

CMST 7915: COMMUNICATION THEORY

Designing Scientific Communication Research

Fall 2013, MW 3:30-4:50, Prescott 118

Actual science at the frontier is supposed to be difficult. If it wasn't, you wouldn't be at the frontier ~Ziliak & McCloskey

Generalizations obscure the details, and a great deal of beauty is in the details ~Janet Bavelas

The job of science is to ask questions of Nature. A discipline is a method of asking questions and of testing answers to determine whether they are sound. ~ Lee Cronbach

Experimental observations are only experience carefully planned in advance, and designed to form a secure basis of new knowledge ~ Sir Ronald Fisher

The rules for measuring most psychological attributes are not intuitively obvious ~ Nunnally

In the interplay between design and statistics, design rules! ~Shadish, Cook, & Campbell

The meaning of knowledge produced by the scientific method is always constrained by the specific methodology used in its creation. ~Andrew High & James Price Dillard

Graham Bodie, Ph.D.

126 Coates Hall, 578.6683 (office), (601) 316.6117 (cell), gbodie@lsu.edu

Office Hours: by appointment

Course Overview

This course provides an in-depth examination of the decision process involved when designing scientific communication research. Notice that the previous sentence did not say “quantitative research” but “scientific research” as many of the decisions we will discuss in this course are just as applicable to research that does not use numbers to make principled arguments. Although you can catch up and do quite well in the course, I do assume basic understanding of research. Having taken a basic course that covers elements of research design and basic statistical procedures is not a pre-requisite; it is, however, recommended.

Texts

I will post all readings, book chapters and articles, on Moodle. I have included below a list of texts that you might consider purchasing in the order that I recommend.

1. American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association.
(Really, if you do not have a copy of this you are not a graduate student.)
2. Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.
3. Abelson, R. P. (1995). *Statistics as principled argument*. Hillsdale, NJ: Erlbaum.
4. Hayes, A. F. (2005). *Statistical methods for communication science*. Mahwah, NJ: Erlbaum.
5. Keppel, G., & Wickens, T. D. (2009). *Design and analysis: A researcher's handbook* (4th ed.). Upper Saddle River, NJ: Prentice Hall.

(If I were teaching a class on ANOVA, this is the book I would use.)

6. Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth: Harcourt College Publishers.
7. Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill.
(Version other than the SECOND EDITION are said to be not as good. You be the judge, but our readings come from the 1978 version.)
8. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Mahwah, NJ: Erlbaum.
(In my experience, this book is used quite often as a reference text. It is good to have on your shelf, within arm's reach.)
9. Rosenthal, R., Rosnow, R. L., & Rubin, D. B. (2000). *Contrasts and effect sizes in behavioral research: A correlational approach*. Cambridge, UK: Cambridge University Press.
(For those wishing to go beyond simple omnibus tests and test theoretical predictions with precision, this is an invaluable source.)

Exams

There will be 2 exams given during the course of the semester, one approximately at mid-term and the other during final exam week. These exams will consist of questions covering conceptual material. The plan is to have these exams in class (Tuesday or Thursday of midterm week [Oct 14-19] and during the final exam period [Saturday, December 14, 10am – noon]). I am told that taking exams during coursework is good preparation for comprehensive exams. If necessary, there will also be quizzes.

Mini Projects

Over the course of the semester, there will be selected “mini projects” that will involve your writing a paper (max pages specified below); data collection and analysis may be involved.

- **Mini-Project 1 (Communication “Science”).** Hayes claims that “Communication is a scientific discipline” (p. 14). What does that mean? The page limit is 3 pages. All papers to be written individually with minimal conferencing among seminarians. **Approximate Due Date: Sept. 26**
- **Mini-Project 2 (Assess a scale).** In a group, find a published scale measuring a construct of interest with the following characteristics:
 - in a Communication journal (preferably no earlier than 2005, but earlier scales with limited validity portfolios will also work; the latter characteristic is really the key)
 - evidence for validity confined to data from college student participants

In no more than 6 pages, do the following:

