



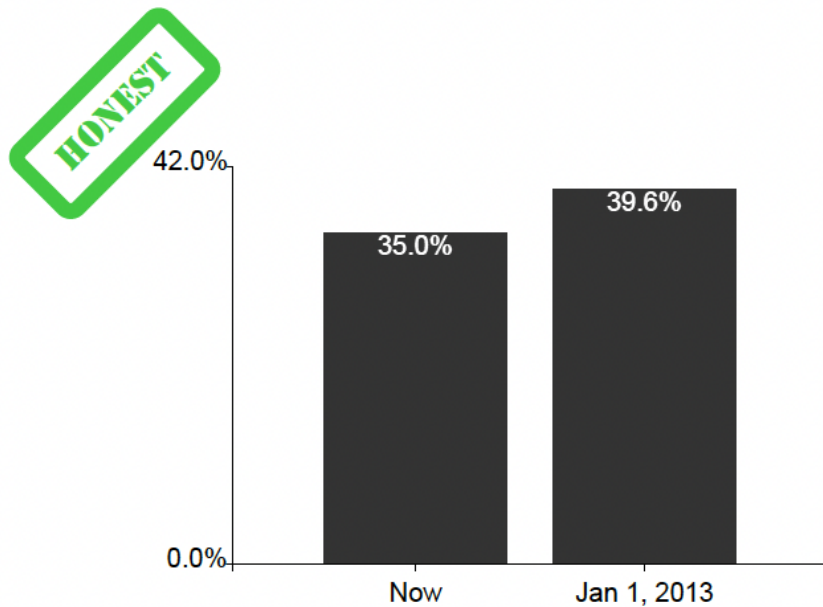
# TRUNCATING THE Y AXIS

PERE-PAU VÁZQUEZ – VIRVIG GROUP – UPC

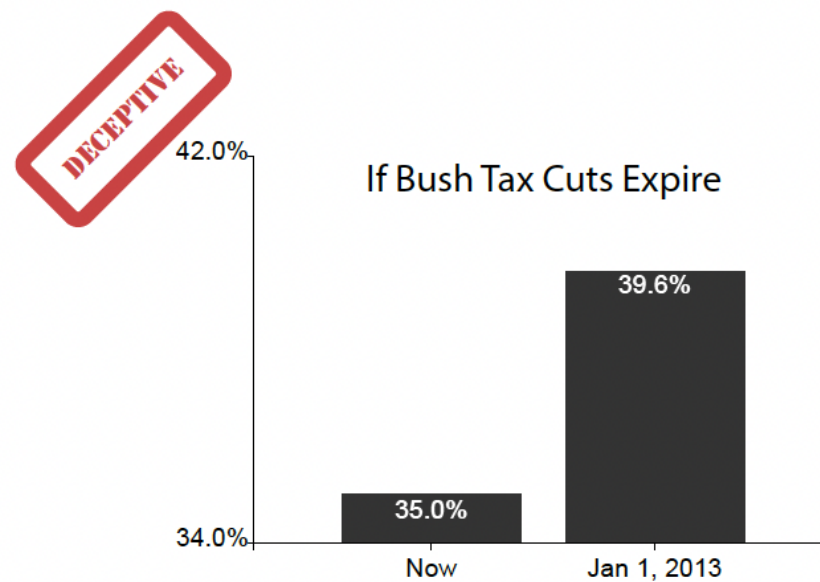
# WHAT ARE THE GOALS OF THE PAPER?

- What is the reasoning behind the experiment?
- Why is it needed?

