

CRIM 795
Experimental Criminology
(Fall 2011)
Updated 8/29/2011

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Class Meets: Wednesdays

Time: 1:00PM – 3:45PM

Room: Innovation 455A

Class website: http://gemini.gmu.edu/cebcp/CRIM_795_fall2011.html

Course Summary:

Randomized experiments are generally considered the most reliable method that researchers can use in linking causes and effects. For this reason, a number of scholars have called randomized studies the "gold standard" for research. But randomized studies continue to be the exception rather than the rule in criminal justice study. In this course, we will contrast randomized designs with other approaches, examining statistical, methodological, ethical and practical concerns. What are the statistical advantages of randomized experimental designs? Why do some researchers believe that randomized studies violate ethical standards in criminal justice? Why are experiments considered to have higher internal validity than non-randomized designs and how do different types of designs compare in terms of external validity? We will also focus on how experiments can be developed and how they are analyzed. What are the practical barriers to experimentation and how can they be overcome? What statistical methods are most appropriate for experimental analysis? How can block randomization or hierarchical modeling be used to develop more powerful or more practical research approaches?

Evaluation:

Grades will be assigned as follows:

Class Participation (20%)
Scholarly Paper (80%)

Recommended Text:

Weisburd, David and Chester Britt. (2007). Third Edition. *Statistics in Criminal Justice*. Springer, NY.

I. Can Criminologists Provide Solid Answers to Policy Questions?: Problems of Bias and Generalizability

- 1) Cook, Thomas and Donald Campbell, eds. (1979). *Quasi-Experimentation: Design and Analysis Issues for Field Settings*. Boston, MA: Houghton Mifflin Company. Chapter 2: 37-94.
- 2) Weisburd, David. (2003). Ethical Practice and Evaluation of Interventions in Crime and Justice: The Moral Imperative for Randomized Trials. *Evaluation Review*, 27(3), 336-354.
- 3) Maxfield, Michael G. and Earl Babbie. (1998). *Research Methods for Criminal Justice and Criminology*. Second Edition. Chapter 3: Causation and Validity.

II. Controlling for Confounding Causes: Non-Experimental Approaches

- 1) Weisburd, David (2010). Justifying the Use of Non-Experimental Methods and Disqualifying the Use of Randomized Controlled Trials: Challenging Folklore in Evaluation Research in Crime and Justice. *Journal of Experimental Criminology*, 6, 209-227.
- 2) Weisburd, David and Chester Britt. (2007). *Statistics in Criminal Justice*. Third Edition. *Statistics in Criminal Justice*. Springer, NY. Chapters 15-17.
- 3) Campbell, Donald and Jean Russo, eds. (1999). *Social Experimentation*. Thousand Oaks, CA: Sage Publications. Chapter 3: 69-106.
- 4) Weisburd, David and Alex Piquero. 2008. How Well Do Criminologists Explain Crime? Statistical Modeling in Published Studies. *Crime and Justice: A Review of Research*, 37, 453-502.
- 5) Smith, Douglass and Raymond Paternoster. (1990). Formal Processing and Future Delinquency: Deviance Amplification as Selection Artifact. *Law and Society Review*, 24(5): 1109-1132
- 6) Apel, Robert J. and Gary Sweeten. (2010). Propensity Score Matching in Criminology and Criminal Justice. In Alex R. Piquero and David Weisburd (Eds.). *Handbook of Quantitative Criminology*. Springer: New York, NY.

III. Controlling for Confounding Causes: Randomized Experiments

- 1) Boruch, Robert. (1997). *Randomized Experiments for Planning and Evaluation*. Thousand Oaks, CA: Sage Publication. Chapter 1:1-18.
- 2) Farrington, David, Lloyd Ohlin and James Q. Wilson. (1986). *Understanding and Controlling Crime*. New York: Springer Verlag. Chapter 3:65-94.

