Who are the users?
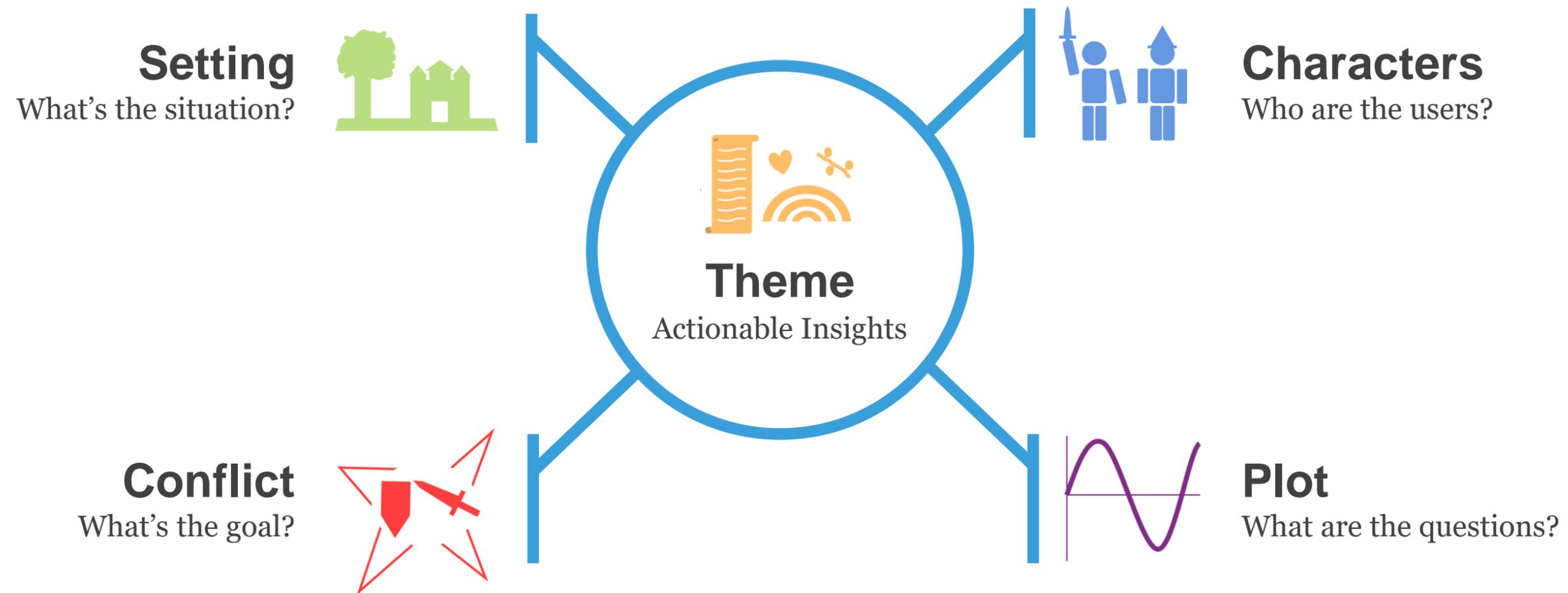
Theme
Actionable Insights

Conflict
What's the goal?

Plot
What are the questions?

Business Question

In CONTEXT As a CHARACTER, I want to know PLOT so that THEME to resolve CONFLICT

In the MORNING, As a PROFESSIONAL CONSULTANT, I want to know WHAT CLOTHES TO WEAR so that I CAN APPEAR PROFESSIONAL to WIN MORE WORK
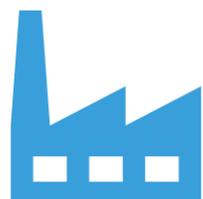
Genres + masterplots

Cut the rework. Just like genres tell familiar stories with similar characters, conflicts, and plots, industries have similar users, goals, and data.
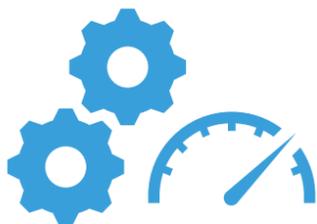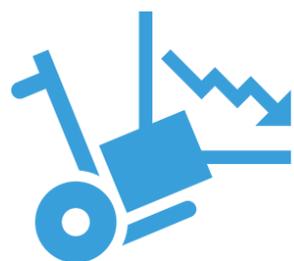
Genres

Health

Manufacturing

Retail

Masterplots

Adherence

Performance

Supply Chain

Archetypes

The Executive

The Ideator

The Investigator

The Coach

Normalization

In data storytelling, normalization builds **credibility**. Normalization makes the users connect with the data, rather than the presentation. It convinces us of "truth".