- Review and assess the existing evidence relevant to issues of reliability and validity. Is the measure controversial? Should it be? How much confidence can be placed in the measure? What is missing from the scale's validity portfolio?
- Present data ($N > 200$) from both college ($n > 100$) and non-college ($n > 100$) participants that speaks to at least one component of construct validity (e.g., the factor structure of the scale); for the non-college participants, at least 25 participants must be recruited through methods other than asking RPS participants to generate known others (e.g., asking parents to fill out the scale)

Approximate due date: October 31; IRB application due September 10

- **Mini-Project 3 (Formal journal review paper)** Write a review of a paper submitted for publication to a journal (I will secure a manuscript from *Communication Research Reports* or *International Journal of*

Listening). Students need to recommend a course of action (reject, revise and resubmit, accept with revision, or accept as is) and provide arguments justifying their recommendation. Suggestions for revision should also be provided. Comments need not be limited to methodological issues, and students are encouraged to think “big picture.” The review should be no longer than 5 pages, and an additional “comments to the editor” (1-page max, optional) may be attached. The instructor will provide feedback, and a revised review will be passed on to the editor. This assignment may be subject to change.

Approximate Due Date: November 21

Teach Us Something Cool

At one point in the semester, each student is responsible for leading a class discussion on something cool and relevant to the material covered within the prior 2 weeks of class. So, when something strikes you as interesting, novel, or just plain old cool, come talk to me so we can set up a day for you to present. The presentation does not need to be long nor do you have to use PowerPoint (and if you use Prezi I reserve the right to fail you unless you make a convincing case for its inclusion). The limit is one student per week (either Tuesday or Thursday of a given week) with no person able to present after the class period preceding NCA. No person can repeat any topic already presented upon by another student. The criteria upon which your grade will be determined are:

1. The subject matter is relevant to the design of studies (i.e., no fancy statistical stuff unless it is directly relevant to design)
2. The subject matter is interesting
3. The topic fits within our current discussion (i.e., no more than 2 weeks old)
4. Your presentation sparks class discussion that lasts at least 20 minutes (and by class I mean people other than me are engaged and interested)

Final Paper

You will conduct a research study on a communication topic of your choice. You must review a body of literature, provide a rationale for a specific hypothesis or research question (or a set of them), and develop procedures for testing your ideas. In the spirit of developing recognition of the importance of programmatic research, you must develop a minimum of two studies utilizing two distinct methodological approaches (unless you can convince me that using a consistent approach is better). Depending on the nature of the project, you may also be required to collect data, analyze your results using appropriate statistical techniques, and discuss your findings in light of existing theory for at least one of your proposed studies. You must meet with me at least twice about your paper – (1) as you develop your topic, (2) as you finalize the methodology, and a third time (3) if you plan to conduct statistical analyses. The specifics about your project will be continually negotiated.

If you will collect data, the IRB application is due no later than **September 22**. A mini proposal (5 pages max, all inclusive save the cover page) is due no later than **October 24**. The complete paper is due no later than **December 3** and cannot exceed a total of 30 pages all inclusive (plus one for the cover page; 12 point Times New Roman Font only). It will be graded for clarity of writing, quality of argument, and rigor of proposed method. When appropriate the paper will also be judged for correct use of statistical procedures and accurate interpretation of findings. All students may choose to work individually or in a group setting. If the latter is chosen, all team members are required to put forth equivalent effort and will earn the same grade unless a sufficient case can be made against an offending party. This paper can be an extension of mini-project 2, but that decision (like all other decisions) needs to be jointly agreed upon by the student(s) and the instructor. Students are also expected to present their final product in class – dates to be determined.

Grading

For mini projects and the final paper, hard (paper) copies are required. You must collate and staple. Unstapled papers will be thrown in the air. All papers are due in class, and no late assignments will be accepted without prior approval from the instructor. Late work will be docked a letter grade for each week it is late. No work will be accepted after 3 weeks have passed. All papers have pages limits (specified above). **Work exceeding the limits will neither be read nor graded.** All papers must be typed, double spaced, 12-point Time New Roman font, one-inch margins, printed one-sided, and conform to APA style (6th edition). **Failure to conform to APA style in any respect will result in the reduction of a letter grade for the paper.** The focus of grading will be on content (accuracy, validity, insight, etc.), though presentation (spelling, grammar, style, neatness, etc.) will also influence the grading.