- 3) Boruch, Robert, Brooke Snyder and Dorothy DeMoya. (2000). The Importance of Randomized Field Trials. *Crime and Delinquency*, 46(2), 156-180.
- 4) Weisburd, David and Anthony Petrosino (2005). Experiments: Criminology. In Kimberly Kempf (ed.), *Encyclopedia of Social Measurement*. Chicago, IL: Academic Press.
- 5) Farrington, David and Welsh, Brandon. (2005). Randomized Experiments in Criminology: What Have We Learned in the Past 2 Decades? *Journal of Experimental Criminology* 1(1), 9-28.
- 6) Berk, Richard. (2010). Recent Perspectives on Regression Discontinuity Design. In Alex R. Piquero and David Weisburd (Eds.). *Handbook of Quantitative Criminology*. Springer: New York, NY.

IV. Comparing Randomized and Non-Randomized Designs: Should Experiments be Considered the Gold Standard?

- 1) Lipsey, Mark and David Wilson. (1993). The Efficacy of Psychological, Educational, and Behavioral Treatment: Confirmation from Meta-Analysis. *American Psychologist*, December 1993, 1181-1209.
- 2) Kunz, Regina and Andrew Oxman. (1998). The Unpredictability Paradox: Review of the Empirical Comparisons of Randomised and Non-Randomised Clinical Trials. *British Medical Journal*, 317, 1185-1190.
- 3) Heinsman, Donna and William Shadish. (1996). Assignment Methods in Experimentation: When Do Nonrandomized Experiments Approximate Answers from Randomized Experiments? *Psychological Methods*, 1(2), 154-169.
- 4) Wilson, David, Denise Gottfredson, and Stacy Najaka. (2001). School-Based Prevention of Problem Behaviors: A Meta-Analysis. *Journal of Quantitative Criminology*, 17(3), 247-272.
- 5) Lipsey, Mark, Carol Petrie, David Weisburd and Denise Gottfredson. (2006). Improving evaluation of anti-crime programs: Summary of a National Research Council report. *Journal of Experimental Criminology*, 2(3), 271-307.
- 6) Sampson, Robert J. (2010). Gold standard myths: Observations on the experimental turn in quantitative criminology. *Journal of Quantitative Criminology*, 26(4): 489-500.
- 7) Welsh, Brandon C., Meghan E. Peel, David P. Farrington, Hank Elffers, and Anthony A. Braga. (2010) Research design influence on study outcomes in crime and justice: A partial replication with public area surveillance. *Journal of Experimental Criminology*, 7, 183-198.

V. If Experiments are so Useful, Why are there so Few of Them?: Ethical and Practical Barriers to Experimentation and the Responses of Experimenters

A. Ethical and Practical Barriers

- 1) Clarke, Ronald V. and Derrick B. Cornish. (1972). The Controlled Trial in Institutional Research: Paradigm or Pitfall for Penal Evaluators? *Home Office Research Studies*. London: Crown Copyright.
- 2) Pawson, Ray and Nick Tilley. (1994). What Works in Evaluation Research? *British Journal of Criminology*, 34, 291-306.
- 3) Pawson, Ray and Nick Tilley, (1997). *Realistic Evaluation*. Beverly Hills, CA: Sage Publications. Chapter 2: 30-54.
- 4) Eck, John. (2002). Learning from Experience in Problem-Oriented Policing and Crime Prevention: The Positive Functions of Weak Evaluations and the Negative Functions of Strong Ones. *Crime Prevention Studies* 14, 93-117. Available online at: http://popcenter.org/library/crimeprevention/volume_14/04-EckLearning.pdf
- 5) Heckman, James, and Jeffrey A. Smith. (1995). Assessing the Case for Social Experimentation. *Journal of Economic Perspectives*, 9(2), 85-110.
- 6) Lum, Cynthia and Sue-Ming Yang. (2005). Why Do Evaluation Researchers in Crime and Justice Choose Non-Experimental Methods? *Journal of Experimental Criminology*, 1(2), 191-213.

