

Phd Seminar: Research Methods
B9508 DRAFT SYLLABUS
Fall 2021

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Class Times: Tuesdays from 2:00pm to 5:15pm in Uris 329

Course Overview

This course addresses the fundamentals of research in the social sciences: theory, research design, methods, and critique. It is designed for Ph.D. students who wish to undertake research publishable in scholarly social science journals. We will discuss a variety of research methods with a specific focus on experiments and experimental designs. We will cover hypothesis generation, experimental and quasi-experimental research designs, and different types of validity as well as reliability of independent and dependent measures. By the end of the course, you should be able to plan a program of research including generating and framing the research question, motivating the research, designing hypotheses as well as experiments to test the hypotheses, and developing data collection instruments (we will not discuss data analysis techniques in this course). We will also practice how to read papers with a critical eye and how to critique research done by others by focusing on the key issues that underlie robust, replicable, and rigorous research.

Course description

Class sessions will be devoted to discussions of readings assigned for that week.

Grades will be based on 1) your performance as a participant in class in all sessions and the session where you are the leader; 2) your idea 1 presentation (deck due on Canvas on Tuesday, September 21st, see details at end of syllabus) and idea 2 presentation (deck due on Canvas on October 12th, see details at end of syllabus); 3) a final paper (research proposal combining your ideas 1 and 2, due October 26th), 4) your peer review of a classmate's final paper (due November 2nd, one week after proposal submission deadline).

As part of your class participation responsibilities, each Marketing and Management PhD student will lead the discussion for one of the classes.

- 1) Class Participation (20%)
- 2) Two idea decks (also presented in class) (30% total)
- 3) Final research proposal (40%)
- 4) Peer review of one student's research proposal (10%)

Course Requirements

Please note that no late submissions will be accepted.

1. *Class Participation:* You are expected to come fully prepared to each class session. This means you should have read each of the assigned articles thoroughly and thought about it as well. You should be articulate and forceful in presenting your position to the class on the issues discussed. In addition to the readings, discussion questions and written assignments may also be handed out to help you to understand the material better. Your response to these assignments will also count toward the class participation grade.
2. *Two Ideas:* You will develop a research question and design an experiment. You will also present the ideas in class. See description at the end of the syllabus. I will review each of your presentations and provide comments. For each idea, you need to put together a slide deck and submit it as well as present it. There is no need to write a paper.
3. *Research Proposal:* This paper (not slide decks) will build on the two ideas you have submitted in class. You will select a method to test your hypotheses and develop a detailed proposal. See the description on the last page of the syllabus for details. The research proposal should reflect the various considerations in the research process discussed during the semester (e.g., issues of validity). It should be sufficiently detailed so that any other researcher can implement the design, collect data, and prepare a complete article for publication.
4. *Peer review:* You will write a peer review of one of the research proposals submitted by a student in the class. The review should follow standard review practices (we will discuss these in class).

Required Texts (readings assigned from these books are posted on Canvas)

Singleton, Royce A. Jr. and Bruce C. Straits, *Approaches to Social Research*, 2005, Oxford University Press.

Kuhn, T.S. *The Structure of Scientific Revolutions*, 1970, Chicago: University of Chicago Press.

Course Outline

Week 1	Tuesday, September 7	What is “Science?” Generating Research Questions/Hypotheses Theory Building
Week 2	Tuesday, September 14	Research Design Sampling Measurement; why were the election polls so wrong? Construct Validity
Week 3	Tuesday, September 21	Experiments Internal Validity
Week 4	Tuesday, September 28	Quasi Experiments Field Experiments External and Ecological Validity
Week 5	Tuesday, October 5	Evidence for Process in Experiments Mediation and Moderation Reviewing Research Workshop
Week 6	Tuesday, October 12	Meta Analyses Replication Research Integrity

Course Schedule

Week 1: Tuesday, September 7th: What is Science; Generating Research Questions; Theory Building

Introduction to Social Science Research

Singleton and Straits, [Chapters 1](#) and [2](#)

Progress in the Social Sciences

Kuhn, T. S. (1970), pp. 1-136

Asking the Question, Being Interesting

McGuire, W. J. (1997). [Creative hypothesis generating in psychology: Some useful heuristics.](#) *Annual Review of Psychology*, 48, 1-30. **(skim)**

Wicker, A. W. (1985). [Getting out of our conceptual ruts: Strategies for expanding conceptual frameworks.](#) *American Psychologist*, 40, 1094-1103.

