Research Methods for Social and Organizational Psychology
PSYC 737
Spring 2024
Syllabus

Professor: James A. Grand
Course Time: Thursday 2:00-4:30pm
Location: 1228 Biology-Psychology
Office: 3147A Biology-Psychology
Office Hours: By appointment
Contact: xxxxxxxxx

Course Description

Psychological science is built upon systematic efforts to identify, understand, and explain phenomena involving human affect, behavior, and cognition in terms of cause-effect relations. Social and organizational psychology tends to emphasize how interactions among intrapersonal, interpersonal, and environmental processes/factors contribute to these relations. Advancing scientific understanding of these phenomena necessitates conducting rigorous research that contributes to accurate knowledge. Arguably the most significant choices relevant to achieving this goal concern *theory development* (constructing and improving explanatory accounts for phenomena), *research design* (techniques and methods used to collect observations/data), and *measurement* (processes and techniques by which observations are assessed, quantified, and documented). The purpose of this course is to develop the requisite knowledge and critical thinking skills necessary to make informed decisions within these domains to perform and interpret research in social and organizational psychology.

This class is a participative seminar; a self-guided learning experience. You should not approach this class as one in which the professor makes all the decisions about what content is most important or how that content applies to your independent research. My role will be to facilitate and participate in the learning process by serving as a resource and guide. Your task is to contribute to the learning experience through discussion of course readings, completion of homework and exercises, and actively sharing your questions and reactions during our meetings. In addition, *a key goal of this class is to make significant progress developing your Master's thesis proposal*; ideally, you should aim to have the focal question(s), hypotheses, and methodology for your thesis completed by the end of this course.

Course Objectives

The overarching goal for this course is to develop expertise in the development, production, and evaluation of rigorous psychological research.

By the end of this course, you should be able to:

1. Understand the connections between theory, methods, and the advancement of knowledge
2. Understand the strengths and limitations of different research designs and methodologies
3. Understand the fundamentals of validity, reliability, and generalizability and how to conduct quantitative analyses related to evaluating the psychometric quality of psychological measures
4. Use your knowledge of research design and measurement to critically evaluate research and develop your own research

Course Management

I will use Canvas (www.elms.umd.edu) to post all materials and grades for the course. Unless otherwise instructed, you will upload all documents that you are required to turn into me using Canvas as well. If you have any troubles accessing this space, please let me know ASAP.

Evaluation and Course Requirements

1. *Class Engagement & Preparation (20%)*
   Active participation and preparation is a key component of the learning experience in this course—you need to acquire content, make sense of it, and then be prepared to contribute to the sensemaking of all members in the course. Students are expected to attend every class meeting, read all assigned materials prior to class, and actively discuss and critically decompose the focal topic. The structure for most class meetings will typically involve the following:
   a. Guided lecture and discussion of the day's topic
   b. Student-led discussion of articles and/or exercises relating to the topic of the day
   c. Student presentations on special topics and/or progress on research proposals
   It is not important every comment you make be a deep insight or ground-breaking revelation; what is important is that you come to class prepared and attempt to make consistent contributions to our collective learning. This evaluation criterion will be used to capture your engagement in active, high-quality participation and critical evaluation of primary topics in the class.

2. *Homework & Assignments (20%)*
   You will be asked to complete a variety of exercises related to the course content. The purpose of these assignments is for you to practice applying the content and ideas covered in the course and begin to develop competence participating in these aspects of the research process. In some cases, we may begin and complete portions of the exercise during class; in other cases, you will be required to complete the assignment entirely outside of class either before or after we've discussed the material. This evaluation criterion will be used to assess the development of your knowledge and skills in conducting, evaluating, and interpreting psychological research.

3. *Research Proposal & Presentations (45%)*
   You will produce a written research proposal and present these ideas to the class. Details on the structure and requirements for the written paper are provided on the next page. The purpose of this proposal is to give you an opportunity to develop an original research idea on a topic of interest which ideally serves as the basis for your Master's thesis project. This evaluation criterion captures your ability to develop independence and expertise as a researcher, as well as demonstrate your capacity to integrate knowledge and theory from psychological sciences into your domain of expertise.