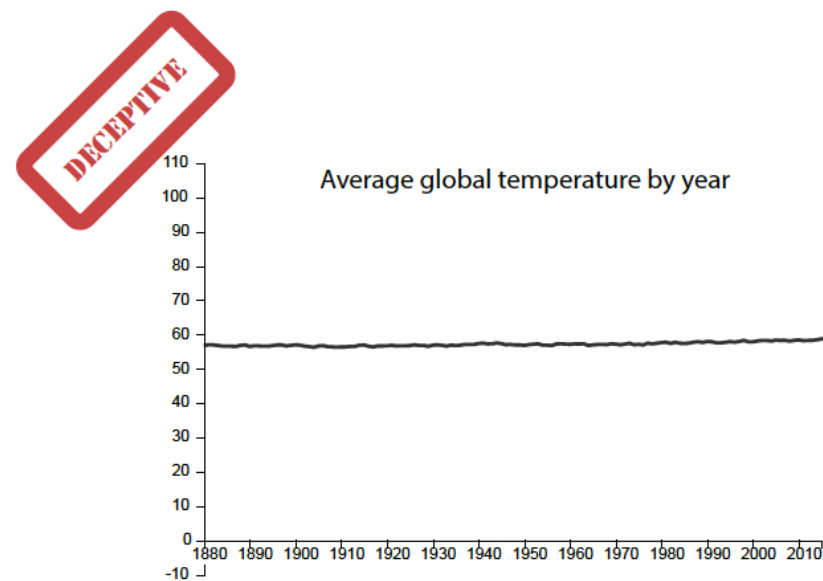
# WHAT



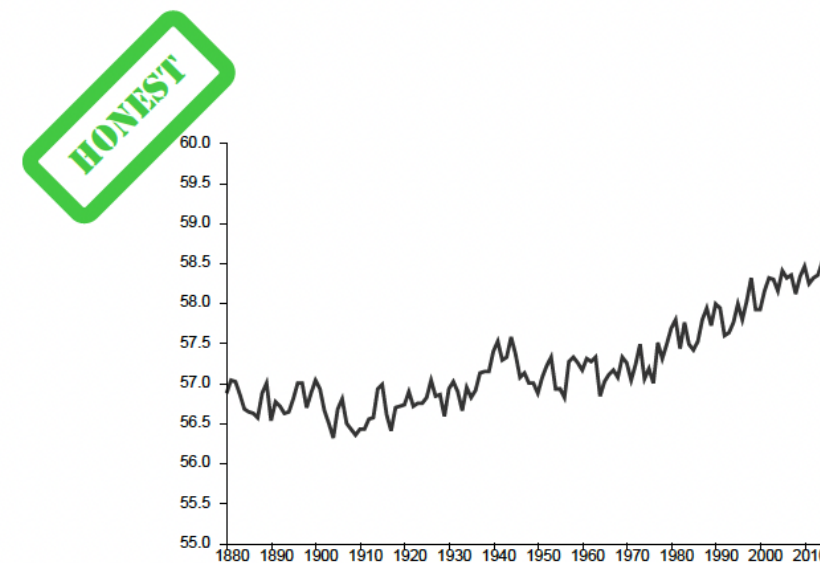
(a)



(b)