Fiske, S. T. (2004). [“Mind the gap: In praise of informal sources of formal theory,”](#) *Personality and Social Psychology Review*, 8, 132-137.

Discussion Questions

Where do research problems come from?

What research problems are you most interested in? What kindled your interest?

What do you think might be your first steps in studying the problem? What will it take for you to find the answers?

What is a paradigm according to Kuhn? What is normal science? What is an interesting question for normal science?

What role do paradigms play for researchers? What are some of the major paradigms in your field?

You hypothesize that self-control at a young age can predict success in life. How do you study this research question? Check out: <https://www.youtube.com/watch?v=0mWc1Y2dpmY>

Read this New York Times summary of a research study:

http://www.nytimes.com/2010/07/28/business/economy/28leonhardt.html?_r=1

Do you find the results convincing? Why or why not?

In class Group Assignments

1. Does using technology in the classroom improve the class? What are the decisions you need to make to test this research question?

2. Columbia Business School implemented a new curriculum some years ago. All incoming students are required to take all courses in this curriculum. The Dean asks you to evaluate the core curriculum. How will you proceed? What are the problems you face? How much faith can be put in your findings? Now, imagine that the new core curriculum proposal has just been passed by the Faculty. The Dean asks you to study the program for two years. You have just taken a Research Methods course, and wish to have a group with which to compare the new curriculum group. You therefore request that the old program be continued for two years and students be allowed to volunteer for either the old or the new program. You therefore set up an experimental group and a control group and track their performance for two years. Evaluate this research design critically.

3. Generate two researchable questions about human behavior. Construct hypotheses from each of your ideas. How do you plan to test your hypotheses?

4. What makes for an interesting hypothesis? How do you construct a hypothesis? Critically evaluate the hypotheses that you came up with.

Assignment for the next class

1. After today's class, go to the IRB website and take the Human Subjects Certification Course if you have not already done so.

<https://research.columbia.edu/content/human-subjects-protection-training-program>

2. Check out: https://www.ted.com/talks/ben_goldacre_battling_bad_science

3. Review any 2020 Presidential poll by checking the sampling, questions, and overall methodology.

Additional recommended readings

Alba, Joseph W. (2012), "In Defense of Bumbling," *Journal of Consumer Research*, 38 (6), April, 981-987.

Davis, M. S. (1971). That's interesting! Towards a phenomenology of sociology and a sociology of phenomenology. *Philosophy of Social, Science*, 1, 309-344.

Ioannidis, John (2005). Why most Published Research Findings are False. *PLOS Medicine*. Volume 2, Issue 8.

Janiszewski et al. (2016). A Tutorial in Consumer Research: Knowledge Creation and Knowledge Appreciation in Deductive-Conceptual Consumer Research. *Journal of Consumer Research*, Aug 2016, 43 (2) 200-209

Root-Bernstein (1988). Setting the stage for discovery. *The Sciences*, 26-34.

Week 2: Tuesday, September 14th: Research Design, Sampling, Measurement, Construct Validity

Elements of Research Design

Singleton and Straits, Chapter 3

Measurement

Singleton and Straits, Chapter 4

Schwarz, N. (1999). [Self-Reports: How the Questions Shape the Answers](#). *American Psychologist*, Vol 54(2), Feb 1999, 93-105. *American Psychologist*, Vol 54(2), Feb 1999, 93-105.

Sampling

Singleton and Straits, Chapter 5

Wessling, Huber and Netzer (2017), [MTurk Character Misrepresentation: Assessment and Solutions](#), *Journal of Consumer Research*. Vol. 44, 211-230.

Construct Validity

Moshon, Daniel and Janet Schwarz (2019), "[The Importance of Construct Validity in Consumer Research.pdf](#)" *Journal of Consumer Psychology*, 208-214.

Discussion Questions

What are the basic choices in research design? How does one go about making research design choices?

What is a program of research?

What are the positive and negative aspects of employing multiple methodologies?

What are the advantages and disadvantages of measuring observable variables (e.g., income) and unobservable variables (e.g., affluence)?

What is the relationship between reliability and validity? How do multi-item (vs. single-item) scales enhance reliability?

What are the potential disadvantages of random sampling?

Amazon mTurk samples are becoming increasingly used in experimental research. What is your view on use of this sample?

Identify the advantages and disadvantages of various sampling designs.

Is sampling important for experiments? How important?

Define systematic error and random error. What types of validity does each one threaten?

Which type of error is more dangerous in your opinion?

What is the current evidence for the presence of demand artifacts?

In your opinion, do demand artifacts introduce systematic or random error into an experiment?