4. *Final Exam (15%)*
   There will be one exam for the class held during the final exam period of the fall semester (specific date TBD). The exam will consist of short-answer/essay questions on the three main topic areas of the course (theory & philosophy of science, psychometrics, and research design). Unless otherwise specified, the exam will be administered as a take-home exam. The exam is to be completed individually, but you may use your notes and articles from class to answer the questions. This evaluation criterion reflects your understanding of the knowledge you have learned in the course as well as your capacity to coherently and competently explain fundamental concepts.

Final course grades will be calculated by weighting the total number of points earned within each of the four assignment categories by their respective percentages:

$$Final\ Grade = .2(Class\ engagement) + .2(Assignments) + .45(Proposal\ \&\ Presentation) + .15(Final\ exam)$$

The table below will be used to assign grades in the course based on the above computation and assuming a 100% maximum. If you accumulate the percentage points listed below, you are guaranteed that grade in the course. When required, percentage points get rounded to the nearest whole number.

Final Grade Conversions		
Percentage	**Grade**	**GPA**
97%+	**A+**	**4.0**
94%-96.9%	**A**	**4.0**
90%-93.9%	**A-**	**3.7**
87%-89.9%	**B+**	**3.3**
84%-86.9%	**B**	**3.0**
80%-83.9%	**B-**	**2.7**
77%-79.9%	**C+**	**2.3**
74%-76.9%	**C**	**2.0**
70%-73.9%	**C-**	**1.7**
67%-69.9%	**D+**	**1.3**
64%-66.9%	**D**	**1.0**
60%-63.9%	**D-**	**0.7**
0%-59.9%	**F**	**0.0**

Research Proposal

The written paper for this class will require you to develop an independent research proposal on a topic of personal interest. ***Ideally, this paper will serve as the foundation for your Master's thesis proposal***. Consequently, I strongly suggest you select a focus for the paper that is related to your main interests and use this as an opportunity to develop the theoretical rationale and methods you will use to support and collect data for your thesis research.

Your final paper should be written as a research proposal and include the following:

- An introduction that describes the focal topic of the research, its relevance/significance, and a (brief) review of the relevant research literature.
- One or more testable hypotheses or research questions. This section should provide definitions of the key constructs, describe the model/hypotheses you intend to test, and summarize theory/rationale supporting your hypotheses from the relevant research literature.
- A proposed methods section for conducting a study to test the proposed hypotheses. This section should provide a description of the participants you intend to include in the study, the study procedures, and (ideally) the measures you will use to collect observations.
- A hypothetical discussion section that (a) summarizes implications from the study if results *were* consistent with the predictions and if the results *were not* consistent with the predictions, and (b) discusses potential threats to validity that your study may face.

There are no requirements/limitations on the length of the paper, though I anticipate that papers will be in the neighborhood of 20 double-spaced pages of text (not including title page, abstract, or references). The paper should conform to APA guidelines for formatting and construction.

From today, you have 14 weeks to complete the paper. Major deadlines related to the project are listed below; adhering to these is required and should help keep you on track. A significant focus of this course is the development of your proposal, and we will devote in-class time to discussing your papers.

- **Week 5 (Feb 20):** A two-page summary of your focal research idea is due and will be turned in through Canvas. One page should summarize the idea and 1-2 hypotheses or specific research questions, while the second page can provide preliminary thoughts concerning the research design and data collection strategy. Everyone needs to be prepared to comment and provide constructive feedback on their classmates' proposals.
- **Week 11 (Apr 4):** A preliminary draft of your proposal is due and will be turned in through Canvas. This draft should include a literature review, final hypotheses, and a proposed method section. The literature review needs to justify why your study is important and why your hypotheses are reasonable. You must describe your methodology with sufficient information so that it can be carried out by your colleagues after only reading your proposal. Study the structure of published research articles in top tier journals to learn the accepted structure of technical articles. The draft should be approximately 12 to 15 pages of text (not counting references).
- **Week 15 (May 2):** The final draft of your proposal is due and will be turned in through Canvas. This version should be the final complete version and include all sections of the proposal (introduction, hypotheses, methods, and discussion). You should be prepared to present and discuss your final research proposal in class on May 2.