<u>Source</u>	<u>Percentage of Final Grade</u>
Mini Projects	20
TUSC	10
Midterm	15
Final Exam	25
Final Paper and Presentation	30

The grade you EARN for this class will be based on a formula that weights the five items listed above by their respective percentages. **For all assignments, you will earn a letter grade.** These letter grades nicely correspond to a traditional 4.0 scale, where a 4.0 equals and grade of “A” as follows:

A+ = 4.33	C = 2.0
A = 4.0	C- = 1.67
A- = 3.67	D+ = 1.33
B+ = 3.33	D = 1.0
B = 3.0	D - = .67
B- = 2.67	F+ = .33
C+ = 2.33	F = 0.0

Course Outline (with approximate dates; i.e., I’m not promising anything)

- I. Introduction and Overview
(August 27)
- II. What Current Graduate Students Face: Your Burden of Proof and the Importance of Principled Argument (or Some Gatekeepers are Stupid)
(August 29)
- III. Science as an Approach to the Study of Communicative Phenomena
(September 3 – 12)
 - A. Basics
 - B. Types of Relationships

IV. The Importance of Design

(September 17-24)

- A. Choices have consequences!
- B. Why “In the interplay between design and statistics, design rules!”
- C. The Basics of Design

V. Regardless of Design ...

(September 26-October 17)

- A. Everyone Measures
 - 1. Fundamentals of Measurement: From the Conceptual to the Operational World
 - 2. Quality of Measurement: Reliability and Validity
 - 3. Putting it Together
- B. Everyone Samples
- C. Everyone Generalizes (or at least they want to)

VI. Making Specific Design Choices

(October 22-December 5)

- A. Cross Sectional Research
- B. Dairy Studies and Event Sampling
- C. Experimental Research
 - 1. Basics
 - 2. Validity
- D. Combining Methods to Make Claims: The Case of Sharing Positive Emotions

Course Outline (with readings)

I. Introduction and Overview

Syllabus

II. What Current Graduate Students Face: Your Burden of Proof and the Importance of Principled Argument (or Some Gatekeepers are Stupid)

Abelson, R. P. (1995). *Statistics as principled argument*. Hillsdale, NJ: Erlbaum. Ch. 1, 9

Keaton, S. A., & Bodie, G. D. (2013, in press). The statistical and methodological acuity of scholarship appearing in the *International Journal of Listening* (1987-2011). *International Journal of Listening*, 27. doi: 10.1080/10904018.2013.813206

Levine, T. R. (2013). A defense of publishing nonsignificant (*ns*) results. *Communication Research Reports*, 30, 270-274. doi: 10.1080/08824096.2013.806261

Selected exchanges with journal editors

III. Science as an Approach to the Study of Communicative Phenomena

a. Basics

Berger, C. R., & Chaffee, S. H. (1987). The study of communication as a science. In C. R. Berger & S. H. Chaffee (Eds.), *Handbook of communication science* (pp. 15-19). Newbury Park, CA: Sage.

Chaffee, S. H., & Berger, C. R. (1987). What communication scientists do. In C. R. Berger & S. H. Chaffee (Eds.), *Handbook of Communication Science* (1st ed., pp. 99-122). Newbury Park, CA: Sage.

Hayes, A. F. (2005). *Statistical methods for communication science*. Mahwah, NJ: Erlbaum. Ch. 1

Bavelas, J. B. (1987). Permitting creativity in science. In D. N. Jackson & J. P. Rushton (Eds.), *Scientific excellence: Origins and assessment* (pp. 307-327). Beverly Hills: Sage.

b. Types of Relationships

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182. doi: 10.1037/0022-3514.51.6.1173

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76, 408-420. doi: 10.1080/03637750903310360

Rosnow, R. L., & Rosenthal, R. (1991). If you're looking at the cell means, you're not looking at only the interaction (unless all main effects are zero). *Psychological Bulletin*, 110, 574-576. doi: 10.1037/0033-2909.110.3.574

Rosenthal, R., Rosnow, R. L., & Rubin, D. B. (2000). *Contrasts and effect sizes in behavioral research: A correlational approach*. Cambridge, UK: Cambridge University Press. Ch. 1

IV. The Importance of Design

a. Choices have consequences!