In class group assignment

1. Pick any 2020 presidential poll one of you reviewed and examine the methodology used. In your view, how accurate will the poll be in predicting the winner of the election?

Assignment for the next class

1. Idea 1 (slide deck) is due in the next class (see end of the syllabus for the description). You will present the idea and the scale (see below) in the next class.

2. Sign up and participate in an online experiment online in the behavioral lab.

2. Follow the steps below and create a scale that measures the dependent variable in your idea paper.

1. Create a multiple-item scale (shoot for 10 - 12 items)
2. Administer the scale to 15 people (I would suggest using each other).
3. Technically, you should then conduct a factor analysis (determine whether the scale is unidimensional) and exclude items that do not “load” on the dimension that accounts for the greatest amount of variability (or the dimension that you are actually interested in).

In the interest of ease and time, you will forego this step and instead, simply assess whether the items are internally consistent. You will do this by computing Cronbach’s alpha (a.k.a., “the reliability coefficient”). Alpha measures the extent to which item responses obtained at the same time correlate highly with each other.

As a reminder: internally consistency measures estimate how consistently individuals respond to the items within a scale. Note that measures of internal consistence are not tests of the unidimensionality of items in a scale. For example, if the first half of an instrument is educational items which correlate highly among themselves and the second is political items which correlate highly among themselves, the instrument would have a high Cronbach's alpha anyway, even though two distinct dimensions were present. Note that measures of internal consistency are often called measures of "internal consistency reliability" or even "reliability," but this merges the distinct concepts of internal consistency and reliability, which do not necessarily go together.

The widely-accepted social science cut-off is that alpha should be .70 or higher for a set of items to be considered a scale, but some use .75 or .80 while others are as lenient as .60. That .70 is as low as one may wish to go is reflected in the fact that when alpha is .70, the standard error of measurement will be over half (0.55) a standard deviation.

In SPSS, Cronbach's alpha is found under Analyze, Scale, Reliability Analysis. Then in the Statistics button, select Scale to get alpha. You can also check Scale if deleted, in which case

alpha will be computed both for all variables entered, and also for all remaining variables if any one is dropped (the alpha if deleted is listed in a table, one for each variable).

4. Alpha makes no assumptions about what one would obtain at a different time. To determine whether your scale is reliable in this way, please administer the remaining items (i.e., the scale after you have dropped questions that lower your Cronbach Alpha) and compute the correlation between administration time 1 and time 2.

In addition to the idea and conceptual model, your presentation should include:

- (1) A copy of the original scale
- (2) The original alpha coefficient before problematic items are removed and the alpha coefficient obtained after items are removed
- (3) The new scale
- (4) An assessment of the measure's performance (i.e., stability) over time. Just report Pearson's R.

Additional recommended readings

Goodman, JK and G. Paolacci (2017). Crowdsomers Take Over: Towards Valid Crowdsourcing of Consumer Research, *Journal of Consumer Research*, Vol. 44, 196-210.

Brewer, M.B. & Crano, W. D. (2014). Research Design and Issues of Validity. In Reis, H. T., & Judd, C. M. (Eds.), *The Handbook of Research Methods in Personality and Social Psychology*. New York: Cambridge University Press.

Schwarz (2003), Self-Reports in Consumer Research: The Challenge of Comparing Cohorts and Cultures, *Journal of Consumer Research*, Mar 2003, 29 (4) 588-594

Campbell, Donald T. and D. W. Fiske (1959), "Convergent and Discriminant Validation by the Multi-Trait-Multimethod Matrix," *Psychological Bulletin*, 56, 81-105. (pp. 81-88, front part only)

Nunnally, Jim (1978), *Psychometric Theory*, New York: McGraw-Hill. 86-113

Perdue, Barbara C. and John O. Summers (1986), "Checking the Success of Manipulations in Marketing Experiments," *Journal of Marketing Research*, 23, 317-326

Kruglanski, Arie W. (1975), "The Human Subject in the Psychology Experiment: Fact and Artifact," in *Advances in Experimental Social Psychology*, L. Berkowitz, ed., Vol. 8, New York: Academic Press.

Blanton, H., & Jaccard, J. (2006). Arbitrary metrics in psychology. *American Psychologist*, 61, 27 - 41.

