

Data Visualization

Design Concepts

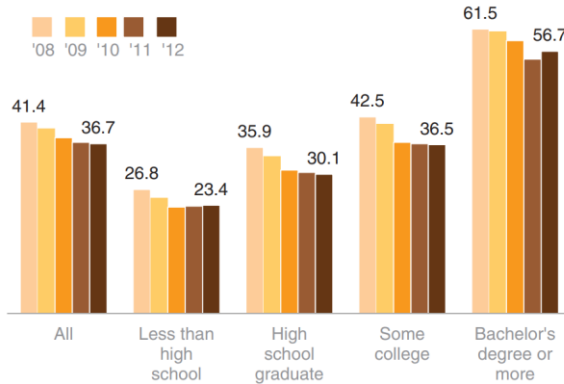
Affordances

- Affordances: aspects inherent to the design that make it obvious how the product is to be used.
- We can leverage visual affordances to indicate to our audience how to use and interact with our visualizations:
 - Highlight the important stuff
 - Eliminate distractions
 - Create a clear hierarchy of information

Highlight the important stuff

New Marriage Rate by Education

Number of newly married adults per 1,000 marriage eligible adults

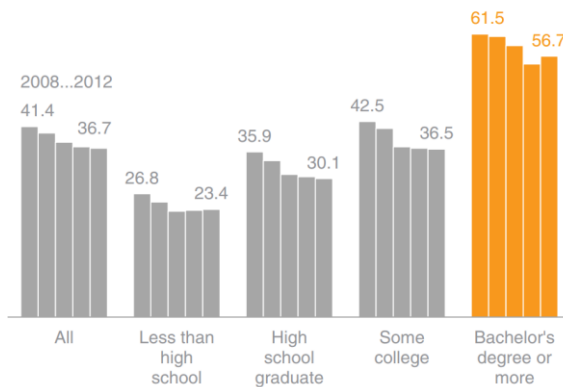


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Highlight the important stuff

New Marriage Rate by Education

Number of newly married adults per 1,000 marriage eligible adults



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Eliminate distractions

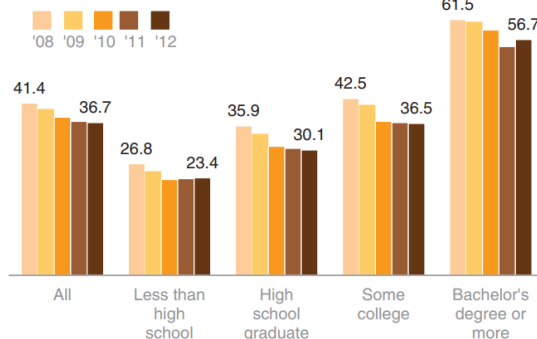
- Not all data are equally important.
- When detail is not needed, summarize.
- Ask yourself: would eliminating this change anything?
- Push necessary, but non-message-impacting items to the background.

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Eliminate distractions

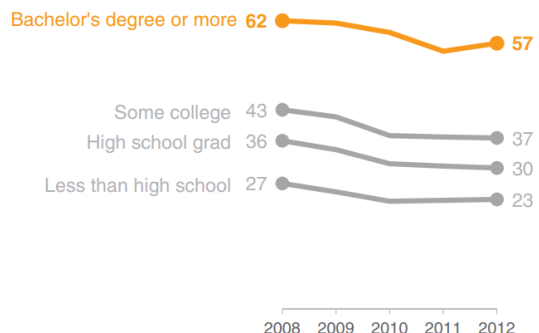
New Marriage Rate by Education

Number of newly married adults per 1,000 marriage eligible adults



New marriage rate by education

Number of newly married adults per 1,000 marriage eligible adults



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Create a clear visual hierarchy

- We can visually pull some items to the forefront and push other elements to the background, indicating to our audience the general order in which they should process the information we are communicating.



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Accessibility

- The concept of accessibility says that designs should be easy to interpret and understand by people of diverse abilities.