Coherence

- Does everything make sense as a whole?

- Is there anything that seems out-of-place?

- Is there conflicting information?

Continuity

- Does all the information flow naturally?

- Is there anything critical missing?

- Does the design naturally guide the user?

Codes of closure

Closure determines the "take-away" points of the entire story. While we can't close the user's conflict, we can close certain mysteries through information in the data.

Expectations

- Delaying closure: **Suspense**
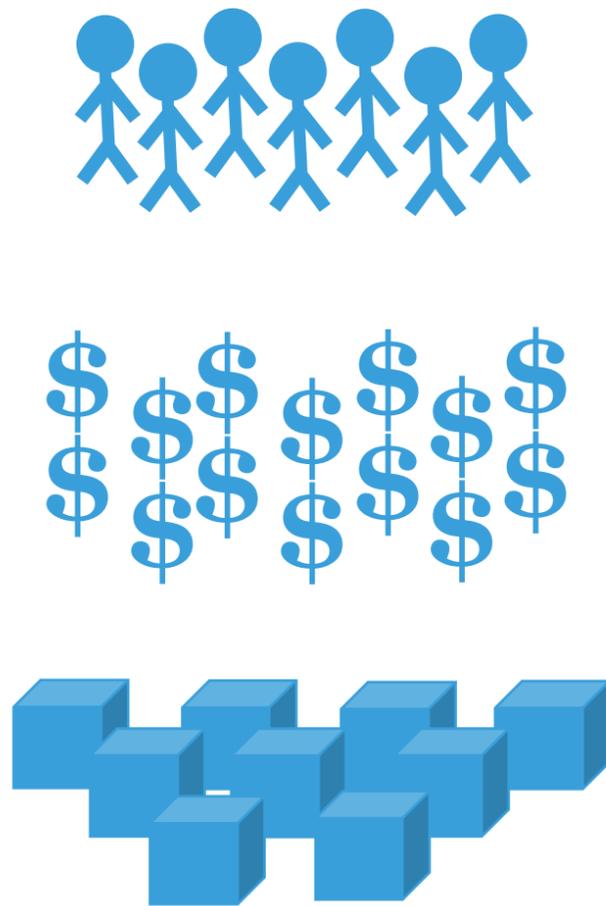
- Unexpected closure: **Surprise**

Questions

- Information
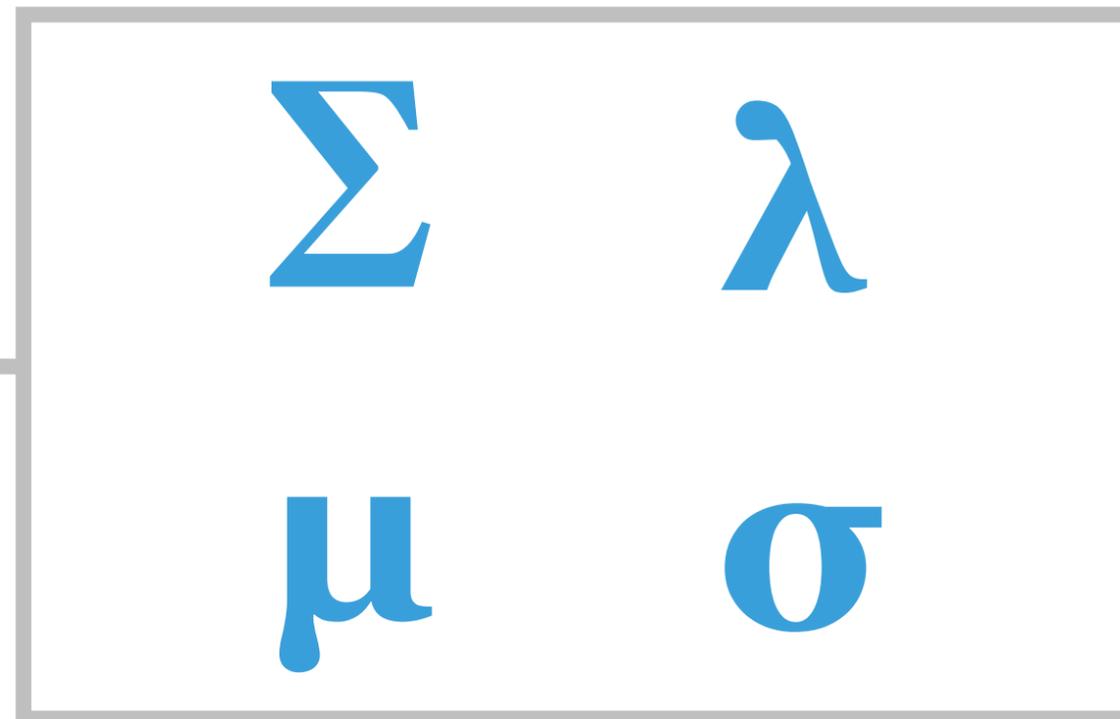
- Disinformation (not *mis*information)