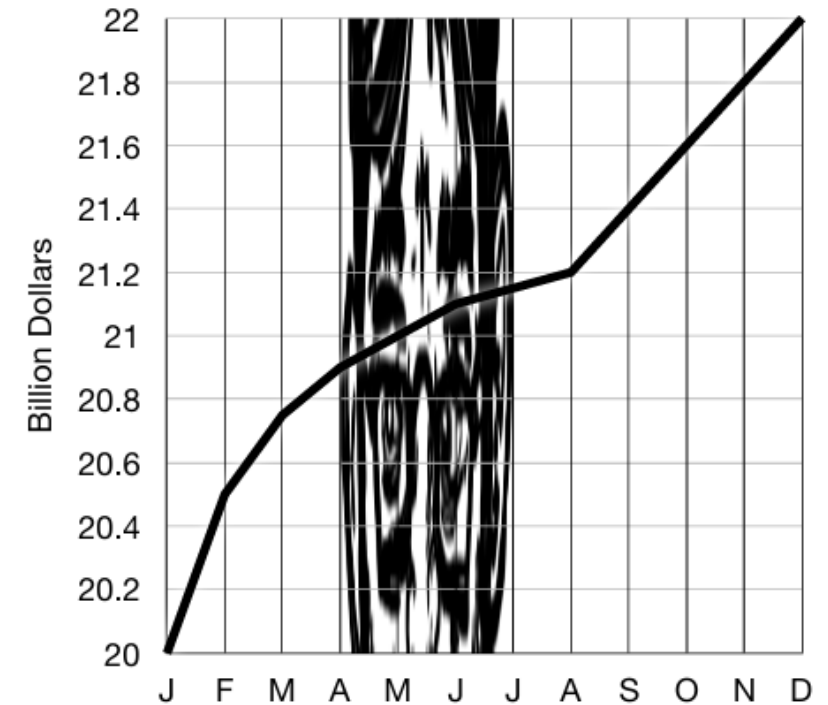
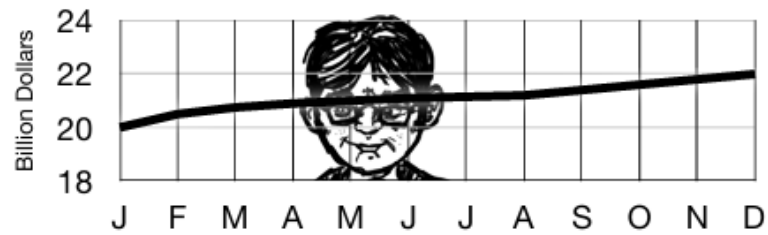
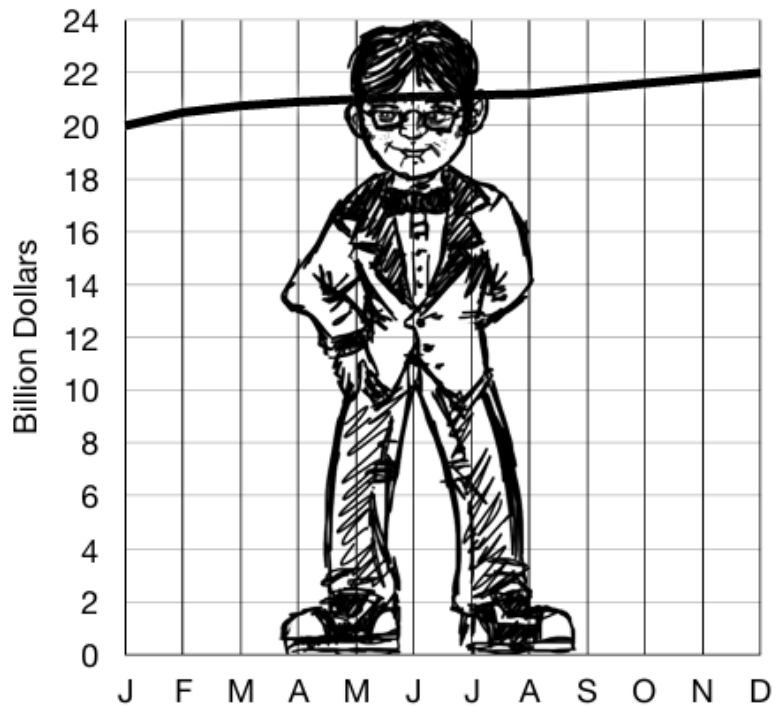


(c)



(d)

