

Fertility or Mortality: Do Cost-Benefit Ratings of Everyday Products Vary with Context?

Madison Hale and Dr. Mary Towner

Department of Integrative Biology, Oklahoma State University

Abstract

This study aimed to evaluate whether women respond differently in rating everyday products when the context is framed in terms of benefits and costs to fertility versus lifespan. We also examined if the observed relationship was applicable across different types of products, some of which are currently subject to false information. A sample of 130 college students completed a survey through the OSU psychology SONA system. We found that the women consistently ranked items as more likely to be beneficial to lifespan than to fertility. This was true when items were ranked positively or negatively. We also confirmed high variance in ratings of vaccinations. Although there is still more to be examined this is a step towards understanding the cost-benefit mindset that affects women's decisions.

Objectives

- Evaluate whether women rank everyday items differently when a prompt is framed in terms of impact on fertility versus impact on lifespan
- Examine whether the observed relationship is consistent across different types of products

Introduction

- Humans use culture and memory to store and share information about food and environmental safety with other people ¹
- Evaluating the accuracy of information is increasingly difficult in our modern information environment and prone to manipulation
- The misinformation surrounding the vaccine for Covid-19 reflects this challenge
- From an evolutionary perspective, individuals may make choices that are beneficial to their fertility even if their lifespan may be negatively affected ²
- We predict that college aged women will be more cautious of evaluating items in a fertility context than a lifespan context

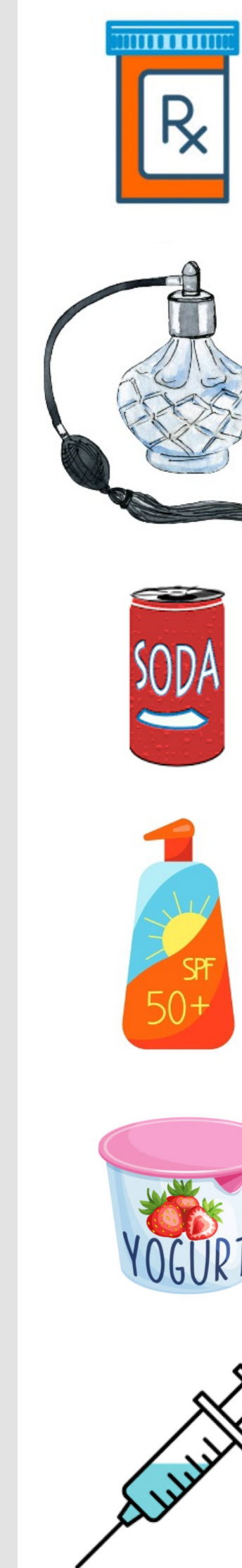
Methods

- Participants were instructed to answer questions as though they were advising a healthy 20-year-old woman that wanted to have children in the future and live a long life

Please rate the following foods on their potential to impact on the woman's ability live a long life:

	Very Harmful	Somewhat Harmful	Mildly Harmful	Mildly Beneficial	Somewhat Beneficial	Very Beneficial
Potato Chips	○	○	○	○	○	○
Deli Meat	○	○	○	○	○	○
Local Honey	○	○	○	○	○	○