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, 44, 175-184

Oppenheimer, D. M., Meyvis, T., Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, 45, 867-872

Krosnick, J. A., Lavrakas, P. A. & Kim, K. Survey research. (2014). In Reis, H. T., & Judd, C. M. (Eds.), *The Handbook of Research Methods in Personality and Social Psychology*

Heyman, R. F. Lorber, M. F. Eddy, J. M. & West, T. V. (2014). Behavioral observation and coding. In Reis, H. T., & Judd, C. M. (Eds.), *The Handbook of Research Methods in Personality and Social Psychology*

Reis, H. T. Shelley L. Gable and Michael R. Maniaci (2014). Methods for studying everyday experience in its natural context. In Reis, H. T., & Judd, C. M. (Eds.), *The Handbook of Research Methods in Personality and Social Psychology*

John, O. P. and Benet-Martinez (2014). [Measurement: Reliability, construct validation, and scale construction](#). In Reis, H. T., & Judd, C. M. (Eds.), *The Handbook of Research Methods in Personality and Social Psychology*.

Gelman, Andrew David Rothschild (2017). We need to move beyond Election-Focused Polling.
http://www.slate.com/articles/technology/future_tense/2017/09/what_is_the_future_of_polling.html

Week 3: Tuesday, September 21st: Experiments, Internal Validity

Idea 1 is due. Submit slide deck on Canvas before class.

Experimentation

Singleton and Straits, Chapters 6 and 7

Falk, A., & Heckman, J. J. (2009). [Lab experiments are a major source of knowledge in the social sciences](#). *Science*, 326, 535-538.

Wells, G. L., & Windschitl, P. D. (1999). [Stimulus sampling and social psychological experimentation](#). *Personality and Social Psychology Bulletin*, 25, 1115-1125.

Internal Validity

Cook, Thomas D. and Donald T. Campbell, [Quasi-Experimentation: Design and Analysis Issues for Field Settings](#), 1979, Houghton Mifflin. pp. 50-59

In-class individual assignment

Make a 10-minute presentation of the research you propose in your idea paper 1. What is the research question? Why is it interesting? What is your hypothesis and how do you derive it? How will you measure your dependent variable? Present your scale.

Discussion Questions

Discuss your experience as a participant in an experiment.

What is the basic philosophy of experimentation?

Which threats to validity do you think are most important for the types of research questions you are interested in?

Define the following terms: independent and dependent variables, experimental and control groups, systematic and random error, and confound.

How can you control for systematic error in an experiment? What about random error?

What is the primary benefit to “matching” subjects? Can it be a substitute for randomization?

Why do we often say that correlation is not equal to causation?

Why use factorial designs?

To obtain a significant interaction effect, the component main effects must be significant. Agree or disagree?

Within-subjects designs have been criticized on the grounds of context effects of practice, sensitization, and carry-over. How can these effects be minimized?

Assignment for the next class

1. Outline plans for the design of a laboratory experiment, a field experiment, and a field study of the same basic problem: the relation between the cohesiveness of a group and its productivity. Keep the design simple. Do the three designs study the same problem? That is, is the problem altered by the differences in the three kinds of studies? How? Which design is the “best”? Prepare to make a brief presentation to class on this question.
2. Read Berdahl, J. L., Uhlmann, E. L., & Bai, F. (2015). Win–win: Female and male athletes from more gender equal nations perform better in international sports competitions. *Journal of Experimental Social Psychology*, 56, 1-3.

Do you agree with the conclusions? Why or why not? What would it take to convince you?

Additional recommended readings

Greenwald, Anthony G. (2012), “There is nothing so Theoretical as a Good Method,” *Perspectives on Psychological Science*, 7 (2), 99-108.

Ilgen, D. R. (1986), "Laboratory Research: A Question of When not If," in E. Locke, ed., *Handbook of Industrial and Organizational Psychology*, Chicago: Rand McNally.

Peterson, R.A. (2001), “On the Use of College Students in Social Science Research: Insights from a Second-Order Meta-Analysis,” *Journal of Consumer Research*, 28:450-461.

Charness, G., Gneezy, U., & Kuhn, M. A. (2012). [Experimental methods: Between-subject and within-subject design](#). *Journal of Economic Behavior & Organization*, 81, 1-8.

Week 4: Tuesday, September 28th: Quasi-Experiments, Field Experiments and External and Ecological Validity (Guest: Professor Vicki Morwitz)

External Validity

Mook, D. G. (1983), "[In defense of external invalidity](#)," *American Psychologist*, 38, 379-387.

Morales, Andrea C., On Amir, and Leonard Lee (2017), "Keeping It Real in Experimental Research—Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior," *Journal of Consumer Research*.