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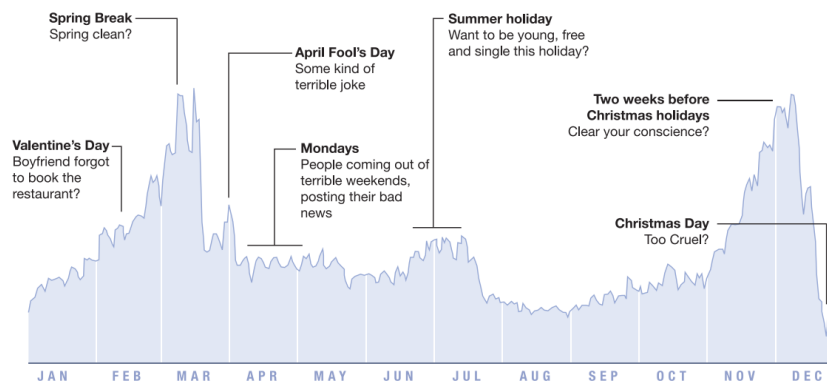
Don't overcomplicate

- **Make it legible:** use a consistent, easy-to-read font (consider both typeface and size).
- **Keep it clean:** make your data visualization approachable by leveraging visual affordances.
- **Use straightforward language:** choose simple language over complex, choose fewer words over more words.
- **Remove unnecessary complexity:** when making a choice between simple and complicated, favor simple.

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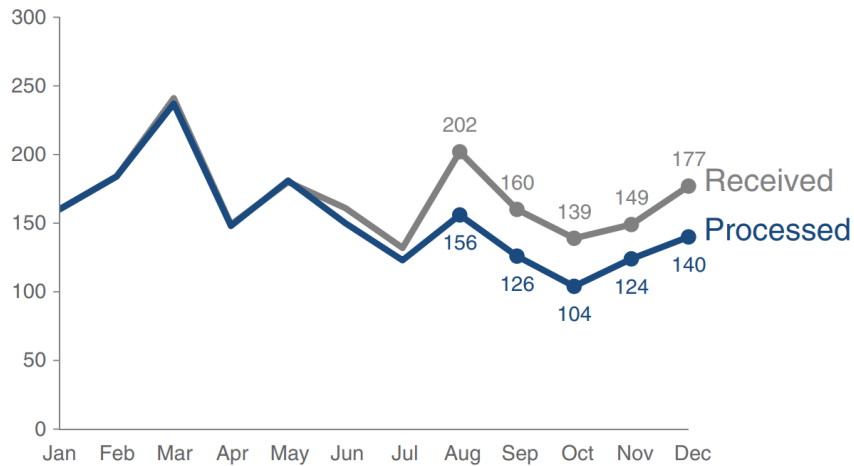
Text is your friend

Peak Break-up Times
According to Facebook status updates



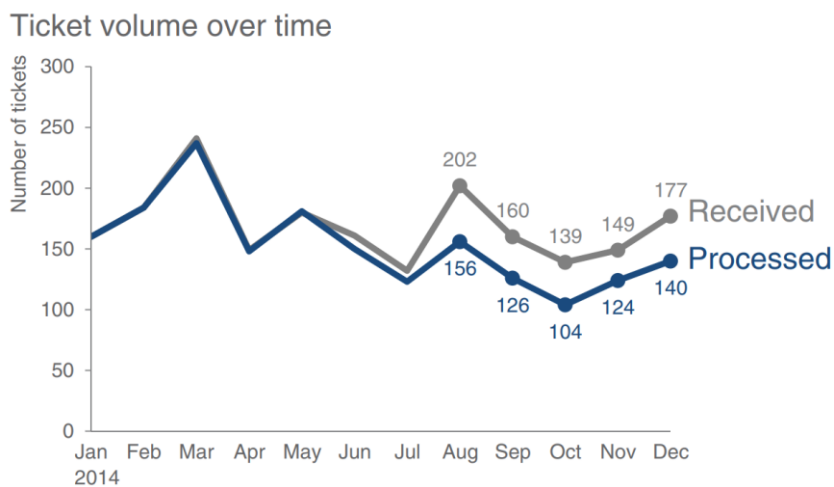
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Accessibility Example