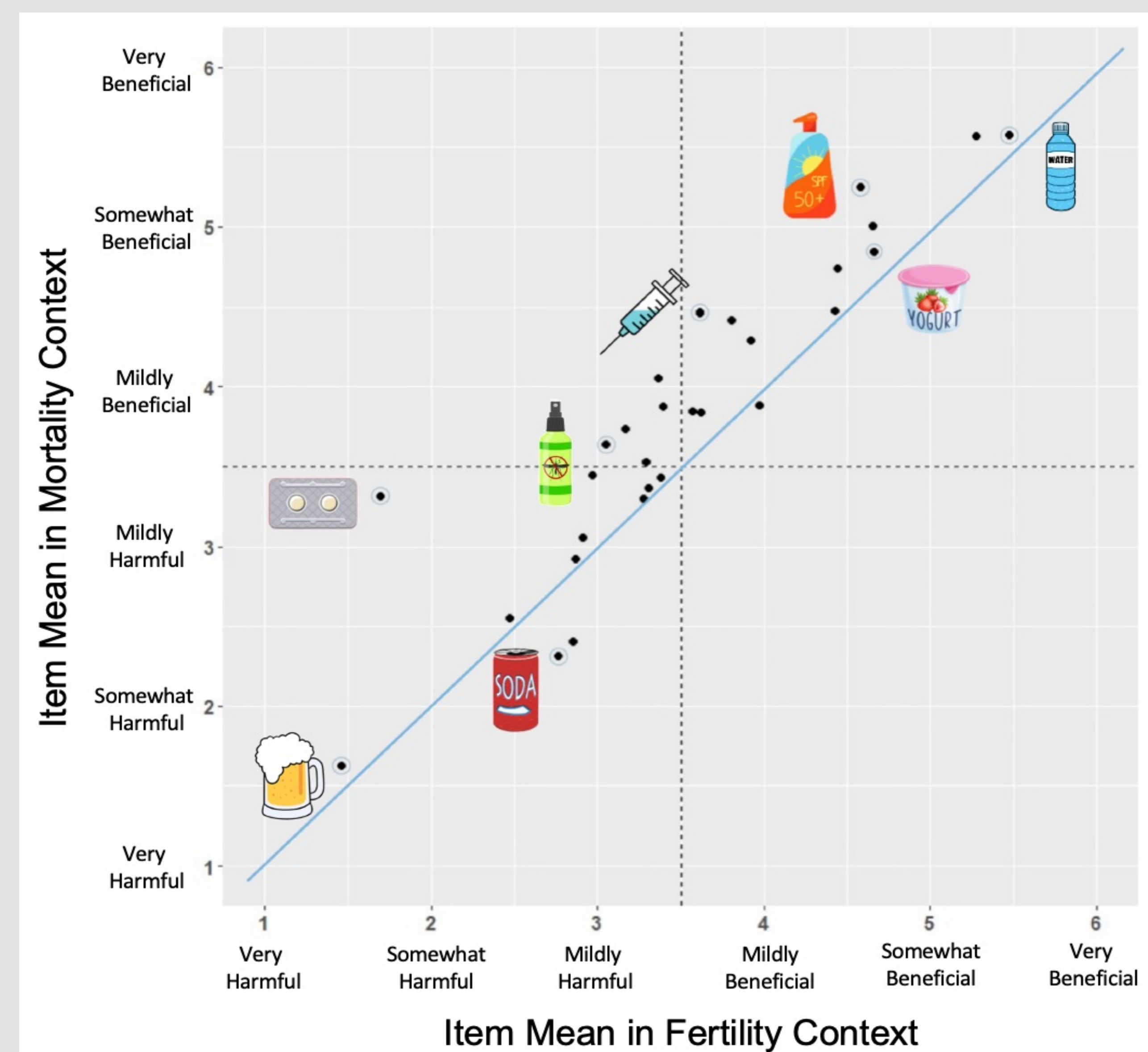
- Collected and analyzed 130 participant responses in Spring of 2022 through the Psychology Department SONA system
- After data cleaning, statistical analyses were complete in Excel and R
- Likert values were summed and analyzed numerically using a Wilcoxon Rank Sum Test.