# WHAT ARE THE GOALS OF THE PAPER?



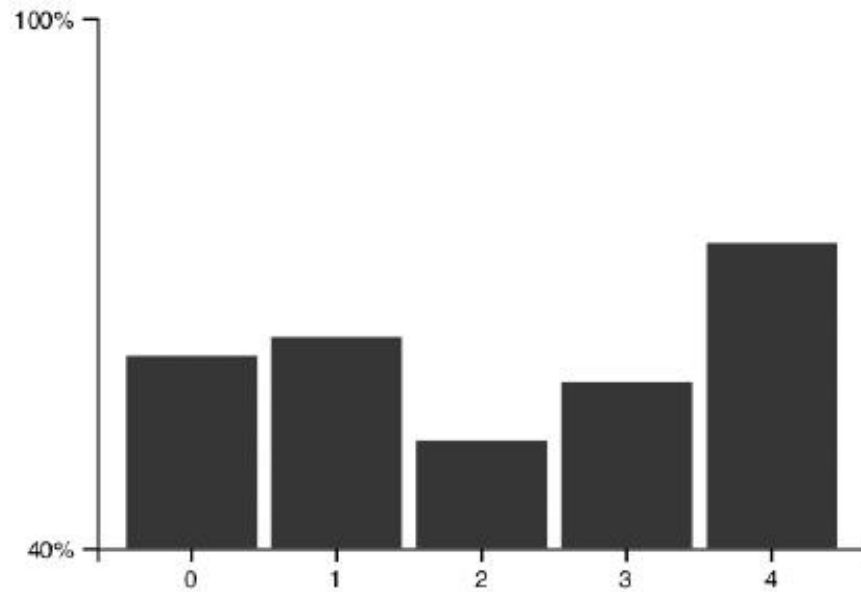
# RESEARCH QUESTIONS

- Is the impact of y-axis truncation different between bar charts and line charts?
- Can visual designs alleviate the exaggeration caused by truncation?

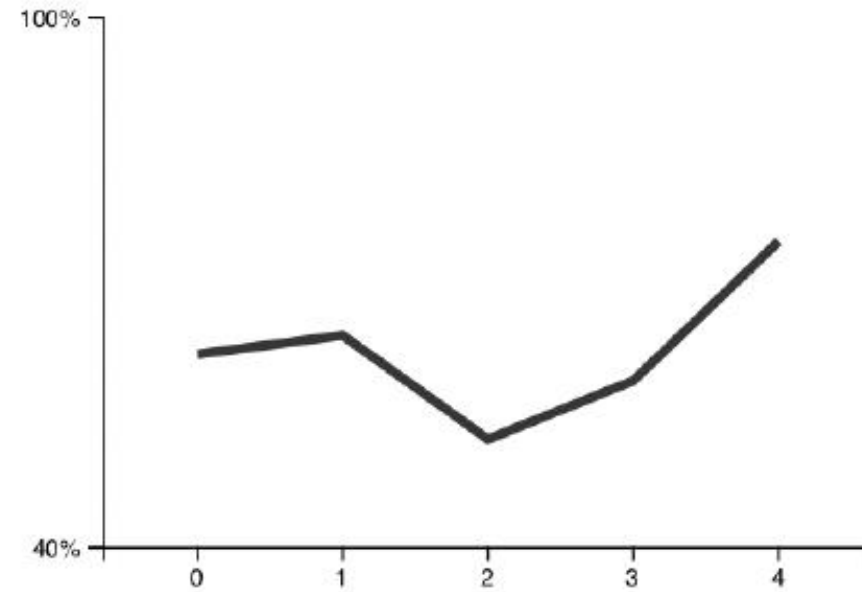
# IMPLEMENTATION

- What experiments were considered?