B. The Response of Experimenters: Overcoming the Barriers

- 1) Weisburd, David. (2000). Randomized Experiments in Criminal Justice Policy: Prospects and Problems. *Crime and Delinquency*, 46(2), 181-193.
- 2) Boruch, Robert, Timothy Victor and Joe Cecil. (2000). Resolving Ethical and Legal Problems in Randomized Experiments. *Crime and Delinquency*, 46(3), 300-353.
- 3) Petersilia, Joan. 1989. Implementing Randomized Experiments: Lessons from BJA's Intensive Supervision Project. *Evaluation Review*, 13(5), 435-458.
- 4) Boruch, Robert. (1975). On Common Contentions about Randomized Field Experiments. (pp 107-142) in Boruch and Reicken (Eds) *Experimental Testing of Public Policy: The Proceedings of the 1974 Social Sciences Research Council Conference on Social Experimentation*. Boulder, CO: Westview Press.
- 5) Weisburd, David. (2003). Ethical Practice and Evaluation of Interventions in Crime and Justice: The Moral Imperative for Randomized Trials. *Evaluation Review*, 27(3), 336-354.
- 6) McCord, Joan. (2003). Cures the Harm: Unanticipated Outcomes of Crime Prevention Programs. *The Annals of the American Academy of Political and Social Science*, 587, 16-30.

VI. Avoiding Experiments Designed for Failure: Treatment Integrity and Statistical Power

- 1) Weisburd, David, Anthony Petrosino and Gail Mason. (1993). Design Sensitivity in Criminal Justice Experiments. *Crime and Justice: A Review of Research*, 17, 337-379.
- 2) Weisburd, David and Chester Britt. (2007). *Statistics in Criminal Justice*. Third Edition. Springer, NY. Chapter 11 (page 257-269), Chapter 21.
- 3) Cohen, Jacob. (1977). *Statistical Power Analysis for the Behavioral Sciences*. New York: Academic Press. Chapters 1 and 2: 1-74.
- 4) Lipsey, Mark. (1998). Design Sensitivity: Statistical Power for Applied Experimental Research. In Bickman and Rog (eds.) *Handbook of Applied Social Research Methods*. Thousand Oaks: Sage Publications.
- 5) Brown, Stephen. (1989). Statistical Power and Criminal Justice Research. *Journal of Criminal Justice* 17: 115-122.

Software Packages for Analysis of Statistical Power

- 1) Power and Precision. Bio-stat.
<http://www.power-analysis.com/>
- 2) Optimal Design (Software and Manual)
http://sitemaker.umich.edu/group-based/optimal_design_software

VII. Overcoming Implementation Failures

- 1) Angrist, Joshua D. (2006). Instrumental Variables Methods in Experimental Criminological Research: What, Why and How. *Journal of Experimental Criminology*, 2(1), 23-44.
- 2) White, Michael D., John S. Goldkamp and Jennifer B. Robinson. (2006). Acupuncture in Drug Treatment: Exploring its Role and Impact on Participant Behavior in the Drug Court Setting. *Journal of Experimental Criminology* 2(1), 45-65.
- 3) Gottfredson, Denise C., Stacy S. Najaka, Brook W. Kearley and Carlos M. Rocha. (2006). Long-Term Effects of Participation in the Baltimore City Drug Treatment Court: Results from an Experimental Study. *Journal of Experimental Criminology*, 2(1), 67-98.
- 4) Shaffer, Deborah K. (2011). Looking inside the black box of drug courts: A meta-analytic review. *Justice Quarterly*, 28(3): 493-521.

VIII. When Can We Say Treatments Don't Work?: Recognizing The Limits of Statistical Tests

- 1) Anderson, David R., Kenneth P. Burnham, and William L. Thompson. (2000). Null Hypothesis Testing: Problems, Prevalence, and an Alternative. *Journal of Wildlife Management*, 64 (4), 912-923.
- 2) Boruch, Robert. (2007). The Null Hypothesis is Not Called That for Nothing: Statistical Tests in Randomized Trials. *Journal of Experimental Criminology*, 3(1), 1-20.
- 3) Finch, Sue, Geoff Cumming, and Neil Thomason. (2001). Reporting of Statistical Inference in the Journal of Applied Psychology: Little Evidence of Reform. *Education and Psychological Management*, 61(2), 181-210.
- 4) Cohen, Jacob. (1994). The Earth is Round. *American Psychologist*, 997-1003.
- 5) Cohen, Jacob. (1995). The Earth is Round ($p < .05$): Rejoinder. *American Psychologist*, 1103.
- 6) Finch, Sue, Neil Thomason, and Geoff Cumming. (December 2002). Past and Future APA Guidelines for Statistical Practice. *Theory & Psychology*, 12(6), 825-858.
- 7) Weisburd, David, Cynthia Lum, and Sue-Ming Yang. (2003). When Can We Conclude That Treatments or Programs “Don’t Work”? *The Annals of the American Academy of Political and Social Science* 587, 31-48.
- 8) Weisburd, David and Chester Britt. (2007). *Statistics in Criminal Justice*. Third Edition. Springer, NY. Chapter 6, Chapter 20.