Field Studies and Experiments

<http://www.everydaysociologyblog.com/2009/04/field-experiments-and-racism.html>

Morwitz, Vicki G., Eric Johnson, and David C. Schmittlein (1993), "Does Measuring Intent Change Behavior?" *Journal of Consumer Research*, 20 (1), 46-61.

Dholakia, Utpal M. and Vicki G. Morwitz (2002), "The Scope and Persistence of Mere-Measurement Effects: Evidence from a Field-Study of Customer Satisfaction Measurement," *Journal of Consumer Research*, 29 (2), 159-167.

Rossi, Peter E. (2017), "Causal Inference In Marketing Applications," Working paper (skim)

Discussion Questions

How can we study effects of religion or what makes people religious in a field experiment?
What is ecological validity? What is the relationship between ecological validity and external validity?

Do experiments have low external validity?

What are the pros and cons of using student subjects?

Under what conditions is the use of student subjects justified? What about lab research?

What are the arguments for and against the use of probability samples?

What are the relationships between the four different types of validity? How would you prioritize between them?

Now consider research with the goal of estimating population values (vs. Causal hypothesis testing). How would you prioritize the different types of validity?

In-class group assignment

Berdahl, J. L., Uhlmann, E. L., & Bai, F. (2015). Win-win: Female and male athletes from more gender equal nations perform better in international sports competitions. *Journal of Experimental Social Psychology*, 56, 1-3.

Do you agree with the conclusions? Why or why not? What would it take to convince you?

In-class individual assignment

Present your designs for the study of group cohesiveness and productivity.

Assignment for next class

Please write a two-page review of the paper given to you. Follow the “Guidelines to Reviewers” on the Journal of Consumer Research website (<http://www.ejcr.org/instr-revs.htm>). In class, we will discuss the actual reviews of the paper and see how the paper evolved through the review process. Take into account all the issues we have discussed so far (e.g., internal validity, external validity, ecological validity, construct validity, reliability) when you critique the paper. Before writing your review, read “A Field Guide for the Review Process: Writing and Responding to Peer Reviews,” by Rajesh Bagchi, Lauren Block, Rebecca W. Hamilton, Julie L. Ozanne in Journal of Consumer Research.

Additional recommended readings

Gneezy, A. (2016). Field Experimentation in Marketing Research. *Journal of Marketing Research*.

Paluck, E. L., & Cialdini, R. B. (2014). Field research methods. *Handbook of Research Methods in Social and Personality Psychology*, 81.

Frank, Mark G.; Gilovich, Thomas (1988). The dark side of self- and social perception: Black uniforms and aggression in professional sports. *Journal of Personality & Social Psychology*, 54, 74-85.

Paluck, E. L. (2010). The promising integration of qualitative methods and field experiments. *The ANNALS of the American Academy of Political and Social Science*, 628(1), 59-71.

Bai, F., Uhlmann, E. L., & Berdahl, J. L. (2015). The robustness of the win–win effect. *Journal of Experimental Social Psychology*, 61, 139-143.

Kuppens, T., & Pollet, T. V. (2015). Gender equality probably does not affect performance at the Olympic games: A comment on Berdahl, Uhlmann, and Bai (2015). *Journal of Experimental Social Psychology*, 61, 144-147.

West, S. G., Charm, H., & Liu, Y. (2014). [Causal inference and generalization in field settings: Experimental and quasi-experimental designs](#). In Reis, H. T., & Judd, C. M. (Eds.), *The Handbook of Research Methods in Personality and Social Psychology*. New York: Cambridge University Press.

Morales, Andrea C.; On Amir, and Leonard Lee (2017), “Keeping It Real in Experimental Research—Understanding When, Where, and How to Enhance Realism and Measure Consumer Behavior,” *Journal of Consumer Research*, Vol. 44 (465-476).

Week 5: Tuesday, October 5th: Evidence for Process in Experiments, Reviewing Research Workshop

Submit your review of the paper on Canvas before class

Evidence for Process

Spencer, S., Zanna, S., & Fong, G. (2005). [Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes](#). *Journal of Personality and Social Psychology*, 89, 845-851.

Evaluating Research

Greenwald, Anthony G., Anthony R. Pratkanis, Michael R. Leippe, and Michael H. Baumgardner (1986), "[Under What Conditions Does Theory Obstruct Progress?](#)" *Psychological Review*, 93, 216-229.

In-class group assignment

Read the actual review the authors received and think about how you would address the critique. Read the revision notes the authors submitted with their revised paper. What is your reaction to the revision?

In-class individual assignment

Present your review of the assigned paper and discuss how you think the authors should address your critique.