# IMPLEMENTATION

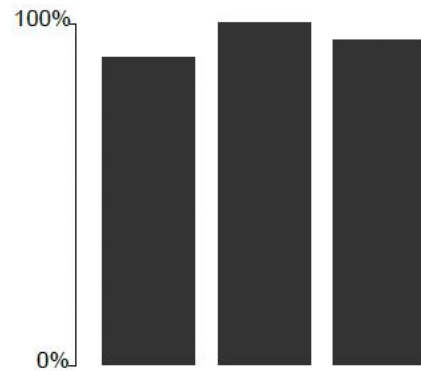


(a) Bar Chart

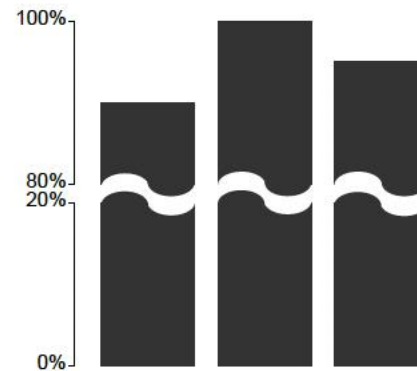


(b) Line Chart

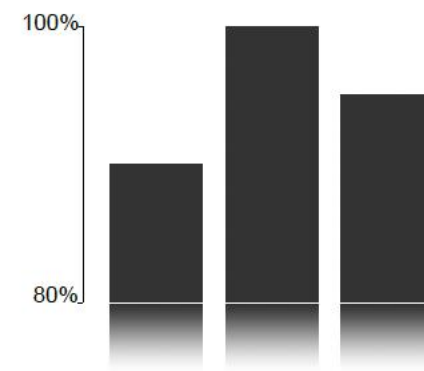
# IMPLEMENTATION



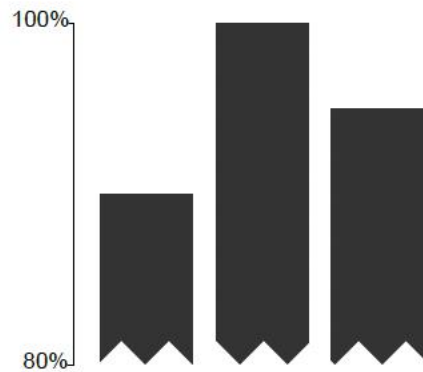
(a) Bar Chart



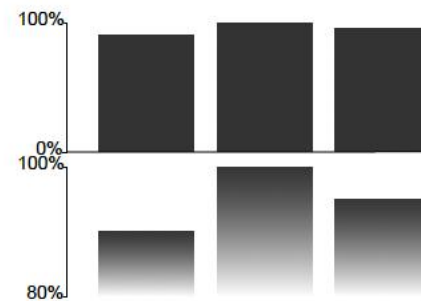
(b) Broken Axes



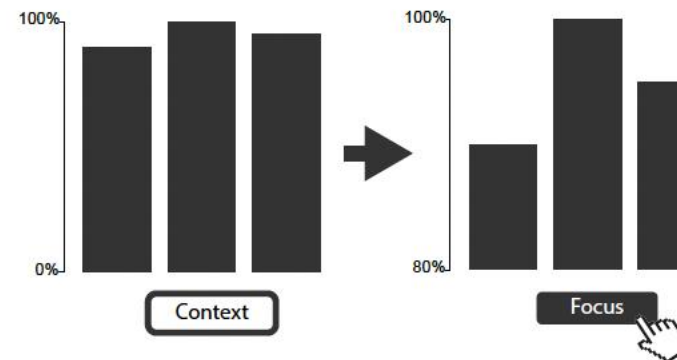
(c) Gradient Bar Chart



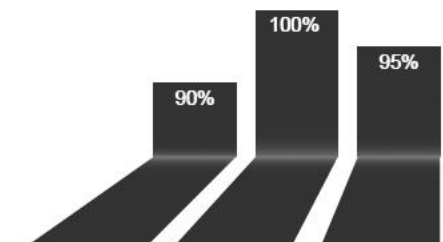
(d) Torn Paper Chart



(e) Panel Chart



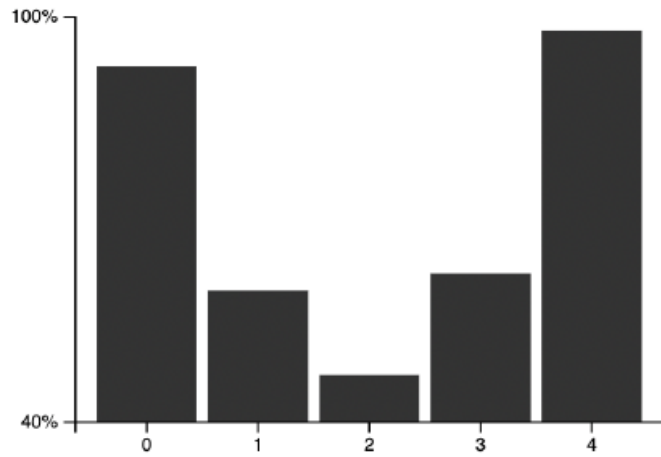