Bavelas, J. B. (2005). The two solitudes: Reconciling Social Psychology and Language and Social Interaction. In K. Fitch & R. Sanders (Eds.), *Handbook of Language and Social Interaction* (pp. 179-200). Mahwah, NJ: Erlbaum.

b. Why "In the interplay between design and statistics, design rules!"

Abelson, R. P. (1995). *Statistics as principled argument*. Hillsdale, NJ: Erlbaum. Ch 1

Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist*, 49, 997-1003. doi: 10.1037/0003-066X.49.12.997

An exemplar

Bem, D. J. (2011). Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology* (pre-print).

Wagenmakers, E-J, Wetzels, R. Borsboom, D., Van der Mass, H. (2011). Why psychologists must change the way they analyze their data: The case of Psi. *Journal of Personality and Social Psychology*, 100, 426.

c. The Basics of Design

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth: Harcourt College Publishers. Chs. 18-20

Smith, E. R. (2000). Research design. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 17-39). Cambridge: Cambridge University Press.

V. Regardless of Design ...

A. Everyone Measures

1. Fundamentals of Measurement: From the Conceptual to the Operational World

Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill. Ch. 1

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth: Harcourt College Publishers. Ch. 3, 26

Hayes, A. F. (2005). *Statistical methods for communication science*. Mahwah, NJ: Erlbaum. Ch 2

Bodie, G. D. (2013). Issues in the measurement of listening. *Communication Research Reports*, 30, 76-84.

Wheeler, L., & Reis, H. T. (1991), Self-recording of everyday life events: Origins, types, and uses. *Journal of Personality*, 59, 339–354. doi: 10.1111/j.1467-6494.1991.tb00252.x

2. Quality of Measurement: Reliability and Validity

Reliability:

Hayes, A. F. (2005). *Statistical methods for communication science*. Mahwah, NJ: Erlbaum. Ch. 6

Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill. Chs. 6-7

Validity:

Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill. Ch 3, Ch 9 pp. 310-313

Cronbach, L., & Meehl, P. E. (1959). Construct validity in psychological tests. *Psychological Bulletin*, 56, 81-105.

Bodie, G. D., Worthington, D. L., & Fitch-Hauser, M. (2011). A comparison of four measurement models for the Watson-Barker Listening Test (WBLT)-Form C.

Communication Research Reports, 28, 32-42. doi: 10.1080/08824096.2011.540547

Bodie, G. D., Worthington, D. L., & Gearhart, C. C. (2013). The Revised Listening Styles Profile (LSP-R): Development and validation. *Communication Quarterly*, 61, 72-90. doi: 10.1080/01463373.2012.720343

Gearhart, C. C., Denham, J. P., & Bodie, G. D. (2013). Listening as a goal directed activity. *Manuscript submitted for publication*.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multi-trait multi-method matrix. *Psychological Bulletin*, 52, 281-301. doi: 10.1037/h0046016

Kotowski, M. R., Levine, T. R., Baker, C., & Bolt, J. (2009). A multi-trait multi-method validity assessment of the verbal aggressiveness and argumentativeness scales. *Communication Monographs*, 76, 443-462.

Bodie, G. D., Jones, S. M., Vickery, A. J., Hatcher, L., & Cannava, K. (2013). Evaluating source orientations for enacted support. *Manuscript submitted for publication*.

3. *Putting it Together*

Buckley, M. R., Cote, J. A., & Comstock, S. M. (1990). Measurement errors in the behavioral sciences: The case of personality/attitude research. *Educational and Psychological Measurement*, 50, 447-474. doi: 10.1177/0013164490503001

Carlson, K. D. & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods*, 15, 17-32. doi: 10.1177/1094428110392383.

John, O. P., & Benet-Martinez, V. (2000). Measurement: Reliability, construct validation, and scale construction. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 339-369). Cambridge: Cambridge University Press.

Bagozzi, R. P. (2011). Measurement and meaning in information systems and organizational research: Methodological and philosophical foundations. *Management Information Systems Quarterly*, 35, 261-292.

