PLOTS FOR THE COLORBLIND

How to design data visualizations while keeping in mind visually impaired people without much effort

CHOOSING COLORS

Unfortunately, there is no simple solution of what colors to pick. But understanding how colorblindness works, helps keeping visually impaired people in mind, while designing your plots. First of all remember, that there are many kinds of visual impairment. What's distinguishable to some, might not be to others. However there are some rules to help you:

AVOID THESE COLOR COMBINATIONS

Don't use green and red in the same visualisation when the color itself carries meaning
The same goes for blue & purple.

USE THE AVAILABLE TOOLS

Many websites let you see as if you were colorblind. And some even suggest colorblind friendly palettes. Try them out! For example:
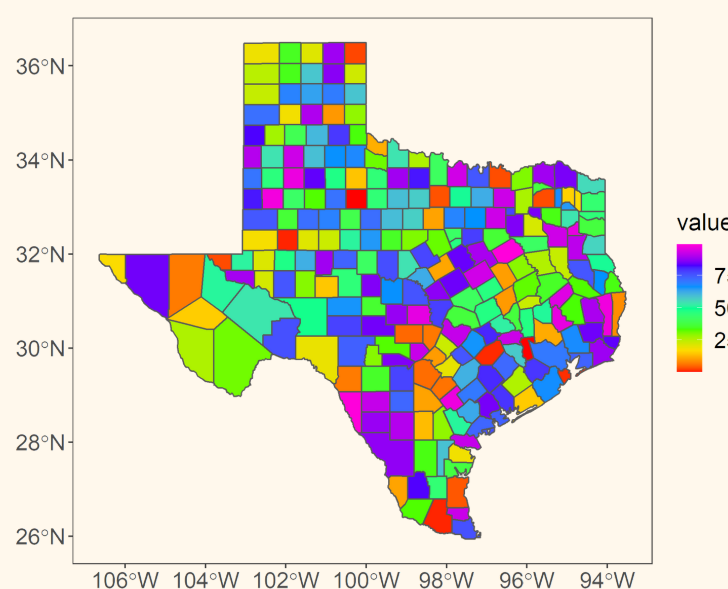
colorbrewer2.org
colororacle.org
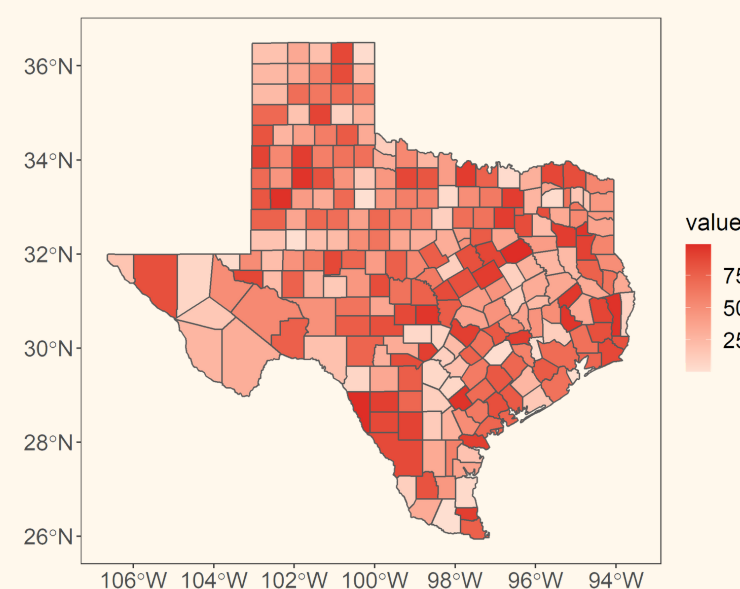projects.susielu.com/viz-palette