(f) Interactive Focus+Context



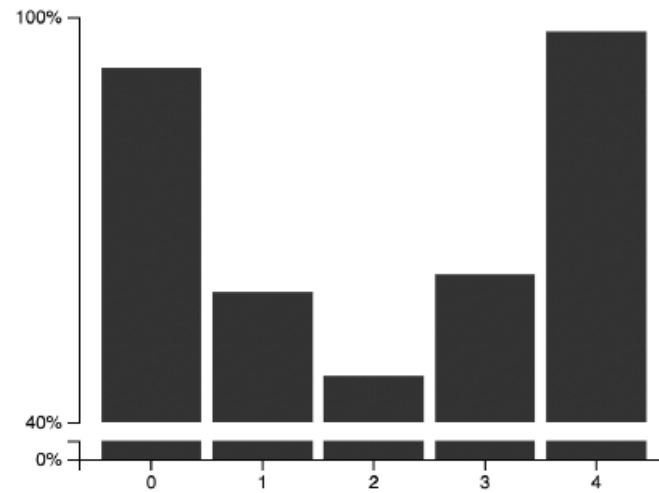
(g) Bent Bar Chart



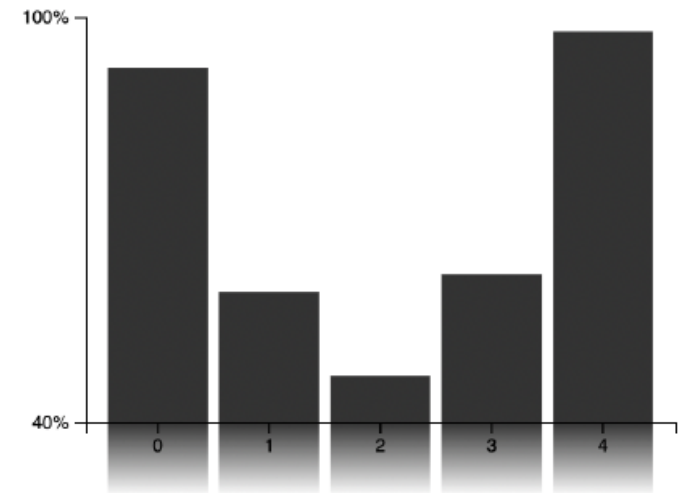
# STIMULI



(a) Bar Chart



(b) Bar Chart with Broken Axis



(c) Bar Chart with Gradient

# REFLECT ON THIS

- What is the reasoning behind the stimuli selection?
  - There are reasons why those charts and not others
- What were the main outcomes of the experiments?
- How was the data analysis performed?
- What are the limitations?

