PSY 779

Current Methods in Psychology

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| **Instructor:** | Dr. Will Gervais |
| **Office:** | 104 Kastle |
| **Email:** | [will.gervais@uky.edu](mailto:will.gervais@uky.edu) |
| **Office hours:** | by appointment |

**Class:** Wednesday 1-3:30, McVey 72

# Course goals:

So, there’s a lot going on in the world of psychology methods. Is fraud rampant? How about other “grey area” shenanigans? Why is this happening? What do we do about it? Are we analyzing our data properly? What if I want to leave the lab? How do I get a job? How do I manipulate variables more sexily? How do I measure things more reliably? Am I okay just sampling undergrads at UK? Should I be preregistering hypotheses? Is all this just much ado over nothing, and the status quo is perfectly fine? Is n= 25 small, or laughably small?

I can’t promise to answer any of these questions. But I can promise that we’ll discuss them plenty. Hopefully, this will give everyone the opportunity to engage with current methods issues in our field. As a result, everyone should be able to move forward making informed, conscious choices about how they do research (no matter where they fall on these various questions).

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| Course Description: |
| A grad seminar where we tackle the questions of ALL THINGS METHODS in current psychology. We’ll grapple with many of the issues that have dominated the field over the last ~10 years, and also provide some tangible and practical advice on using our methods to their fullest potential. Prerequisites: Nope. |
| Student Learning Outcomes: |
| After completing this course, the student will be able to: |
| 1. Identify key historical trends in recent psychology methods 2. Critically evaluate current debates 3. Describe, apply, and integrate current methods techniques 4. Approach debates in the field in a conscious manner 5. Do the best research ever |
| Required Materials: Dienes, Z. (2008). *Understanding psychology as a science: An introduction to scientific and statistical inference*. Palgrave Macmillan.  All other course readings will be provided |

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| Description of Course Activities and Assignments |
| In class, we’ll spend most of the time discussing readings. Each week, every student will have to submit 3 discussion questions via Blackboard.  Throughout the semester, students will take turns serving as a discussion leader. Discussion leaders will collect and organize discussion questions. In addition, each discussion leader will have to find at least 1 relevant (non-assigned) paper to present alongside the assigned readings.  Beyond discussion, we will have a number of additional assignments.   1. p-curve. All students will have to p-curve something and present on it 2. NHST debate paper. All students will write a short paper taking a stand on debates over the use of NHST in psychological research 3. Current research practice summary 4. State of the Field/Methods Manifesto 5. Critique a classic! |
| Course Assignments |
| The point breakdown for each assessment is as follows: |
| * State of the Field paper- 30% * Discussion leading- 10% * Participation- 15% * Current practice paper- 10% * NHST paper- 15% * p-curve- 15% * Critique a classic!- 10% |
| Summary Description of Course Assignments |
| **Discussion Leading**. Every student will be the designated discussion leader for at least one class period (depending on numbers).  **Participation**. Participate. Participate in class discussions. Also, I’ll set up an online discussion board. Each week, everyone has to post 2+ questions and comment on 2+ other folks’ questions. Hopefully this’ll get conversation started.  **CP: Current Practice Paper**. **(1-25)** You will write a 1-2 page paper in which you describe the methods you (or your lab) currently employ. How do you determine sample size? Do you peek at data along the way? Do you have multiple DVs? Do you report all measures? Do you report all manipulations? Do you preregister anything? Do you just go with the flow in terms of whatever practices were in place in the lab when you came aboard? All responses confidential. This is a descriptive, not judgmental, exercise.  **NHST Paper**. **(3-1)** Write a short paper in which you take a stand on the use of NHST in psychology. Is it okay? Not okay? The worst? Not a problem? Should we adopt alternative approaches? Why or why not? What are their strengths andweaknesses?  **PC: P-curve**. **(4-12)** Everyone will p-curve something. Pick a p-curvable question. Preregister what you will be p-curving (inclusion criteria for studies, etc) either through OSF or AsPredicted. Then complete the disclosure table and run the p-curve. You must pick a question with at least 15 studies to curve. Then we’ll all present them as a class. You could p curve a researcher (your advisor would be fun), a topic/effect, a DV, or really anything. Just not yourself. Turn in your disclosure table and the p curve figure.  **CC: Critique a classic! (3-15)** Everyone will pick a classic social psych finding (from their own subfield, or just in general), and critique the methods (in a constructive manner). Do the conclusions—as typically summarized in textbooks, popular lore, etc—follow from the methods employed? If you wanted to rerun the study, what would you change?  **MM: State of the Field Paper/Methods Manifesto**. **(5-3)** In lieu of a final exam, you will write a 2 part paper in which you 1) diagnose the state of the field in terms of methodology, and 2) put together your own concrete methods manifesto. Part 1: What is working? What isn’t working? For things that aren’t working, suggest some solutions. How do we shift incentives? Is it top-down (e.g., journals changing policies) or bottom-up (e.g., as researchers, we come to evaluate and reward different practices)? Part 2: Imagine that you are starting a lab from scratch and have full control over all methods choices. What practices are encouraged? Required? Discouraged? Forbidden? Build the lab you want to see. Explain why you made the choices you did. |

