University of Nebraska Lincoln

Department of Statistics

December 12, 2021

Dear student paper award committee,

I am pleased to write this letter on behalf of Emily Robinson. I am an Assistant Professor at University of Nebraska Lincoln, and have had the pleasure of serving as Emily's co-adviser and research collaborator since early 2020, when I started my position at UNL. Emily is an extremely promising researcher in our field, and is adept at examining statistical graphics using multiple methods of empirical testing.

Emily's research has been primarily focused on the use of log scales in statistical graphics. This project started with the COVID-19 pandemic, when Emily and I began to discuss the effectiveness of different graphics in the news which showed the spread of the pandemic. Working together with Reka Howard, Emily's other co-adviser, we devised a plan to examine log scales and exponential data from 3 different perspectives: perception, prediction, and estimation. Emily's dissertation approaches the problem holistically: she examines whether we perceive differences in graphs on a log scale differently than on a linear scale, whether we can make predictions accurately, and whether we can accurately read data off of the charts and make appropriate decisions based on the data. Her work represents a substantial contribution to the literature on the effective design of statistical graphics, and will provide a foundation for better communication of data which includes growth on an exponential scale.

Emily's dissertation chapters are tightly intertwined; in early 2022, we will run a single multi-part experiment using the same participants, where each portion of the experiment corresponds to a chapter of Emily's dissertation. This will allow her to draw conclusions about participants' abilities across different tasks relating to the different ways we use and interact with statistical graphics. In preparation for this large experiment, Emily has run pilot studies for each chapter of her dissertation. The work presented in this paper is part of the second chapter of her dissertation, and while the data presented here will be supplanted with a better (non-convenience) sample early next year, her research results are exciting enough to merit presentation before the full results are in. While I have served as her adviser on this project, I can attest that the work presented in this paper is all Emily's.

Sincerely,

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