LEVERAGE THE INTENSITY

Usually it is good to use varying intensities of the same color instead of similar ones of different shades. Then, even if converted to greyscale or seen by a colorblind person the data presented isn't lost.
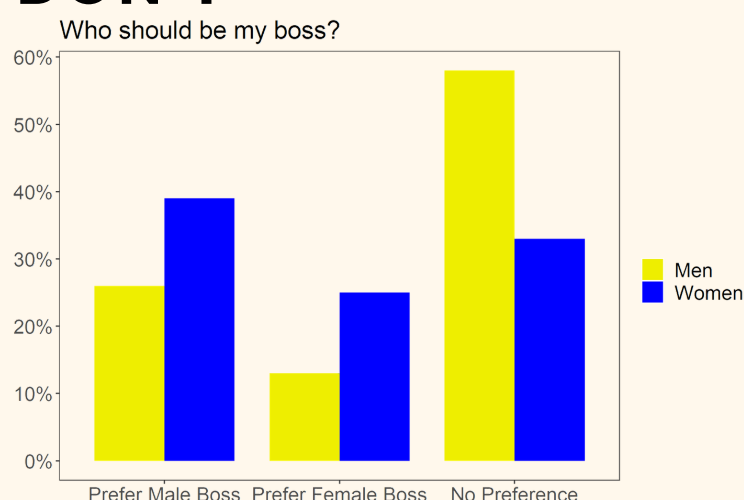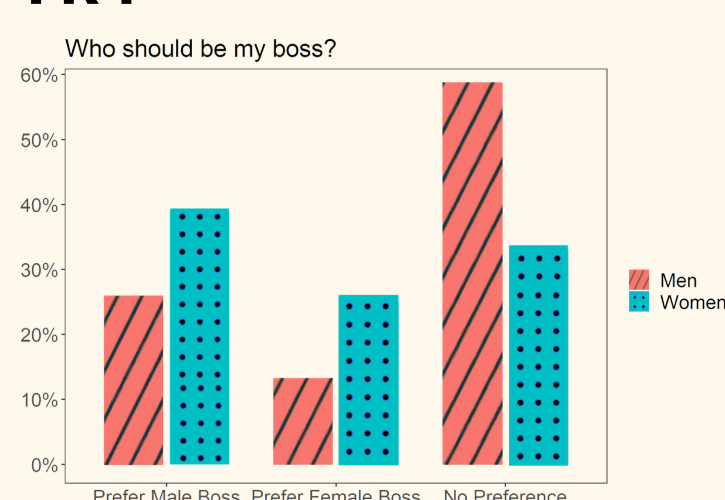
EXAMPLES

DON'T

TRY
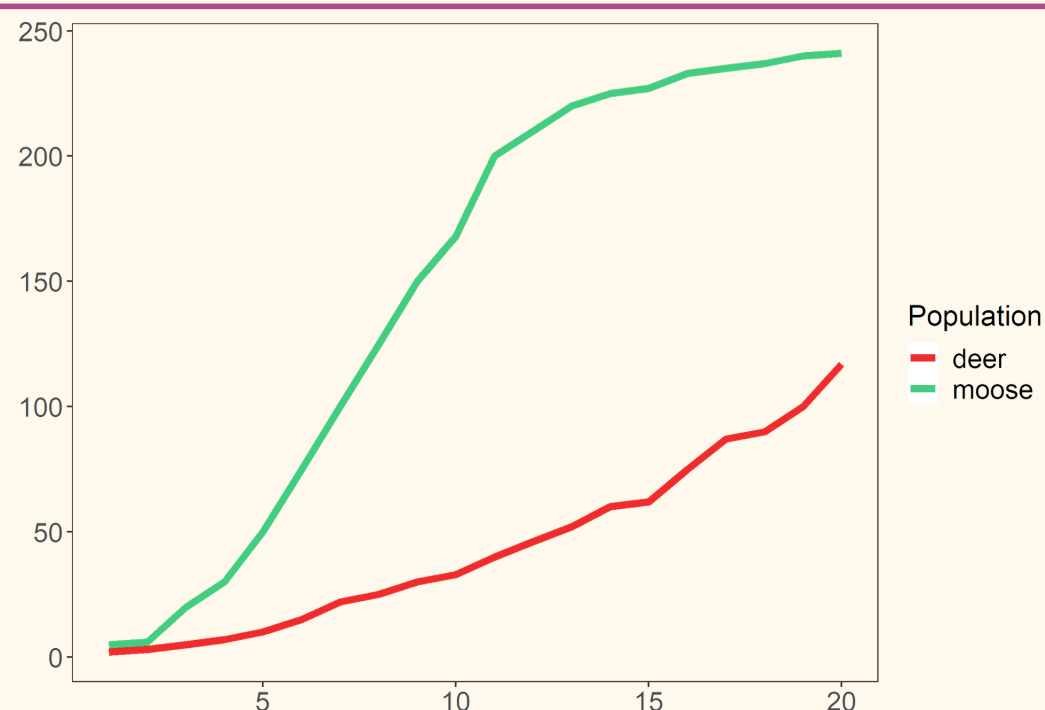

EXAMPLES

DON'T

TRY

EXAMPLES

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Who should be my boss?

