

Producing Data
Chapter 12, parts I, II, and III
To be prepared outside of class before Class Day 7

Read Chapter 12, parts I, II, and III as directed below and come to class ready to discuss the following questions in a total of about 20 minutes.

After reading the first page, answer these questions:

1. What is an example of a way to collect data that is not meaningful? Can you think of a different example from the one they give?
2. How does the author of the book say we can try to avoid collecting data that is not meaningful?
3. Suppose you are measuring the length of a building by “stepping it off.” You have a cloth tape measure that goes up to 60 inches, but no other measuring instrument. Write the steps you would use to get as good a measurement as possible by “stepping it off.” Include what you’d have to think about, what you’d measure, and what you’d compute.
4. Assume that I followed your procedure and found that the length of the building was 62 and a third steps. What would that tell you that the length of the building was, given your procedure?
5. If I repeated this process several times, do you think the measurement (in feet) would come out exactly the same each time?
6. What sort of variability might we expect in the results? Write a paragraph using some of these words, as appropriate: systematic, random, biased.
7. How could someone write a poor procedure here, or carry it out poorly? Can you think of a way that would make the results biased? What would that be?

After reading to the end of Part II, think about whether you want to change any of your answers above.

Then answer these questions.

8. Why do people do random samples so much rather than other types of sampling?
9. How would one do a random sample?

Read some of Part III. Pages 215-218.

10. Give an example of a kind of study where we should use a control group. Describe how you would set up an experiment with a control group.
11. Re-read Part III. Write any questions you have.