IX. Designing and Analyzing Experiments: Practical Design Examples.

A. Simple Non-Blocked Designs

- 1) Petersilia, Joan and Susan Turner. (1993). Intensive Probation and Parole. *Crime and Justice: A Review of Research*, 19, 281-335.
- 2a) Britt, Chester, Michael Gottfredson and John Goldkamp. (1992). Drug Testing and Pretrial Misconduct: An Experiment on the Specific Deterrent Effects of Drug Monitoring Defendants on Pretrial Release. *Journal of Research in Crime and Delinquency*, 29, 62-78.
- 2b) Weisburd, David and Chester Britt. (2007). *Statistics in Criminal Justice*. Third Edition. Springer, NY Chapter 11 (page 269-281).
- 3) Ratcliffe, Jerry H., Travis Taniguchi, Elizabeth R. Groff, and Jennifer D. Wood. (2011). The Philadelphia Foot Patrol Experiment: A Randomized Controlled Trial of Police Patrol Effectiveness in Violent Crime Hotspots. *Criminology*, 49(3):795-831.

B. Block Randomized Designs

- 1) Bloom, Howard S. (2005). Randomizing Groups to Evaluate Place-Based Programs. In Howard S. Bloom (ed.), *Learning More From Social Experiments: Evolving Analytic Approaches*. Russell Sage Foundation Publications.

- 2) Sherman, Lawrence and David Weisburd. (1995). General Deterrent Effects of Police Patrol in Crime "Hot Spots": A Randomized, Controlled Trial. *Justice Quarterly*, 12(4), 625-648.
- 3) Weisburd, David and Lorraine Green. (1995). Policing Drug Hot Spots: The Jersey City Drug Market Analysis Experiment. *Justice Quarterly* 12(4), 711-735.
- 4) Weisburd, David and Chester Britt. (2007). *Statistics in Criminal Justice*. Third Edition. Springer, NY. Chapter 12.
- 5) Boruch, Robert, Henry May, Herbert Turner, Julia Lavenberg with Anthony Petrosino, Dorothy de Moya, Jeremy Grimshaw, and Ellen Foley. (2004). Estimating the Effects of Interventions that are Deployed in Many Places: Place Randomized Trials. *American Behavioral Scientist*, 47(5), 608-633.
- 6) Weisburd, David. (2005). Hot Spots Experiments and Criminal Justice Research: Lessons from the Field. *Annals of the American Academy of Social and Political Science* 599, 220-245.
- 7) Weisburd, David and Charlotte Gill (2011). Block randomized trials at places: Rethinking the limitations of small-N experiments.
- 8) Ariel, Barak and David P. Farrington. (2010). Randomized Block Designs. In Alex R. Piquero and David Weisburd (Eds.). *Handbook of Quantitative Criminology*. Springer: New York, NY.

C. Reporting Validity

- 1) Perry, Amanda E. (2010). Descriptive Validity and Transparent Reporting in Randomized Controlled Trials. In Alex R. Piquero and David Weisburd (Eds.). *Handbook of Quantitative Criminology*. Springer: New York, NY.
- 2) Perry, Amanda E. and Matthew Johnson (2008). Applying the Consolidated Standards of Reporting Trials (CONSORT) to Studies of Mental Health Provision for Juvenile Offenders: A Research Note. *Journal of Experimental Criminology*, 4, 165-185
- 3) Perry, Amanda E., David Weisburd & Catherine Hewitt. (2010). Are criminologists describing randomized controlled trials in ways that allow us to assess them? Findings from a sample of crime and justice trials. *Journal of Experimental Criminology*, 6(3): 245–262.
- 4) Farrington, D. P. (2003). Methodological quality standards for evaluation research. *Annals of American Academy of Political and Social Science*, 587(1): 49–68.
- 5) Lösel, Friedrich, and Peter Kofler. 1989. Evaluation research on correctional treatment in West Germany: A meta-analysis. In *Criminal behavior and the justice system: Psychological perspectives*, edited by Hermann Wegener, Friedrich Lösel, and Jochen Haisch. New York: Springer-Verlag.

