

## Readings for Psy941

By now you've probably noticed that there is no required textbook for the course. The simple reason is that the structure and content of the course have been "shaped" over the last 30 years by the input of three groups into a collection of topics that is not well-covered by any text we've found:

1. the advisors and researchers you came from and I send you back to – they tell me the methodological and data analytic skills that will be most useful for you to have sooner rather than later
2. past students who have taken the course – who have applied materials from this class in their own research or their learning beyond these materials
3. teachers and researchers who borrow the materials from the websites – who tell me about extensions and fills that will enhance things.

The additional reasons come from the intent of this course as a "data collection and analysis" sort of course about "question answering, hypothesis testing & story telling", and not a "statistics" sort of course. The statistical models we work with and the underlying math is well known and largely agreed upon, so any one of dozens of "stats books" would do nicely. However, with the stated goal of "analyses & answers" we have to consider that different research domains have slightly different histories, traditions, and current best practices. So, it is important that you read about using these methods and models within your research areas.

### Quiz #1 – Basic Research Methods & Designs

This portion of the course is about "where data come from"! It covers the non-statistical topics usually covered in a "research methods" course.

1. Go to Amazon (or wherever you like to look for books) and search for "research methods for ?????", putting in your research area. Then:
  - a. Pick one out, buy a cheap used copy, and look through the chapter headings that go with the various topics of Quiz 1
  - b. More importantly!!!! → when you are reading the skads of articles that will be assigned to you in classes and for your blooming programmatic research, read the Method section and be sure you understand the sampling, assignment, manipulation, control, measurement methods they are using and why they are using them.
2. You will notice that there are often citations and references for **methodological choices** not just for the literature review! Go read the occasional one of these – you will come to understand that there is a "backstory" to the methodology, measurement and data analysis, just as you already know there is one for the substantive paradigms and conceptual theories involved.
3. Some classic "great stuff" we should all read early & often.
  - a. Most of us learn about "experimental methods" first – here's a great version of describing this sort of research  
**<https://www.sfu.ca/~palys/Festinger-1953-LaboratoryExperiments.pdf>**
  - b. On the other hand, most of us won't spend our careers running laboratory experiments! Where does the rest of quantitative behavioral knowledge come from? **Campbell, D. T., & Stanley, J. (1963). *Experimental and quasi-experimental designs for research*. Chicago, IL: Rand McNally.**  
OR  
**Cook, T.D. and Campbell, D.T. (1979) *Quasi-Experimentation Design and Analysis Issues for Field Settings*. Houghton Mifflin, Boston.**

## Quiz #2 - Basic Bivariate Data Analysis & Hypothesis Testing

## Quiz #3 - The "Next Layer" of Design & Analysis

This portion of the course is about data analysis using classic (OLS) bivariate statistical models. This is likely to be the part of the course that is most familiar to you, but also the part of the course you will most often say to yourself, "Humph, they didn't tell me that part!"

1. Go to Amazon (or wherever you like to look for books) and search for "statistical analysis/methods for ?????", putting in your research area. Then:
  1. Pick one out, buy a cheap used copy, and look through the chapter headings that go with the various topics of Quiz 2 & 3.
    - Here is one that many folks who have taken the class have reported particularly liking:  
**Statistical Methods in Education & Psychology by Glass, Gene V.; Hopkins, Kenneth D.. [1995, 3rd Edition.]**
2. Two classics that are very worth reading
  - Everybody knows the t-test! Here's a great version of that story:  
**Fisher Box, Joan (1987). "Guinness, Gosset, Fisher, and Small Samples". *Statistical Science*. 2 (1): 45–52.**
  - Everybody know about Pearson's correlation, but there is much more to the model and its results!!!  
**Rogers and Nicewander (1988). "[Thirteen Ways to Look at the Correlation Coefficient](#)"(PDF). *The American Statistician*. 42 (1): 59–66**
3. Probably my favorite treatment of what we are about when we statistically analyze data is:

**Abelson, Robert P. (1995). *Statistics as Principled Argument*. Hillsdale, N.J.: L. Erlbaum Associates**

## Quiz #4 – Extending and Integrating

The topics of this section (nonparametric statistics & meta-analysis) are not particularly common topics in an introductory data analysis course. However, they are both useful topics to cover at this point, for both you and I

For you → You are likely to be collecting pilot data soon (or have already). Pilot data are often relatively small data sets and nonparametric methods can be very useful for small data sets.

For me → While we are covering the various nonparametric models and exploring which are most parallel to the models we already know, we'll have further discussions about the nature of measurement, data, and the assumptions of mathematical operations & statistical models.

For you → It is hard to read research articles, proposals/grants, let alone literature reviews that don't include meta analyses. You probably should be able to understand what they are telling you!

For me → While we talk about how to decide what articles to include in a meta-analysis, how to describe them, "code" them and ultimately compare them, we will have a thorough review of all the topics of Quiz #1!

Some things to read!

### Nonparametrics

1. the "stats book" you chose for above should get you started
2. A condensed on-line version of one of the classic texts (Sidney Siegel (1957) Nonparametric Statistics, The American Statistician)  
<https://www.tandfonline.com/doi/abs/10.1080/00031305.1957.10501091?src=recsys>

### Meta-analysis – Both by Gene Glass

1. <http://www.gvglass.info/papers/primary.pdf>
2. <http://www.gvglass.info/papers/meta25.html>