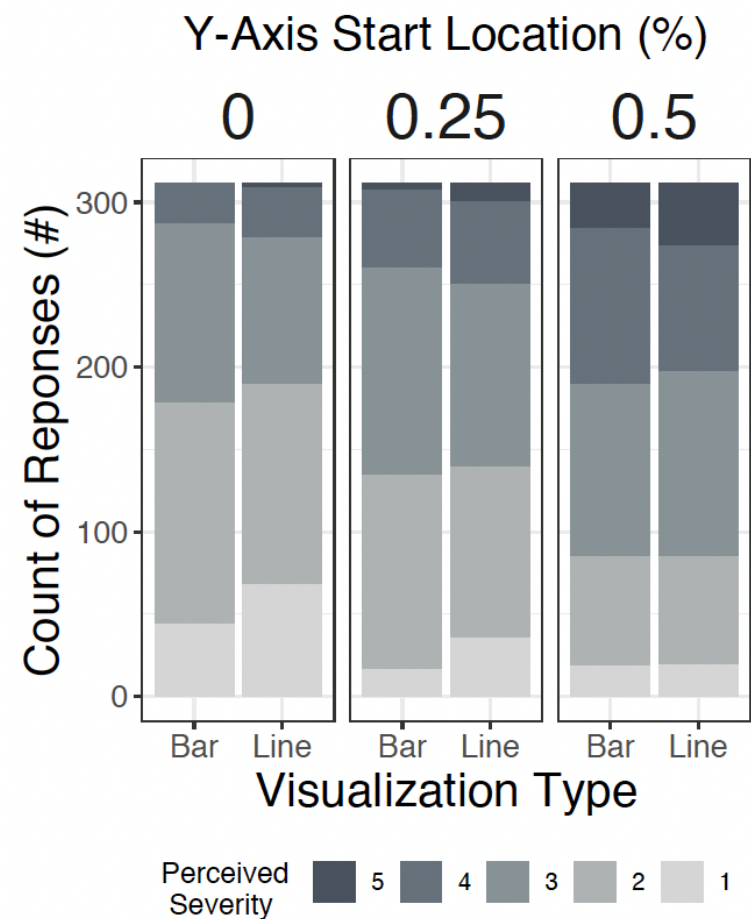
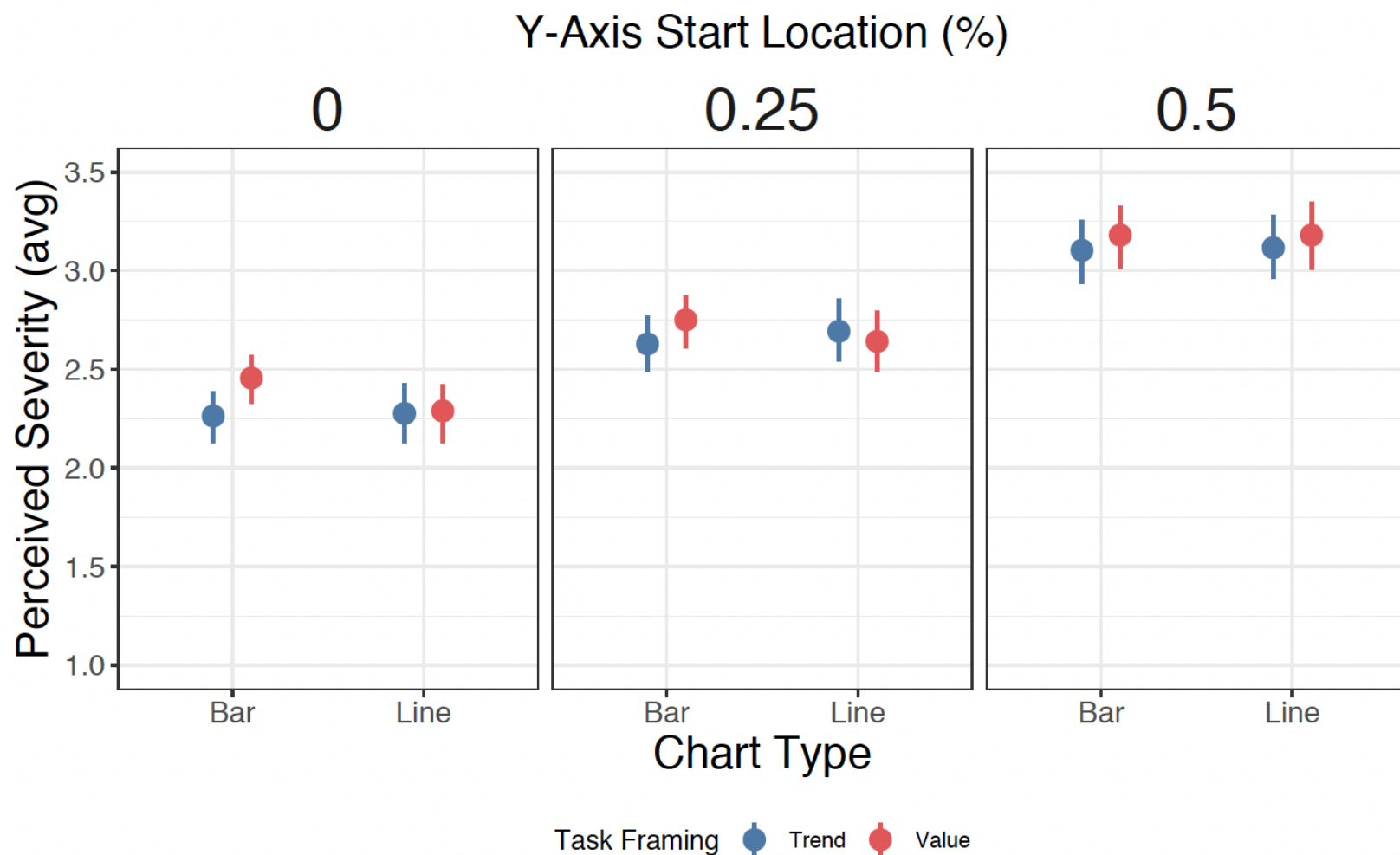


Figure 6: Results from Experiment One. Increasing the starting point of the y-axis results in larger perceived severity in effect size. Neither the visual design (bar or line chart) nor the method of soliciting the perceived severity (focusing on either individual *values* or overall *trend*) produced significant differences in perception of effect size. Error bars represent 95% bootstrapped confidence intervals of the mean. The figure on the right shows the raw counts of rating responses across visualization types.