Discussion Questions

How would you establish the process mechanism for your hypothesis (i.e., the research question you posed in your idea paper)?

What is the confirmation bias in theory testing? Illustrate using research on the sleeper effect.

What are "overgeneralized conclusions"?

Why does the confirmation bias persist?

What remedies do Greenwald et al suggest?

What is the confirmatory approach to theory testing?

What are the characteristics of a rigorous theory test using the confirmatory approach? What are the problems with these prescriptions?

What is your view of post-hoc theorizing?

What do editors do? What do they want? How can one communicate effectively with editors and with reviewers?

How should one go about preparing a critical review?

Assignments for the next Class

Idea 2 is due. Include your initial slide deck for idea 1 and add details on the experimental or quasi-experimental design you will use to test your hypotheses. What will your procedure look like. What will be the predicted results? How will you rule out alternative explanations? Come to class prepared to discuss your idea and how it builds on idea 1. If you decide to change the research question, you will need to re-do the first part of the presentation and include it in the deck.

Additional recommended readings

Fiedler, K., Schott, M., & Meiser, T. (2011). [What mediation analysis can \(not\) do](#). *Journal of Experimental Social Psychology*, 47(6), 1231-1236.

Farley, John U., Donald R. Lehmann, and Alan Sawyer (1995). Empirical Marketing Generalizations Using Meta-Analysis. *Marketing Science*, 14(3).

Preacher, K. J. (2015). Advances in mediation analysis: A survey and synthesis of new developments. *Annual Review of Psychology*, 66, 825-852

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, 1173-117.

Kenny Website Tutorial: <http://davidakenny.net/cm/mediate.htm>

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of personality and social psychology*, 89(6), 852.

Sternthal, Brian, Alice M. Tybout, and Bobby J. Calder (1987), "Confirmatory Versus Comparative Approaches to Judging Theory Tests," *Journal of Consumer Research*, 14, 114-125.

Muller, D., Judd, C. M., & Yzerbyt, V. (2005). When moderation is mediated and mediation is moderated, *Journal of Personality and Social Psychology*, 89, 852-863.

Baron, R.M. & Kenney, 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.

Cohen, J. (1992), "A Power Primer," *Psychological Bulletin*, 112, 155-159.

Lykken, D. T. (1968), "Statistical Significance in Psychological Research," *Psychological Bulletin*, 70, 151-159.

Prentice, D.A., & Miller, D.T. (1992). When small effects are impressive. *Psychological Bulletin*, 112, 160-164.

Sternthal, Brian, Alice M. Tybout, and Bobby J. Calder (1987), "Confirmatory Versus Comparative Approaches to Judging Theory Tests," *Journal of Consumer Research*, 14, 114-125.

Cook, Thomas D. and Donald T. Campbell, [*Quasi-Experimentation: Design and Analysis Issues for Field Settings*](#), 1979, Houghton Mifflin. pp. 39-50

Rosenthal, R. and MR DiMatteo (2001) [Meta-analysis: recent developments in quantitative methods for literature reviews](#), *Annual Review of Psychology*, 52 (59-82).

Rosenthal, R. (1994). [Science ethics in conducting, analyzing, and reporting psychological research](#). *Psychological Science*, 5, 127-134.

Finkel, E. J., Eastwick, P. W., & Reis, H. T. (2015). [Best research practices in psychology: Illustrating epistemological and pragmatic considerations with the case of relationship science](#). *Journal of personality and social psychology*, 108(2), 275.

Ioannidis, J. P. (2005). [Why most published research findings are false](#). *PLoS Med*, 2(8), e124.

Simonsohn, U. (2012). [Just post it: The lesson from two cases of fabricated data detected by statistics alone](#). *Psychological Science*

Kerr, N. L. (1998). [HARKing: Hypothesizing after the results are known](#). *Personality and Social Psychology Review*, 2, 196-217.

Bem, D. (2003). [Writing the empirical journal article](#). In J.M. Darley, M.P. Zanna, & H.L. Roediger III (Eds.), *The complete academic* (2nd Ed., pp. 185-219). Washington: APA .

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). [Addressing moderated mediation hypotheses: Theory, methods, and prescriptions](#). *Multivariate Behavioral Research*, 42(1), 185-227

Lynch, John G., Eric T. Bradlow, Joel C. Huber and Donald R. Lehmann (2015). Reflections on the replication corner: In praise of conceptual replications. *International Journal of Research in Marketing*, 32(4).

Week 6: Tuesday, October 12th: Meta Analyses, Replications, Research Integrity, Writing a Research Article (Guest: Professor Don Lehmann)

Idea 2 is due. Submit slide deck on Canvas before class.

