

Guidelines for writing up an experiment

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This document describes how to write up an experiment using the standard 5-section format. If you're using this document to write up an experiment for an assignment in my class, please do not deviate from the 5-section format. I know that the format can feel like it stifles creativity – it does, and that's the point. You can also refer to Chapter 13 of Gerber and Green (2012) for lots of great detail on writing research reports beyond the format.

- Title Page (includes name, date, title, abstract, IRB number, and PAP location if applicable)
- Main Body
 1. Introduction: Motivate the question the experiment will answer, perhaps discuss briefly how previous research has attempted to answer it. Explain the importance of your design for answering the question.
 2. Theory: Explain why the treatment should affect outcomes, drawing on previous work. Theory sections aren't "literature reviews." They make an argument, building on what has been learned from past research. Don't take previous research findings at face value – consider the evidentiary value of previous work on the basis of design. Foreshadow how the design will inform the theory.
 3. Design: Explain the design and how it connects to the theory. Who/what are the units and how were they selected? What are the treatments, specifically? (good place to discuss ethics here) What is the experimental context? How was random assignment carried out? What are the outcome measures (and are they any good)? What is the estimand? What estimation procedure will you use? How will you assess statistical significance, if at all? What are the properties of the design? Is the estimation procedure unbiased? Is the study large enough to reach reliable conclusions?
 4. Results: Proceed through the estimations that you described in the design section. Guide the reader to the important contrasts reported in the tables and figures. Interpret the results and provide an indication of whether the results provide evidence for or against a particular theory.
 5. Discussion: Zoom back out. Remind the reader of the question and why it was important. Explain how your design answered the question and what your interpretation of the results means for the question. Be honest about the weaknesses of the results. Describe how your experiment complements or challenges previous work. Speculate (briefly) about generalizability to other subjects, contexts, treatments, and outcome measures.
- References (follow a style guide)
- Appendix, which may include: The code to reproduce all figures, tables, and in-text numbers; The full text of the treatments and/or survey; The preanalysis plan; Description of deviations from the pre-analysis plan; Randomization checks (balance tables, compliance details, attrition rates); Alternative analysis strategies.