# RESULTS

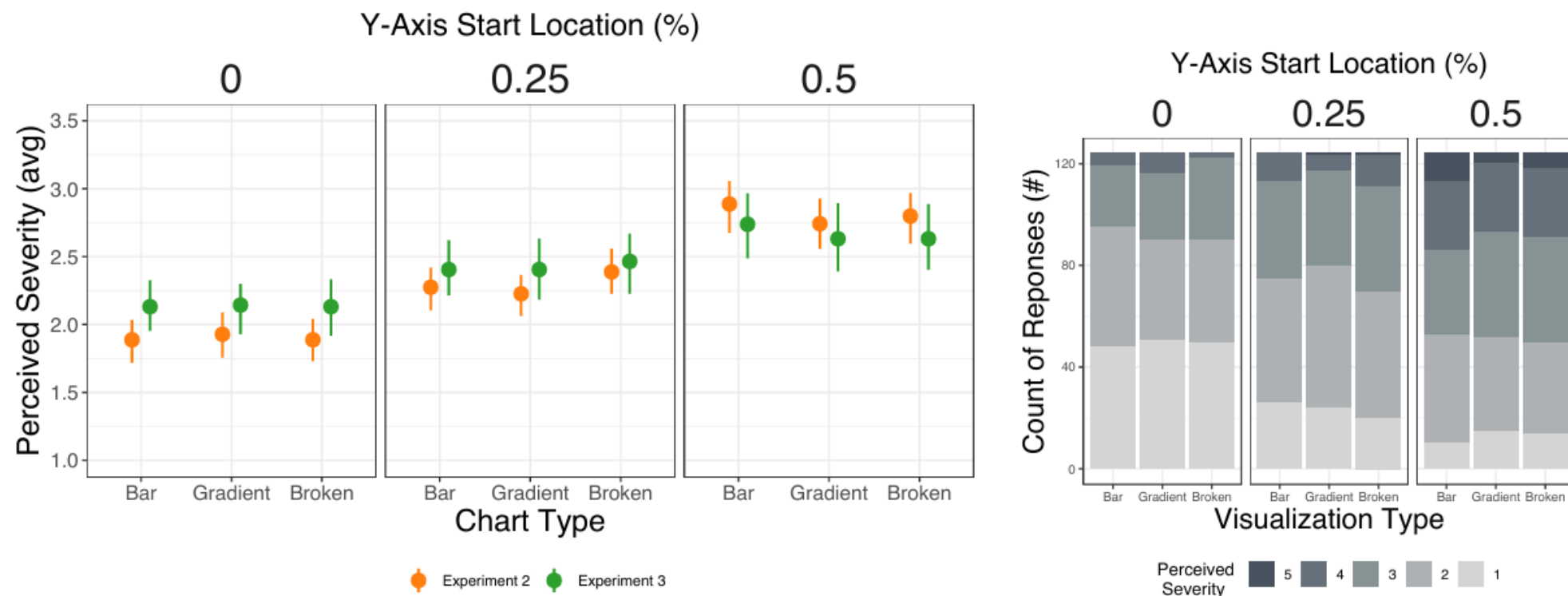


Figure 8: Results from Experiments Two and Three. While broken axes may *indicate* that a y-axis is truncated, and a gradient fill may *connote* that the bars extend beyond the visualized chart area, neither intervention had a consistent impact on perceived severity; increased axis truncation resulted in similar increases in perceived severity. Error bars represent 95% bootstrapped confidence intervals of the mean. Note that when there is no truncation (the y-axis begins at 0%), all three designs were visually identical. Error bars represent 95% bootstrapped confidence intervals of the mean. The figure on the right shows the raw counts of rating responses across visualization types for Experiment Two— results across both Experiments Two and Three were similar.



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