Meta Analyses

Lehmann, Donald R. [What is Meta Analysis](#)

Reproducibility

Lynch, John G., Eric T. Bradlow, Joel C. Huber and Donald R. Lehmann (2015). [Reflections on the replication corner: In praise of conceptual replications](#). *International Journal of Research in Marketing*, 32(4).

<http://retractionwatch.com/2017/02/20/placed-much-faith-underpowered-studies-nobel-prize-winner-admits-mistakes/>

Research Integrity

Rosenthal, R. (1994). [Science ethics in conducting, analyzing, and reporting psychological research](#). *Psychological Science*, 5, 127-134.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). [False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant](#). *Psychological Science*, 22, 1359-1366

Nosek, B. A., & Lindsay, D. S. (2018). [Preregistration becoming the norm in psychological science](#). *APS Observer*, 31(3).

Shiffrin, Richard, [Complexity of science v. #PSprereg?](#)

<https://www.theguardian.com/science/head-quarters/2017/mar/02/fresh-concerns-raised-over-academic-conduct-of-major-us-nutrition-and-behaviour-lab>

<https://www.thecut.com/2017/02/cornells-food-and-brand-lab-has-a-major-problem.html>

<http://retractionwatch.com/2017/02/20/placed-much-faith-underpowered-studies-nobel-prize-winner-admits-mistakes/>

Detecting Fraud

Simonsohn, U. (2012). [Just post it: The lesson from two cases of fabricated data detected by statistics alone](#). *Psychological Science*

Popular Diet-Science Lab Has Been Publishing Really Shoddy Research

Writing

Kerr, N. L. (1998). [HARKing: Hypothesizing after the results are known](#). *Personality and Social Psychology Review*, 2, 196-217. SKIM.

Bem, D. (2003). [Writing the empirical journal article](#). In J.M. Darley, M.P. Zanna, & H.L. Roediger III (Eds.), *The complete academic* (2nd Ed., pp. 185-219). Washington: APA . SKIM.

Discussion

What is meta-analysis?

What are the different types of replications? If a paper cannot be replicated, what conclusions can you draw?

Consider the research integrity issues raised in some of the readings. What is your view? How can science regain trust?

Does it matter which journals one publishes in? How do you choose a journal?

In-class individual assignment

Present Idea 2 in class (10-minutes).

In-class group assignment

Watch the Milgram experiment at <https://www.youtube.com/watch?v=xOYLcy5PVgM>

What are your reactions? Is the experiment ethical? What are possible negative consequences?

What are the benefits to society? Do the costs outweigh the benefits?

Additional recommended readings

Singleton and Straits, Ch. 12, Ch. 17

Szollosi, A., Kellen, D., Navarro, D. J., Shiffrin, R., van Rooij, I., Van Zandt, T., & Donkin, C. (2019). [Is preregistration worthwhile?](#). *Trends in Cognitive Sciences*.

Finkel, E. J., Eastwick, P. W., & Reis, H. T. (2015). [Best research practices in psychology: Illustrating epistemological and pragmatic considerations with the case of relationship science](#). *Journal of personality and social psychology*, 108(2), 275.

John, L., et al. (2012). Measuring the Prevalence of Questionable Research Practices With Incentives for Truth Telling. *Psychological Science*, 23(5) 524–532

Schwarz, N. and K. Fiedler (2016). Questionable research practices revisited, *Social Psychological and Personality Science*, 53 7(1):45-52

- Van Bavel, J. J., Mende-Siedlecki, P., Brady, W. J., & Reinero, D. A. (2016). Contextual sensitivity in scientific reproducibility, *Manuscript resubmitted to PNAS*.
- Bakker, M., van Dijk, A., & Wicherts, J. M. (2012). The rules of the game called psychological science. *Perspectives on Psychological Science, 7*, 543-554.
- Nosek, B. A., Spies, J. R., & Motyl, M. (2012). Scientific utopia II. Restructuring incentives and practices to promote truth over publishability. *Perspectives on Psychological Science, 7*, 615-631.
- Funder, D. C., Levine, J. M., Mackie, D. M., Morf, C., Sansone, C., Vazire, S., & West, S. G. (2014). Improving the dependability of research in personality and social psychology: Recommendations for research and educational practice. *Personality and Social Psychology Review, 18*, 3-12.
- Maner, J. K. (2014). Let's Put Our Money Where Our Mouth Is If Authors Are to Change Their Ways, Reviewers (and Editors) Must Change With Them. *Perspectives on Psychological Science, 9*(3), 343-351.
- Daft, Richard L. (1985), "Why I recommended that your manuscript be rejected and what you can do about it," in Cummins and Frost, eds., *Publishing in the Organizational Sciences*, 193-209, Homewood, IL: Irwin.
- Rozin, Paul (2001), "Social Psychology and Science: Some Lessons From Solomon Asch," *Personality and Social Psychology Review, 5*:1, 2-14.
- Wilk R.R. (2001), "The Impossibility and Necessity of Re-Inquiry: Finding Middle Ground in Social Science," *Journal of Consumer Research, 28*:308-312.
- Hunter, J.E. (2001), "The Desperate Need for Replications," *Journal of Consumer Research, 28*: 149-158.