# Tentative Schedule

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| Anything Due? | Dates | Topic | Readings |
|  | 1-11 | Introduction to course | Show up? |
|  | 1-17\*\* | Philosophy of science & social psych | Dienes ch 1-2 |
| CP | 1-25 | Research stages/types: Description, exploration, confirmation | Rozin 2009; Tukey 1980; Wagenmakers 2012 |
|  | 2-1 | Current issues: What got it all going? | Bem 1987; Bem 2011; Simonsohn 2013 |
|  | 2-8 | What’s (maybe) the state of our existing literature? | OSC 2015; Gilbert 2016; Klein 2014; Mitchell |
|  | 2-15 | But that was back then. We’re all cool now, right? All friends, just happily doing science together | Hagger 2015; Inzlicht blog post; Baumeister 2016; Fiske editorial; Social media is fun |
|  | 2-22 | How did we get here 1: Our stats? | Greenwald 1975; Dienes 2011; Wagenmakers 2011 & 2016 |
| NHST | 3-1 | How did we get here 2: Power? | Cohen 1962; Sedlmeier 1989; Fraley/Vazire 2014; Button 2013 |
|  | 3-8 | How did we get here 3: Transparency/flexibility? | Bones 2012; Kerr 1998; Simmons 2011; Gelman Loken 2013; Ferguson 2012 |
| CC | 3-15 | How did we get here 4: Incentives? | Bakker et al; Smaldino 2016; Gervais et al 2015 |
|  | 3-22 | **spring break** |  |
|  | 3-29 | Cool, we’ll fix it all with new stats and meta-analysis… | Cumming 2013; Schimmack 2012; Simonsohn et al 2014; Carter 2015 |
|  | 4-5 | …or will we? | In prep Schonbrodt et al; McShane; Inzlicht |
| PC | 4-12 | pcurve day. we’ll present the p-curves for chosen topics |  |
|  | 4-19 | Wait, is replicability really the only/primary/best goal? | Finkel et al in pres vs. LeBel Campbell; Schaller 2016 |
|  | 4-26 | And whatever happened to culture/generalizability? | Henrich et al 2010  Medin |
| MM | 5-3 | Wrapup. Can further discuss some innovations coming out of all this. Preregistration, registered reports, large-scale collaborations, preprints. And why we love/hate them. | |

**Readings**

Bakker, M., van Dijk, A., & Wicherts, J. M. (2012). The rules of the game called psychological science. *Perspectives on Psychological Science*, *7*(6), 543-554.

Baumeister, R. F. (2016). Charting the future of social psychology on stormy seas: Winners, losers, and recommendations. *Journal of Experimental Social Psychology*.

Bem, D. J. (1987). Writing the empirical journal. *The compleat academic: A practical guide for the beginning social scientist*, 171.

Bem, D. J. (2011). Feeling the future: experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of personality and social psychology*, *100*(3), 407.

Bones, A. K. (2012). We knew the future all along scientific hypothesizing is much more accurate than other forms of precognition—A satire in one part. *Perspectives on Psychological Science*, *7*(3), 307-309.

Carter, E. C., Kofler, L. M., Forster, D. E., & McCullough, M. E. (2015). A series of meta-analytic tests of the depletion effect: Self-control does not seem to rely on a limited resource. *Journal of Experimental Psychology: General*, *144*(4), 796.

Cohen, J. (1962). The statistical power of abnormal-social psychological research: a review. *The Journal of Abnormal and Social Psychology*, *65*(3), 145.

Cumming, G. (2013). The new statistics why and how. *Psychological science*, 0956797613504966.

Dienes, Z. (2008). *Understanding psychology as a science: An introduction to scientific and statistical inference*. Palgrave Macmillan.

Dienes, Z. (2011). Bayesian versus orthodox statistics: Which side are you on?. *Perspectives on Psychological Science*, *6*(3), 274-290.

Ferguson, C. J., & Heene, M. (2012). A vast graveyard of undead theories publication bias and psychological science’s aversion to the null. *Perspectives on Psychological Science*, *7*(6), 555-561.