Additionally, I generally attempt to meet twice with each student over the course of the semester to discuss the research proposal. The purpose of these meetings is to provide an opportunity for you to discuss your ideas, ask questions, and seek feedback on your proposal as it develops. These meetings are typically scheduled near the beginning of March (Week 6-7) and beginning of April (Week 11-12). Please come prepared to lead the discussion on your proposal during these meetings.

Course Rules and Policies

Class Attendance and Make-up Policy:
Documented attendance records will not be taken for this course; however, all students are expected to attend every class session and failure to attend to class will influence your participation grade.

Policies for missing or late assessments in this class are as follows:
1. *Homework assignments*—Students will not be allowed to make-up missed or late assignments UNLESS prior permission has been obtained. Permission may only be granted for those who contact the instructor PRIOR to the scheduled date.
2. *Research Proposal*—The review paper is considered a "major scheduled grading event" as defined by the University of Maryland. In this case, you may turn in the paper late, but 5% will be deducted from the final grade for each day late UNLESS arrangements have been made PRIOR to the scheduled due date.
3. *Final Exam*—The final exam is considered a "major scheduled grading event" as defined by the University of Maryland. In this case, extensions or make-up exams will only be permitted if the student provides documentation of a university approved excuse for absences or an arrangement has been made with the instructor PRIOR to the scheduled due date.

Academic Honesty:
Unless authorized by me, all assessments (including the homework assignments, research proposal, and final exam) must represent each student's own knowledge and ideas in his/her own words. Students who violate the University of Maryland's rules and policies may receive a penalty to their grade, including but not limited to a failing grade on the assignment or in the course.

Overview of Topics (Subject to change)

Week	Date	Topic	Unit
1.	1/25	Course Overview & Syllabus	
2.	2/1	Philosophy of Science and Inferential Reasoning	**Theory Development**
3.	2/8	Theory in Psychology	
4.	2/15	Theory Development	
5.	2/22	Formal Theory and Model-Building **DUE 2/20: Two-page summary of research idea**	
6.	2/29	Experiments & Randomized Designs	**Research Design & Data Collection Methods**
7.	3/7	Non-randomized Designs / Big Data Research	
8.	3/14	Qualitative & Observational Research	
9.	3/21	*NO CLASS – Spring Break*	
10.	3/28	Odds 'n' Ends on Doing Research	
11.	4/4	Foundations of Measurement **DUE 4/4: First draft of paper**	**Measurement & Psychometrics**
12.	4/11	Reliability	
13.	4/18	*NO CLASS*	
14.	4/25	Validity	
15.	5/2	Final paper discussion & presentation **DUE 5/2: Final draft of paper**	
16.	5/9	Final paper discussion & presentation (if needed)	
17.	Finals Week	**Final exam**	

Reading List

1. **Course Overview and Syllabus**

   No Readings

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2. **Philosophy of Science and Inferential Reasoning**

   Godfrey-Smith (2003) – Chapters 1-6

   Minnameier, G. (2010). The logicality of abduction, deduction, and induction. In M. Bergman, S. Paavola, A.-V. Pietarinen, & H. Rydenfelt (Eds.), *Ideas in action: Proceedings of the Applying Peirce Conference* (pp. 239-251). Helsinki, Finland: Nordic Pragmatism Network.

   [Optional] Bamberger, P.A. (2018). AMD—Clarifying what we are about and where we are going. *Academy of Management Discoveries, 4*, 1-10.

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3. **Theory in Psychology**

   Newell, A. (1973). You can't play 20 questions with nature and win: Projective comments on the papers of this symposium. In W.G. Chase (Ed.), *Visual information processing: Proceedings of the eighth annual Carnegie symposium on cognition, held at the Carnegie-Mellon University, Pittsburgh, Pennsylvania, May 19, 1972* (pp. 283–305). Academic Press.

   Meehl, P.E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. *Journal of Consulting and Clinical Psychology, 46*, 806-834.

   Gigerenzer, G. (2010). Personal reflections on theory and psychology. *Theory & Psychology, 20*, 733-743.

   Kruglanski, A.W. (2001). That "vision thing": The state of theory in social and personality psychology at the edge of the new millennium. *Journal of Personality and Social Psychology, 80*, 871-875.

   Hambrick, D.C. (2007). The field of management's devotion to theory: Too much of a good thing? *Academy of Management Journal, 50*, 1346-1352.