Idea No. 1

Problem and Theory

This assignment asks you to define a research problem, outline a theoretical explanation for the phenomenon at the heart of the research problem, and develop several testable hypotheses. You should try to develop the theoretical underpinnings of your research problem sufficiently so that it can guide future research design decisions and the development of additional hypotheses.

Please prepare a deck of slides for this idea. You will also present this in class on Tuesday, September 21st. The following format may be useful:

- I. Research question: This typically takes the form, “Why is it that?” or “Under what conditions does ...?”
 - a. Define the constructs of interest. Why is it interesting to study this relationship? Why would you research make a theoretical or substantive contribution? What gap does your work fill?
 - b. What does prior literature have to say about the relationship between the constructs of interest?
 - c. Provide a general argument for what you think is going on. This should be a rationale for the theory.
 - d. Present a hypothesis, or set of hypotheses, that are bivariate correlational statements and (usually) have a cause-and-effect logic (i.e., “If X, then Y”).
 - e. Summarize your rationale as best you can with a set of more abstract propositions from which the hypotheses can be deduced. In other words, try to state in axioms the theory that is the basis for these hypotheses.

- II. Measurement: How do you intend to manipulate and/or measure your independent and dependent variables?
 - a. Identify the independent and dependent variable(s) and discuss issues of construct validity and reliability of your intended manipulations and measurement.
 - b. Include the scale development details for your dependent variable.

- III. Citation: Your presentation should include citations to relevant literatures as relevant in your slides. Also, please list 15 relevant references in an appendix (including papers cited previously in the presentation as well as new ones).

Idea No. 2

Experimental Design

Submit a slide deck on your revisions to idea 1 or a new idea, including methodological details this time. If you decide to change the research question, you will need to re-do the first part of the presentation and include it in the deck. Include your initial slide deck for idea 1 and add details on the experimental or quasi-experimental design you will use to test your hypotheses. What will your procedure look like. What will be the predicted results? How will you rule out alternative explanations? Submit before class on October 12th on Canvas.

Suggested topics to include in your presentation:

1. Definition of the unit of analysis and each of the variables involved in the design.
2. Describe the design in experimental jargon (e.g., 2 x 2 between-subjects, or 2 x 2 mixed design). Why did you select it?
3. Discuss validity issues that may arouse criticism.
4. Describe your experiment in practical terms. How will it be organized? What is the procedure? The manipulations and measures?
5. How will you determine if your hypotheses are supported? What are the possible outcomes? What do the predicted results look like (graph them)?
6. What are the design's weaknesses? How will you rule out alternative explanations.

Research Proposals

Decide on the specific research question you will tackle. Ideally, you will build on your previous submissions (e.g., ideas 1 and 2). Elaborate on the literature review that you started in Idea 1. Select the appropriate method for the specific question based on class discussions. Write a detailed method section so that any other researcher can implement the research and collect data. There is no page limit but such proposals are usually around 20 to 25 pages long. You can collect pretest or pilot data and also begin data collection for your experiments and report preliminary results. You are not required to report data or results, however. Your research proposal should contain the following:

1. A clear statement of the issue and why it merits being researched.
2. A brief *integrative* review of the relevant literature indicating how your research will extend this literature.
3. A clear articulation of the concepts, relationships, and assumptions involved (Hypotheses).
4. A clear statement of how the concepts will be operationalized (i.e., measured or manipulated).
5. A description and justification of the research method, sample, and setting.
6. A brief description of the procedure (i.e., sequence of events).
7. A description of the measurement approach including tests for reliability and validity. Include questionnaires as appendices.
8. A discussion of proposed data analyses to test each hypothesis and how your hypotheses translate into expected results. Construct tables/graphs to show expected results.
9. A General Discussion section detailing contributions and limitations of this research and possible areas for future research.