USING SIMPLE TRICKS

Choosing the right colors is just half the battle. You can improve your visualization with additional steps:

USE WHITESPACE LIBERALLY

As you can see in the examples below putting a thin white separator between areas/bars visually separates the data points, and is generally more appealing.

LABEL DATA DIRECTLY

For a colorblind person a legend off to the side is useless if they can't make out the colors. If possible try to label lines/bars/areas directly on the plot.

PUT PATTERNS WHEREVER POSSIBLE

Putting a pattern over a solid color fill looks aesthetic and clean, while also helping differentiate data points. The same can be done with line-styles on line plots.

EXAMPLES

DON'T

TRY

AUTHORS

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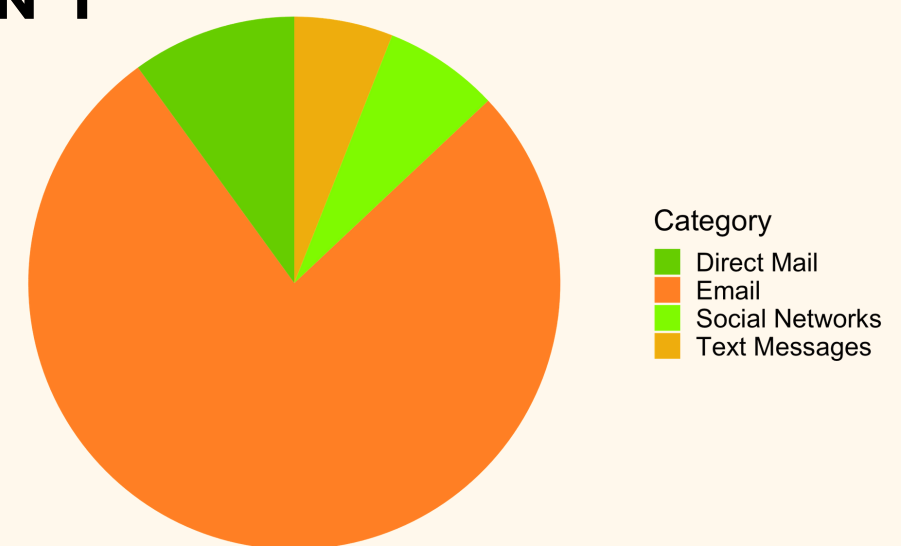SZYMON SZMAJDZIŃSKI

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SOURCES
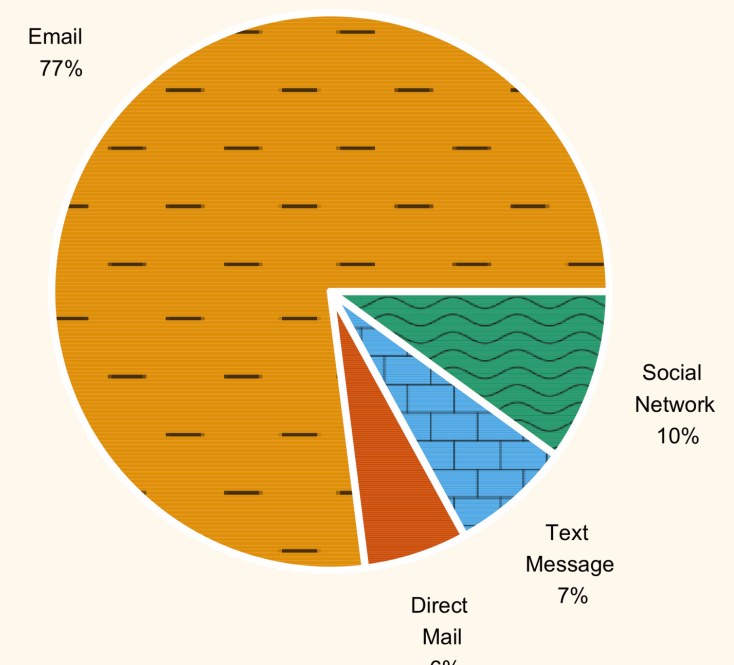
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colororacle.org
projects.susielu.com/viz-palette
keen.io/blog/accessibility-in-data-vis/
www.storytellingwithdata.com/blog/2018/6/26/accessible-data-viz-is-better-data-viz