Reading & Reading Exercises Meeting 3&4

Before the lecture:

Holland, P. W. (1986). Statistical and causal inference. *Journal of the American Statistical Association, 81*, 945-960. https://doi.org/10.2307/2289064

- Skip Sections 5 and 6.

Before the lab:

Schafer, J. L., and Kang, J. (2008). Average causal effects from nonrandomized studies: A prectical guide and simulated example. *Psychological methods, 13*, 279-313. DOI: 10.1037/a0014268

Bonus: Podcast episode from Serious Epi: https://seriousepi.blubrry.net/2021/10/28/s2e3-more-on-causal-inference-and-scientific-reasoning/

Reading Questions

1. What is a potential outcome?
2. What is the fundamental problem of causal inference?
3. In what way can causal inference be considered related to missing data problems?
4. How does the notation used in the S&K paper relate to the notation used in the slides?
5. What is the difference between the average causal effect and the average causal effect for the treated?
6. What would be an example from your field, where an average effect of the treated (ACE1) is of interest?
7. Unconfoundedness can be expressed as: $Y_{0i}, Y_{1i} \perp X_i$, and conditional unconfoundedness can be expressed as: $Y_{0i}, Y_{1i} \perp X_i | Z_i$. What does this mean, and how is it different from saying that Y_i is independent of X_i?
8. What should be considered the preferred method(s) for estimating the ACE according to the results obtained by Schafer and Kang?