Finkel Eastwick Reis. (2016). Replicability and Other Features of a High-Quality Science: Toward a Balanced and Empirical Approach.

Fiske, S. T. (2016?) Mob rule or wisdom of crowds?

Fraley, R. C., & Vazire, S. (2014). The N-pact factor: evaluating the quality of empirical journals with respect to sample size and statistical power. *PloS one*, *9*(10), e109019.

Gelman, A., & Loken, E. (2014). The Statistical Crisis in Science Data-dependent analysis—a “garden of forking paths”—explains why many statistically significant comparisons don't hold up. *Am Sci*, *102*(6), 460.

Gervais, W. M., Jewell, J. A., Najle, M. B., & Ng, B. K. (2015). A powerful nudge? Presenting calculable consequences of underpowered research shifts incentives toward adequately powered designs. *Social Psychological and Personality Science*, *6*(7), 847-854.

Gilbert, D. T., King, G., Pettigrew, S., & Wilson, T. D. (2016). Comment on "Estimating the reproducibility of psychological science." *Science, 351, 1037-a-1038-a.*

Greenwald, A. G. (1975). Consequences of prejudice against the null hypothesis. *Psychological Bulletin*, *82*(1), 1.

Hagger, M. S., Chatzisarantis, N. L., Alberts, H., Anggono, C. O., Batailler, C., Birt, A., & Zwienenberg, M. (2015). A multi-lab pre-registered replication of the ego-depletion effect. *Perspectives on Psychological Science*, 2.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world?. *Behavioral and brain sciences*, *33*(2-3), 61-83.

Inzlicht et al: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2659409>

Inzlicht blog post: http://michaelinzlicht.com/getting-better/2016/2/29/reckoning-with-the-past

Kerr, N. L. (1998). HARKing: Hypothesizing after the results are known. *Personality and Social Psychology Review*, *2*(3), 196-217.

Klein, et al. (2014). Investigating vatiation in replicability: A “Many Labs” replication project. *Social Psychology, 45,* 142-152.

McShane, B. B., Böckenholt, U., & Hansen, K. T. (2016). Adjusting for Publication Bias in Meta-Analysis: An Evaluation of Selection Methods and Some Cautionary Notes. *Perspectives on Psychological Science*, *11*(5), 730-749.

Medin, D., Bennis, W., & Chandler, M. (2010). Culture and the home-field disadvantage. *Perspectives on Psychological Science*, *5*(6), 708-713.

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, *349*(6251), aac4716.

Rozin, P. (2009). What kind of empirical research should we publish, fund, and reward?: A different perspective. *Perspectives on Psychological Science*, *4*(4), 435-439.

Schaller, M. (2015). The empirical benefits of conceptual rigor: Systematic articulation of conceptual hypotheses can reduce the risk of non-replicable results (and facilitate novel discoveries too). *Journal of Experimental Social Psychology*.

Schimmack, U. (2012). The ironic effect of significant results on the credibility of multiple-study articles. *Psychological Methods*, *17*(4), 551.

Sedlmeier, P., & Gigerenzer, G. (1989). Do studies of statistical power have an effect on the power of studies?. *Psychological bulletin*, *105*(2), 309.

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*, 0956797611417632.

Simonsohn, U. (2013). Just post it the lesson from two cases of fabricated data detected by statistics alone. *Psychological science*, 0956797613480366.

Simonsohn, U., Nelson, L. D., & Simmons, J. P. (2014). P-curve: a key to the file-drawer. *Journal of Experimental Psychology: General*, *143*(2), 534.

Singal (2016): <http://nymag.com/scienceofus/2016/09/power-poses-co-author-i-dont-think-power-poses-are-real.html>

Smaldino, P. E., & McElreath, R. (2016). The Natural Selection of Bad Science. *arXiv preprint arXiv:1605.09511*.

Tukey, J. W. (1980). We need both exploratory and confirmatory. *The American Statistician*, *34*(1), 23-25.

Wagenmakers, E. J., Morey, R. D., & Lee, M. D. (2016). Bayesian benefits for the pragmatic researcher. *Current Directions in Psychological Science*, *25*(3), 169-176.

Wagenmakers, E. J., Wetzels, R., Borsboom, D., & van der Maas, H. L. (2011). Why psychologists must change the way they analyze their data: the case of psi: comment on Bem (2011).

Wagenmakers, E. J., Wetzels, R., Borsboom, D., van der Maas, H. L., & Kievit, R. A. (2012). An agenda for purely confirmatory research. *Perspectives on Psychological Science*, *7*(6), 632-638.