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Accessibility Example



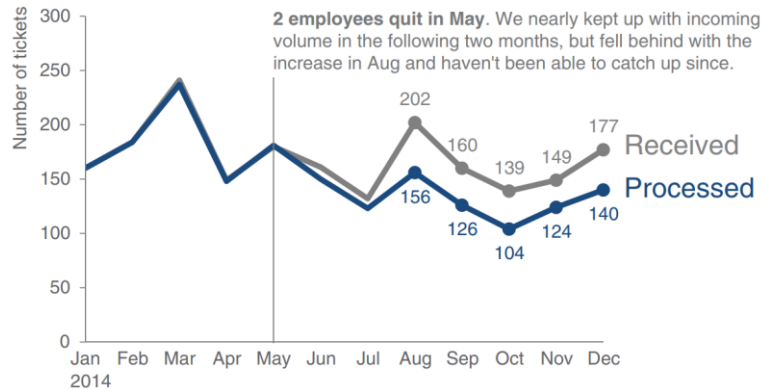
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Accessibility Example

Please approve the hire of 2 FTEs

to backfill those who quit in the past year

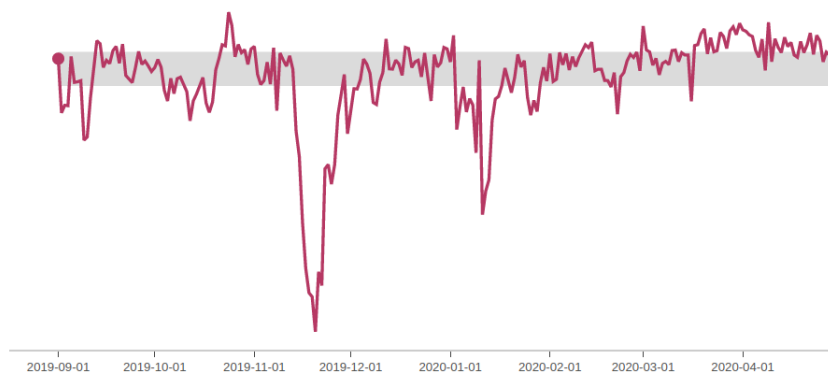
Ticket volume over time



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Accessibility Example

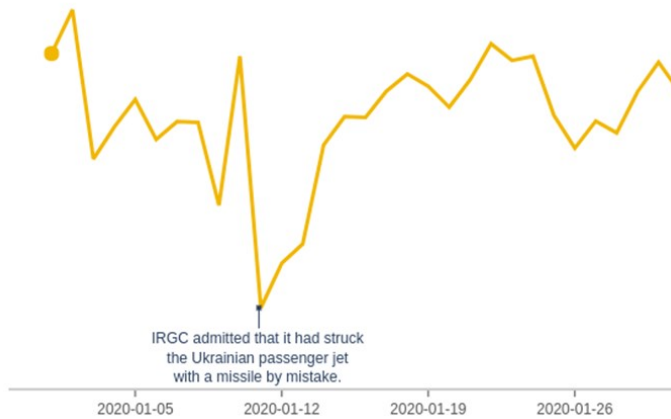
Happiness score



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Accessibility Example

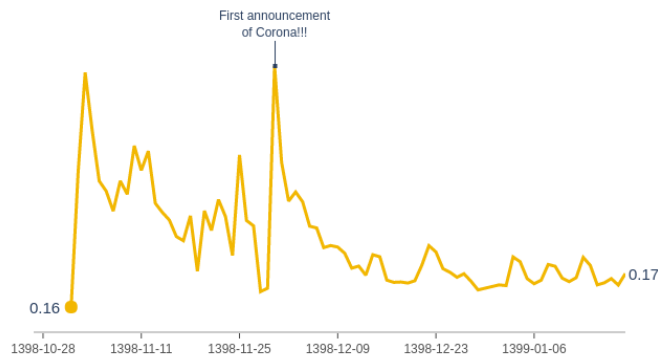
Happiness score - Jan 2020



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Accessibility Example

Happiness score in the time of Corona



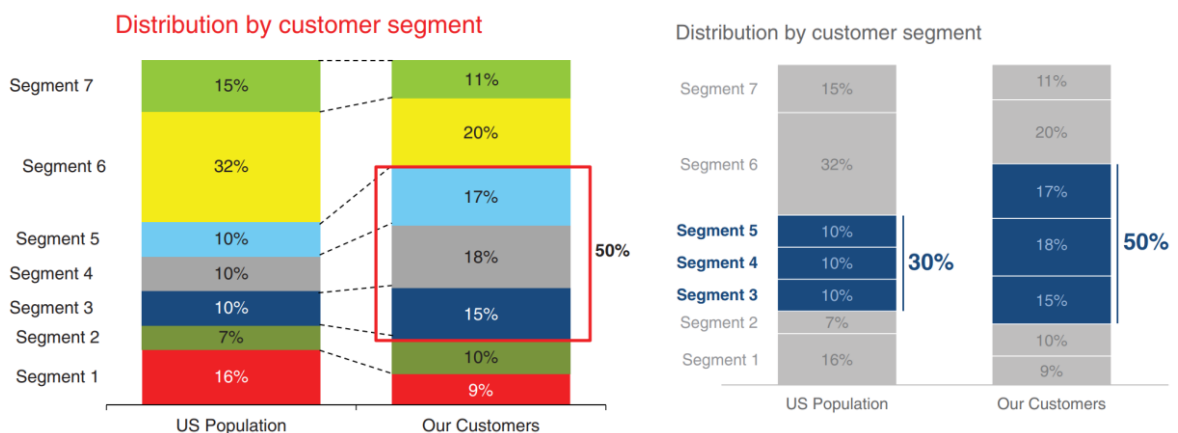
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Aesthetic

- When it comes to communicating with data, is it really necessary to “make it pretty?”