6) Gill, Charlotte (2011). Missing links: How descriptive validity impact the policy relevance of randomized controlled trials in criminology. *Journal of Experimental Criminology*, 7(3): 201-224.

Resources:

CONSORT website: <http://www.consort-statement.org/home/>

D. Hierarchical Designs

1a) Steenbergen, Marco R. and Bradford S. Jones. (2002). Modeling Multi-level Data Structures. *American Journal of Political Science* 46(1), 218-237.

1b) Recommended additional reading:

Luke, Douglass A. (2004) Multi-Level Modeling. *Quantitative Applications in the Social Sciences*. Sage.

2) Cook, Thomas, Farah-Naaz Habib, Meredith Philips, Richard Settersten, Shobha Shagle, Serdar Degirmencioglu. (1999). Comer's School Development Program in Prince George's County, Maryland: A Theory Based Evaluation. *American Educational Research Journal*, 36(3), 543-597.

3) Raudenbush, Steven and A. Bryk. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods*, 2nd Edition. Newbury Park, CA: Sage Publications. Chapter 1-2.

4) Esbensen, Finn-Aage, D. Wayne Osgood, Terrance J. Taylor, Dana Peterson, and Adrienne Freng. (2001). How Great is G.R.E.A.T.? Result from a Longitudinal Quasi-Experimental Design. *Criminology and Public Policy*, 1(1), 87-119.

5) Weisburd, David, Nancy Morris and Justin Ready. (2008). Risk-Focused Policing at Places: An Experimental Evaluation of the Communities that Care Program in Redlands, California. *Justice Quarterly*, 25(1), 163-200.

6) Snijders, Tom A.B. and Roel J. Bosker. (1993). Standard errors and sample sizes for two-level research. *Journal of Educational and Behavioral Sciences*, 18: 237.

X. Replication, Meta Analysis, and Multi-Center Designs: Practical Problems and Statistical Analysis

A. Replication

1) Sherman, Lawrence and Richard Berk. (1984). The Specific Deterrent Effects of Arrest for Domestic Assault. *American Sociological Review* 49, 261-272.

2) Sherman, Lawrence. (1992). *Policing Domestic Violence*. New York: The Free Press. Chapters 5 and 6.

3) Berk, Richard, Alec Campbell, Ruth Klap and Bruce Western. (1992). The Deterrent Effect of Arrest in Incidents of Domestic Violence: A Bayesian Analysis of Four Field Experiments. *American Sociological Review*, 57(5), 698-708.

4) Garner, Joel, Jeffrey Fagan, Christopher Maxwell. (1995). Published Findings from the Spouse Assault Replication Program: A Critical Review. *Journal of Quantitative Criminology*, 11(1), 3-28.

B. Meta-Analysis

1) Lipsey, Mark W. and David B. Wilson. (2001). *Practical Meta-Analysis*. Chapter 1: Introduction: 1-11. Sage Publications, Thousand Oaks, CA

2) Berk, Richard. (2007). Statistical Inference and Meta-Analysis. *Journal of Experimental Criminology*, 3(3), 247-270.

3) Lipsey, Mark. (2007). Unjustified Inferences about Meta-Analysis. *Journal of Experimental Criminology*, 3(3), 271-279.

4) Shadish, William. (2007). A World Without Meta-Analysis. *Journal of Experimental Criminology*, 3(3), 281-291.

5) Berk, Richard. (2007). The Powerful Seductions Alchemy. *Journal of Experimental Criminology*, 3(3), 293-297.

6) Wilson, David B. (2010). Meta-analysis. In Alex R. Piquero and David Weisburd (Eds.). *Handbook of Quantitative Criminology*. Springer: New York, NY.

C. Multi-Center Clinical Trials

1) Fleiss, J. (1982). Multicentre Clinical Trials: Bradford Hill's Contributions and Some Subsequent Development. *Statistics in Medicine*, 1, 353-359.

2) Weisburd, David and Faye Taxman. (2000). Developing and Multicenter Randomized Trial in Criminology: The Case of HIDTA. *Journal of Quantitative Criminology*, 16(3), 315-340.