Data Poetry

Raw data

Abstract summary

Image

$$\Sigma \qquad \lambda$$

$$\mu \qquad \sigma$$

Development:

Here are the different ways we train our employees.

Art

- Techniques
  - Aesthetically appealing
  - Visualization is interpretable (minimal clutter, etc.)
  - Demonstrates intentional design choices – font, colors, etc.
- Tools
  - Visualization demonstrates technical skill application
  - Note – this even applies to hand-drawn visualizations

Science

- Statistics
  - Appropriate statistics for data type and insights
  - Creative statistics
- Attention to scientific method
  - Helps avoid confirmation bias

Storytelling

- Visualization provides some sort of value (insights, etc.)
- Visualization is interpretable (provides necessary context)
- The story demonstrates an understanding of the subject matter

Resources:

Follow these people (blogs + Twitter): https://blog.tr3dent.com/2016/03/21/top-10-data-visualization-experts-to-follow-on-twitter/

Technique Books

- *The Wall Street Guide to Information Graphics*, Dona Wong
- *Storytelling with Data*, Cole Nussbaumer Knaflic
- *resonate*, Nancy Duarte
- *The Visual Display of Quantitative Information*, Edward Tufte
- *Envisioning Information*, Edward Tufte
- *Visual Explanations*, Edward Tufte
- *Beautiful Evidence*, Edward Tufte
- *Show Me the Numbers*, Stephen Few
- *Now You See It*, Stephen Few
- *Information Dashboard Design*, Stephen Few
- *Data Points*, Nathan Yau
- *Visualize This*, Nathan Yau
- *The Functional Art*, Alberto Cairo
- *The Truthful Art*, Alberto Cairo

Tool resources

- Qlik Sense: http://www.qlik.com/us/products/qlik-sense/getting-started
- PowerBI: https://powerbi.microsoft.com/en-us/learning/
- Tableau Public: https://public.tableau.com/en-us/s/download
- JavaScript/CSS/HTML, etc.: https://www.codecademy.com/
- D3.js: https://www.dashingd3js.com/table-of-contents

Science books

- *Statistics Done Wrong*, Alex Reinhart
- *Naked Statistics,* Charles Wheelan

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Getting started with some basic "rules"

Remember – a lot of art is about breaking the rules.

Font / Typography

- Avoid *stylized* fonts
- Don't *angle* fonts
- Avoid white font type in colored box
- Use **bold** sparingly to emphasize
- Mix serif and sanserif fonts (i.e. serifs in paragraphs and sanserif in titles)
- Put text directly on charts
- Left align text   right align numbers
- Avoid abbreviations as much as possible

Color

- 10% of males and 1% of females are red-green color-vision deficient
- Be aware of color associations (red-green: Christmas, red-white-blue: US)
- Stick with a palette – here's a site to help: http://paletton.com/#uid=13MouokwpGcjTLopCHZFxtZGEng
- Palette colors should have 3 – 5 hues
- Use color and hue/intensity to highlight
- Avoid bright colors except to highlight (overusing bright colors minimizes the effect they have to draw attention)
- Keep coloring consistent – a color should mean the same thing from visualization to visualization

Layout

- Follow contemporary design (i.e. look online at popular websites like Amazon)
- Place filters/links in consistent places (top/left side for desktop, right side for mobile)
- Top-down processing: provide the information needed to interpret first (so typically top-left)
- Scale charts correctly (height + weight, axes, etc.)
- Maximize real-estate – data should be most of the display
- Eliminate/lessen clutter such as tick-marks, borders, backgrounds
- Avoid the Excel-style 3D charts
- Check http://www.datavizcatalogue.com/search.html for chart/graphic ideas

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