- People perceive more aesthetic designs as easier to use than less aesthetic designs.
- Components of aesthetic design:
 - Be smart with color.
 - Pay attention to alignment.
 - Leverage white space.

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Aesthetic Example



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Acceptance

- For a design to be effective, it must be accepted by its intended audience.
- It is a fact of human nature that most people experience some level of discomfort with change.
- what should you do when your audience isn't accepting of your design?

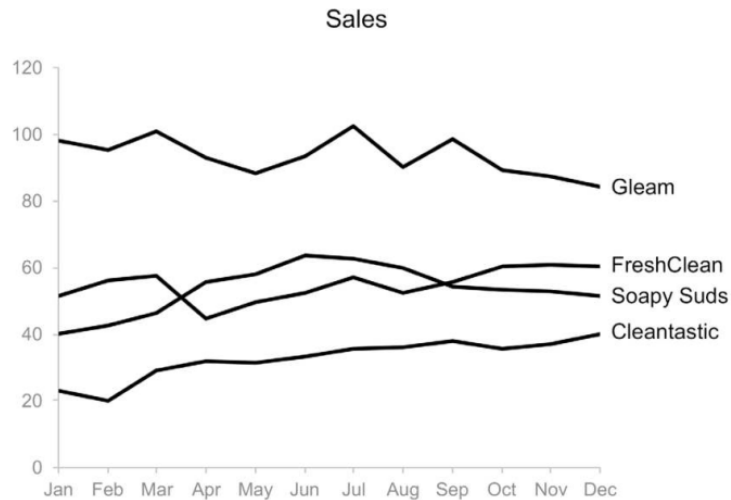
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Strategies for Gaining Acceptance

- Articulate the benefits of the new or different approach.
- Show the side-by-side.
- Provide multiple options and seek input.
- Get a vocal member of your audience on board.

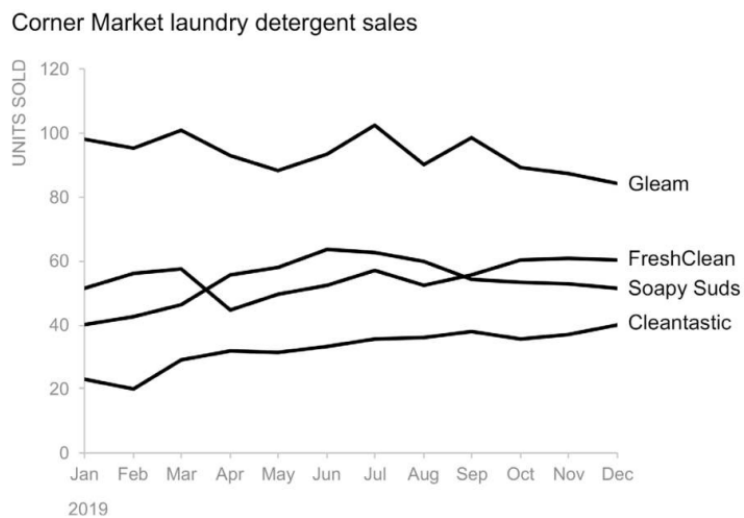
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Example