B. Everyone Samples

Hayes, A. F. (2005). *Statistical methods for communication science*. Mahwah, NJ: Erlbaum. Ch 3

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth: Harcourt College Publishers. Ch. 8

C. Everyone Generalizes (or at least they want to)

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin. Ch. 11

Keppel, G., & Wickens, T. D. (2009). *Design and analysis: A researcher's handbook* (4th ed.). Upper Saddle River, NJ: Prentice Hall. Ch. 24

Abelson, R. P. (1995). *Statistics as principled argument*. Hillsdale, NJ: Erlbaum. Ch 7

VI. Making Specific Design Choices

a. Cross Sectional Research

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth: Harcourt College Publishers. Ch. 25

Visser, P. S., Krosnick, J. A., & Lavrakas, P. J. (2000). Survey research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 223-252). Cambridge: Cambridge University Press.

Baltes, P. B. (1968). Longitudinal and cross-sectional sequences in the study of age and generation effects. *Human Development*, 11, 145-171. doi: 10.1159/000270604

b. Diary Studies and Event Sampling

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, 54, 579-616. doi: 10.1146/annurev.psych.54.101601.145030

Eckenrode, J., & Bolger, N. (1995). Daily and within-day event measurement. In S. Cohen, R. C. Kessler, & L. G. Gordon (Eds.), *Measuring stress: A guide for health and social scientists* (pp. 80-101). New York: Oxford University Press.

Duck, S., Rutt, D. J., Hoy, M., & Strejc, H. H. (1991). Some evident truths about conversations in everyday relationships All communications are not created equal. *Human Communication Research*, 18, 228-267. doi: 10.1111/j.1468-2958.1991.tb00545.x

Reis, H. T., & Gable, S. L. (2000). Event-sampling and other methods for studying everyday experience. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 190-222). Cambridge: Cambridge University Press.

Kubey, R., Larson, R., & Csikszentmihalyi, M. (1996). Experience sampling method applications to communication research Questions. *Journal of Communication*, 46, 99-120. doi: 10.1111/j.1460-2466.1996.tb01476.x

c. Experimental Research

1. Basics

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin. Ch 1, 8

Keppel, G., & Wickens, T. D. (2009). *Design and analysis: A researcher's handbook* (4th ed.). Upper Saddle River, NJ: Prentice Hall. Ch. 1

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth: Harcourt College Publishers. Ch. 24

2. Validity

Relationship to Design:

Brewer, M. B. (2000). Research design and issues of validity. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 3-16). Cambridge: Cambridge University Press.

Internal:

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin. Ch. 11

Levine, T. R., Feeley, T., McCornack, S. A., Harms, C., & Hughes, M. (2005). Testing the effects of nonverbal training on deception detection accuracy with the inclusion of a bogus train control group. *Western Journal of Communication*, 69, 203-218. doi: 10.1080/10570310500202355

O'Keefe, D. J. (2003). Message properties, mediating states, and manipulation checks: Claims, evidence, and data analysis in experimental persuasive message effects research. *Communication Theory*, 13, 251-274. doi: 10.1111/j.1468-2885.2003.tb00292.x

External:

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin. Ch. 3, 12-14

Shapiro, M. A. (2002). Generalizability in communication research. *Human Communication Research*, 28, 491-500. doi: 10.1111/j.1468-2958.2002.tb00819.x

Muthusamy, N., Levine, T. R., & Weber, R. (2009). Scaring the already scared: Some problems with HIV/AIDS fear appeals in Namibia. *Journal of Communication*, 59, 317-344. doi: 10.1111/j.1460-2466.2009.01418.x

d. Combining Methods to Make Claims: The Case of Sharing Positive Emotions

Gable, S. L., Reis, H. T., Impett, E., & Asher, E. R. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology*, 87, 228-245. doi: 10.1037/0022-3514.87.2.228

Gable, S. L., Gonzaga, G. C., & Strachman, A. (2006). Will you be there for me when things go right? Supportive responses to positive event disclosures. *Journal of Personality and Social Psychology*, 91, 901-917. doi: 10.1037/0022-3514.91.5.904

Reis, H. T., Smith, S. M., Carmichael, C. L., Caprariello, P. A., & Tsai, F.-F. (2010). Are you happy for me? How sharing positive events with others provides personal and interpersonal benefits. *Journal of Personality and Social Psychology*, 99, 31-329. doi: 10.1037/a0018344