   [Optional] Meehl, P.E. (1967). Theory-testing in psychology and physics: A methodological paradox. *Philosophy of Science, 34*, 103-115.

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4. **Theory Development**

   Simon, H. A. (1992). What is an "explanation" of behavior? *Psychological Science, 3*, 150-161.

   Sutton, R.I. & Staw, B.M. (1995). What theory is not. *Administrative Science Quarterly, 40*, 371-384.

   Frankenhuis, W.E., Panchanathan, K., & Smaldino, P.E. (2023). Strategic ambiguity in the social sciences. *Social Psychological Bulletin, 18*, 1-25.

   Kuljanin, G., Braun, M.T., Grand, J.A., Olenick, J.D., Chao, G.T., & Kozlowski, S.W.J. (working paper). Advancing organizational science with computational process theories.

Borsboom, D., van der Maas, H.L.J., Dalege, J., Kievit, R.A., & Haig, B.D. (2021). Theory construction methodology: A practical framework for building theories in psychology. *Perspectives on Psychological Science, 16*, 756-766.

[Optional] Haig, B.D. (2009). Inference to the best explanation: A neglected approach to theory appraisal in psychology. *American Journal of Psychology, 122*, 219-234.

[Optional] Pentland, B.T. (1999). Building process theory with narrative: From description to explanation. *Academy of Management Review, 24*, 711-724.

5. **Formal Theory and Model-Building**

Smaldino, P.E. (2017). Models are stupid, and we need more of them. In R.R. Vallacher, A. Nowak, & S.J. Read (Eds.), *Computational social psychology* (pp. 311–331). Psychology Press.

Guest, O. & Martin, A.E. (2021). How computational modeling can force theory building in psychological science. *Perspectives on Psychological Science, 16*, 789-802.

Davis, J.P., Eisenhardt, K.M., & Bingham, C.B. (2007). Developing theory through simulation methods. *Academy of Management Review, 32*, 480-499.

Ballard, T., Palada, H., Griffin, M., & Neal, A. (2021). An integrated approach to testing dynamic, multilevel theory: Using computational models to connect theory, model, and data. *Organizational Research Methods, 24*, 251-284.

Grand, J.A., Braun, M.T., & Kuljanin, G. (working paper). Hello world! Building computational models to represent social and organizational theory.

[Optional] Grahek, I., Schaller, M., & Tackett, J.L. (2021). Anatomy of a psychological theory: Integrating construct-validation and computational-modeling methods to advance theorizing. *Perspectives on Psychological Science, 16*, 803-815.

*Example models – We will use the following as stimuli to discuss key concepts in computational theory and model-building rather than the substantive conclusions or conceptual merits of either article per se…so when reading, I want you to spend your time considering (a) how the **logic/thinking** reflected in these theories differs from narrative theorizing/factor thinking and (b) how these examples **turn ideas about a phenomenon into a formal theory/model**.*

[Skim] March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science, 2*, 71-87.

[Skim] Grand, J.A., Braun, M.T., Kuljanin, G., Kozlowski, S.W.J., & Chao, G.T. (2016). The dynamics of team cognition: A process-oriented theory of knowledge emergence in teams [Monograph]. *Journal of Applied Psychology, 101,* 1353-1385.
- *NOTE: Can read only 1353-1361, and Appendices A & B*

6. **Experiments & Randomized Designs**

Shadish, Cook, & Campbell (2002) – Chapters 1-3, 8

Hanges, P.J. & Wang, M. (2012). Seeking the holy grail in organizational science: Uncovering causality through research design. In S.W.J. Kozlowski (Ed.), *The Oxford Handbook of Organizational Psychology* (pp. 79-116). New York: Oxford University Press.
  - *NOTE: p. 90-101 summarize the Shadish et al. readings for this week and so can be ignored*

Fisher, A.J., Medaglia, J.D., & Jeronimus, B.F. (2018). Lack of group-to-individual generalizability is a threat to human subjects research. *Proceedings of the National Academies of Science, 115*, E6106-E6115.

[Optional] Spencer, S.J., Zanna, M.P., & Fong, G.T. (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.

7. **Non-randomized Designs / "Big Data" Research**

Non-randomized Designs
Shadish, Cook, & Campbell (2002) – Chapters 4-5

Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly, 21*, 1086-1120.