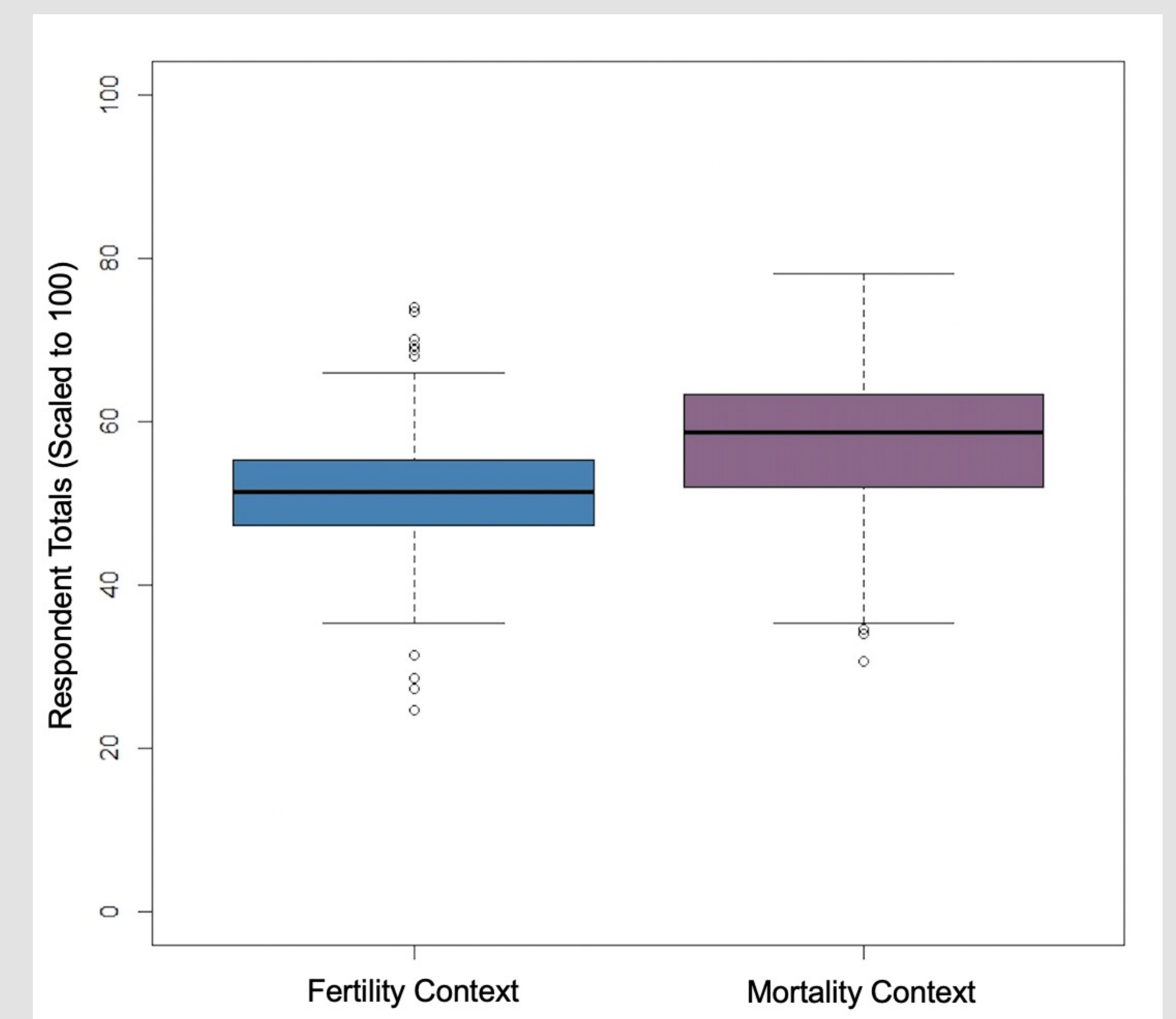
Conclusion

- Women consistently ranked items lower in the fertility context than the mortality context for both generally positive and negative items
- This is consistent with life history theory, but more research is needed across women of different ages and reproductive states ¹
- Medical products, including vaccinations, had the highest variance in ratings which is consistent with the spread of both accurate and misleading information surrounding these topics today.

Results



- Diagonal line represents equal rating on an item
- In fertility context 27/30 items were ranked as more likely to be harmful than the item in the lifespan context



- Individual Likert sums in the fertility context trend toward the midline but in the mortality context sums are more positive
- Wilcoxon Rank Sum Test for difference, $P < 0.001$

References

- ¹ Kaplan, H., Hill, K., Lancaster, J. and Hurtado, A.M. (2000), A theory of human life history evolution: Diet, intelligence, and longevity. *Evol. Anthropol.*, 9: 156-185. [https://doi.org/10.1002/1520-6505\(2000\)9:4<156::AID-EVAN5>3.0.CO;2-7](https://doi.org/10.1002/1520-6505(2000)9:4<156::AID-EVAN5>3.0.CO;2-7)
- ² Mesoudi, A. (2017). Pursuing Darwin's curious parallel: Prospects for a science of cultural evolution. *Proceedings of the National Academy of Sciences*, 114(30), 7853–7860. <https://doi.org/10.1073/pnas.1620741114>

Acknowledgements

Thank you, Dr. Byrd-Craven, for providing guidance and direction, Tori Short for assisting with SONA publishing requirements, and the OSU Honors College. Study approval, OSU IRB IRB-22-56.