

Title: Different Methods for Visualizing Uncertainty

Submitters:

W. Jake Thompson, Ph.D.

Accessible Teaching, Learning, and Assessment Systems (ATLAS); University of Kansas

Corresponding author:

W. Jake Thompson, Ph.D.

ATLAS, University of Kansas

1122 West Campus Road

Joseph R. Pearson Hall, Room 437

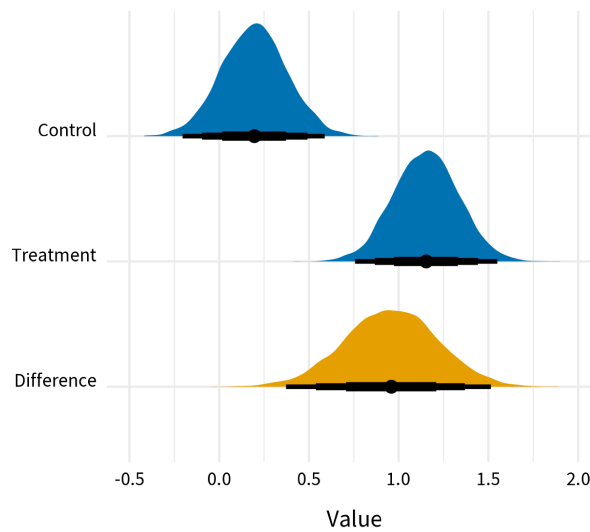
Lawrence, KS 66045

wjakethompson@gmail.com

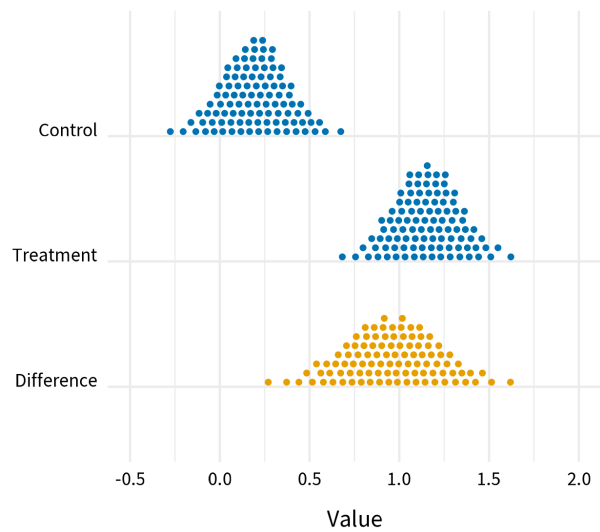
Title: Communicating Uncertainty Through Visualization

Caption: Four different methods for visualizing uncertainty in parameter estimates.

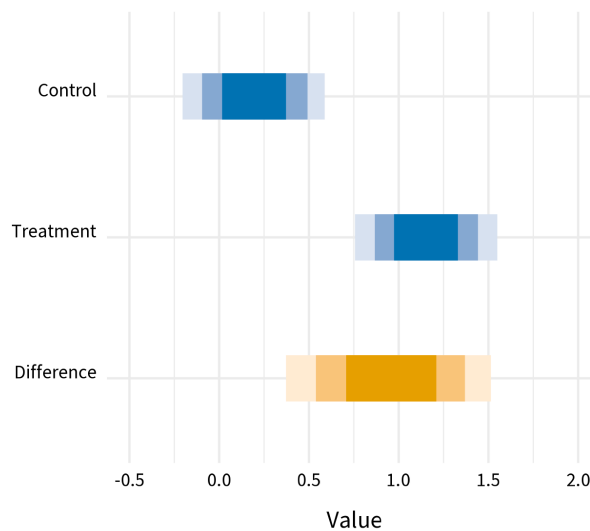
Half-eye



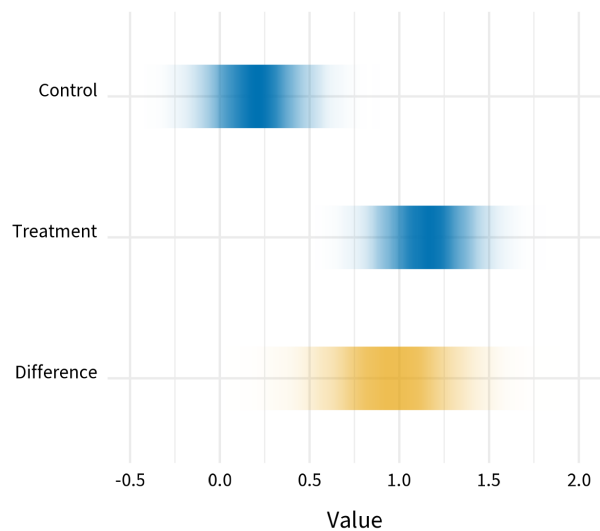
Dots



Interval



Gradient



● Parameter ● Contrast

Description:

Accurately and effectively communicating uncertainty is a critical aspect scientific research (Padilla et al., 2023).

These uncertainty distributions are straightforward to create using the `{ggplot2}` and `{ggdist}` packages in R (Kay, 2022; Wickham et al., 2022).

Half-eye plots... Dot plots... Interval plots... Gradient plots...

References

- Kay, M. (2022). *ggdist: Visualizations of distributions and uncertainty*. R package version 3.2.0.
<https://mjskay.github.io/ggdist>
- Padilla, L., Kay, M., & Hullman, J. (2023). Uncertainty visualization. In N. Balakrishnan, T. Colton, B. Everitt, W. Piegorsch, F. Ruggeri, & J. L. Teugels (Eds.), *Wiley StatsRef: Statistics reference online*. Wiley.
<https://doi.org/10.1002/9781118445112.stat08296>
- Wickham, H., Chang, W., Henry, L., Pedersen, T. L., Takahashi, K., Wilke, C., Woo, K., Yutani, H., & Dunnington, D. (2022). *ggplot2: Create elegant data visualisations using the grammar of graphics*. R package version 3.4.0.
<https://ggplot2.tidyverse.org>