Grant, A.M., & Wall, T.D., (2009). The neglected science and art of quasi-experimentation: Why-to, When-to, and How-to advice for organizational researchers. *Organizational Research Methods, 12,* 653-686.

Big Data Research
Oswald, F.L., Behrend, T.S., Putka, D.J., & Sinar, E. (2020). Big data in Industrial-Organizational Psychology and Human Resource Management: Forward progress for organizational research and practice. *Annual Review of Organizational Psychology and Organizational Behavior, 7*, 505-533.

Coveney, P.V., Dougherty, E.R., & Highfield, R.R. (2016). Big data need big theory too. *Philosophical Transactions of the Royal Society A: Mathematical, Physical, and Engineering Sciences, 374*(2080), 20160153.

[Optional] Stanton, J.M. (2014). Data mining: A practical introduction for organizational researchers. In J.M. Cortina & R.S. Landis (Eds.), *Modern research methods for the study of behavior in organizations* (pp. 199-230). New York, NY: Routledge.

8. **Qualitative & Observational Research**

Gephart, R.P., Jr. (2014). Doing research with words: Qualitative methodologies and Industrial/Organizational Psychology. In J.M. Cortina & R.S. Landis (Eds.), *Modern research methods for the study of behavior in organizations* (pp. 265-317). New York, NY: Routledge.

Locke, K. (2002). The grounded theory approach to qualitative research. In. F. Drasgow & N. Schmitt (Eds.), *Measuring and analyzing behavior in organizations: Advances in measurement and data analysis* (pp. 17-43). San Francisco: Jossey-Bass.

Brauner, E. (2018). Coding interaction: A technical introduction. In E. Brauner, M. Boos, & M. Kolbe (Eds.), *The Cambridge handbook of group interaction analysis* (pp. 165-190). Cambridge, UK: Cambridge University Press.

Tschan, F., Zimmermann, J., Semmer, N.K. (2018). Rules of coding scheme development. In E. Brauner, M. Boos, & M. Kolbe (Eds.), *The Cambridge handbook of group interaction analysis* (pp. 191-207). Cambridge, UK: Cambridge University Press.

Reed, N., Metzger, Y., Kolbe, M., Zobel, S., & Boos, M. (2018). Unitizing verbal interaction data for coding: Rules and reliability. In E. Brauner, M. Boos, & M. Kolbe (Eds.), *The Cambridge handbook of group interaction analysis* (pp. 208-226). Cambridge, UK: Cambridge University Press.

[Optional] Bakeman, R. (2000). Behavioral observation and coding. In H.T. Reis & C.M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 138-159). Cambridge, UK: Cambridge University Press.

9. *NO CLASS – Spring Break*

10. **Odds 'n' Ends on Doing Research**

Tradeoffs & Realities

McGrath, J.E. (1982). Dilemmatics: The study of research choices and dilemmas. In J.E. McGrath, J. Martin, & R.A. Kulka (eds.), *Judgment calls in research* (pp. 69-102). Beverly Hills, CA: Sage.

[Optional] Martin, J. (1982). A garbage can model of the research process. In J.E. McGrath, J. Martin, & R.A. Kulka (Eds.), *Judgment calls in research* (pp. 17-40). Beverly Hills, CA: Sage.

Professional Ethics

Fried, A.L. (2012). Ethics in psychological research: Guidelines and regulations. In H. Cooper (Ed.) *The APA Handbook of Research Methods in Psychology. Vol 1: Foundation, Planning, Measures and Psychometrics* (pp. 55-73). Washington, DC: American Psychological Association.

[Optional] Lefkowitz, J. (2021). Forms of ethical dilemmas in industrial-organizational psychology. *Industrial and Organizational Psychology, 14*, 297-319.

[Skim as interested] Lowman, R.L. (Ed.). (1998). *The ethical practice of psychology in organizations.* (Cases: 13, 17, 18, 20, 21, 23, 29, 30, 31, 33, 38, 44). Washington, DC: American Psychological Association.

Robust Science

Grand, J.A., Rogelberg, S.G., Allen, T.D., Landis, R.S., Reynolds, D., Scott, J.C., Tonidandel, S., & Truxillo, D.M. (2018). A systems-based approach to fostering robust science in industrial-organizational psychology. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 11*, 4-42.