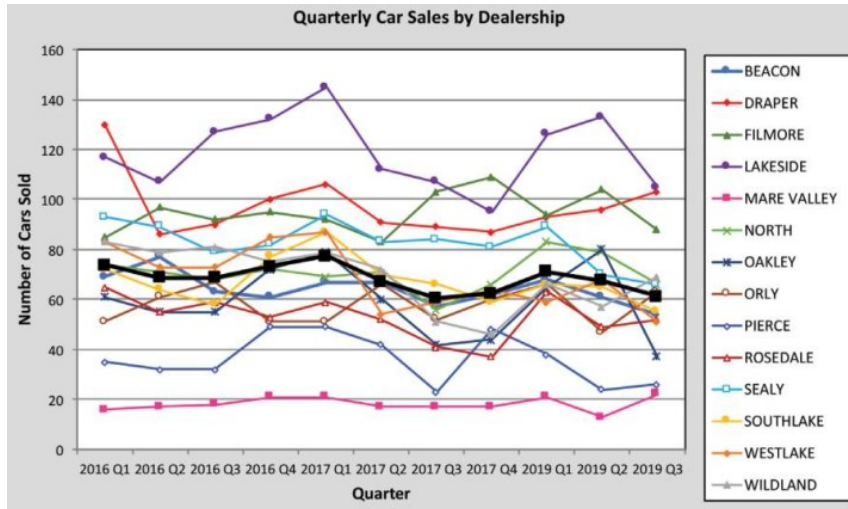
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What is graphed on the axes?



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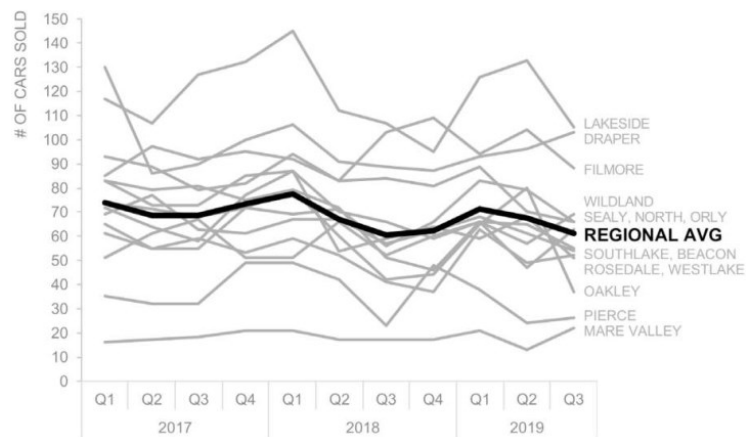
Example



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Example

Car sales over time



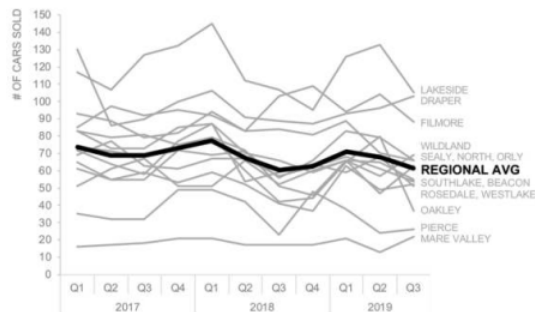
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Example

OVERALL DECLINE IN REGIONAL AVERAGE

The total number of cars sold across all dealerships (not shown) has decreased over time from more than 1,000 in Q1 2017 to 857 in Q3 2019 (a 17% reduction). The average number of cars sold by dealership has also decreased over time.

Car sales over time



MARKED VARIANCE BY DEALERSHIP

In the latest quarter, **Lakeside, Draper, and Filmore had the most cars sold** (105, 103 and 88, respectively), while **Oakley, Pierce, and Mare Valley had the fewest** (less than 40 cars sold each).

Car sales by dealership: Q3 2019