Writing & Publishing Research
NOTE: We will use the "jigsaw" approach for discussing these articles in class such that different individuals will be assigned to summarize/distill a subset of the following readings for the rest of the class. However, I still recommend you read each of these papers as well. There is no magic formula/recipe for writing or publishing research, but there are some helpful/common themes that can be gleaned...consider these readings as examples rather than de facto *procedures.*

Colquitt, J.A., & George, G. (2011). Publishing in AMJ—Part 1: Topic choice. *Academy of Management Journal, 54*, 432-435.

Bono, J.E., & McNamara, G. (2011). Publishing in AMJ—Part 2: Research design. *Academy of Management Journal, 54*, 657-660.

Grant, A.M., & Pollock, T.G. (2011). Publishing in AMJ—Part 3: Setting the hook. *Academy of Management Journal, 54*, 873-879.

Sparrowe, R.T., & Mayer, K.J. (2011). Publishing in AMJ—Part 4: Grounding hypotheses. *Academy of Management Journal, 54*, 1098-1102.

Zhang, Y., & Shaw, J.D. (2012). Publishing in AMJ—Part 5: Crating the methods and results. *Academy of Management Journal, 55*, 8-12.

Geletkanycz, M., & Tepper, B.J. (2012). Publishing in AMJ—Part 6: Discussing the implications. *Academy of Management Journal, 55*, 256-260.

11. **Foundations of Measurement**

Traub, R.E. (1994). The basic theory. *Reliability for the Social Sciences: Theory and Applications*. (pp. 18-37). Thousand Oaks, CA: SAGE.

Harvey, R.J., & Hammer, A.L. (1999). Item response theory. *The Counseling Psychologist, 27*, 353-383.

Ellis, B.B., & Mead, A.D. (2002). Item analysis: Theory and practice using classical and modern test theory. In S.G. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology* (pp. 324-343). Oxford, UK: Blackwell Publishers.

Hinkin, T.R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1*, 104-121.

Heggestad, E.D., Scheaf, D.J., Banks, G.C., Hausfeld, M.M., Tonidandel, S., & Williams, E.B. (2019). Scale adaptation in organizational science research: A review and best-practice recommendations. *Journal of Management, 45*, 2596-2627.

[Optional] Borsboom, D., Mellenbergh, G.J., & van Heerden, J. (2003). The theoretical status of latent variables. *Psychological Review, 110,* 203-219.

12. **Reliability**

Shrout, P.E & Lane, S.P. (2012). Reliability. In H. Cooper (Ed.), *The APA Handbook of Research Methods in Psychology. Vol 1: Foundation, Planning, Measures and Psychometrics* (pp. 643-660). Washington, DC: American Psychological Association.

Cortina, J. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*, 98-104.

Cho, E., & Kim, S. (2015). Cronbach's coefficient alpha: Well known but poorly understood. *Organizational Research Methods, 18*, 207-230

Gao, X., & Harris, D.J. (2012). Generalizability theory. In H. Cooper (Ed.), *The APA Handbook of Research Methods in Psychology. Vol 1: Foundation, Planning, Measures and Psychometrics* (pp. 661-681). Washington, DC: American Psychological Association.

McGraw, K.O., & Wong, S.P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods, 1*, 30-46.

[Optional] James, L.R., Demaree, R.G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology, 69*, 85-98.

13. *NO CLASS*

14. **Validity**

Grimm, K.J., & Widaman, K.F. (2012). Construct validity. In H. Cooper (Ed.), *The APA Handbook of Research Methods in Psychology. Vol 1: Foundation, Planning, Measures and Psychometrics* (pp. 621-642). Washington, DC: American Psychological Association.

Borsboom, D., Mellenbergh, G.J., & van Heerden, J. (2004). The concept of validity. *Psychological Review, 111*, 1061-1071.

Podsakoff, P.M., MacKenzie, S.B., & Podsakoff, N.P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539-569.

Vandenberg, R.J., & Lance, C.E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*, 4-70.

15. **Final paper discussion & presentation**

No Readings

16. **Final paper discussion & presentation** (if needed)

No Readings

17. **Final Exam**

Date of final exam: _____