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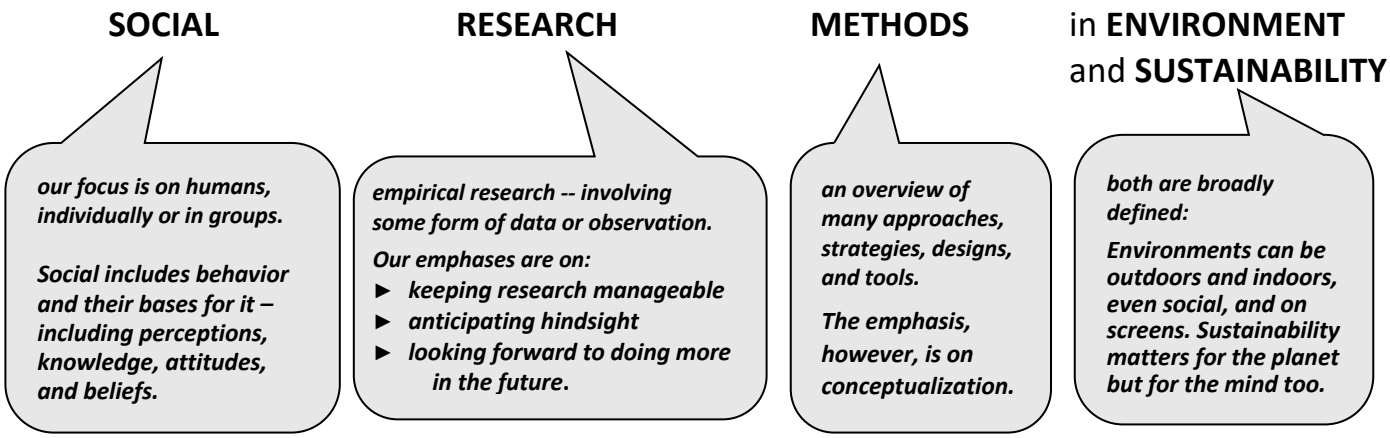
EAS 641 - WINTER 2019



EAS 641: Social Research Methods in Environment and Sustainability is oriented to students who are likely to engage in research of any kind, formal or informal, that is concerned with people and the environment. The course has been useful for those with minimal research experience as well as students who have carried out research in the past. The course is equally applicable whether you anticipate doing a thesis or dissertation, are in the throes of carrying out a study, and/or hope to gain perspective on past efforts with the research process. Neither statistics nor current involvement in research is prerequisite to the course. In the latter portion of the semester, working in teams, a small study is carried out that provides the opportunity to put many of the course's themes to use.

Objectives

- As a consumer of others' research: to be critical and insightful;
- As a producer of research: to acquire a sense for appropriate and inappropriate shortcuts; to learn to anticipate possible outcomes and alternative interpretations.
- To become facile in a different way of thinking about research, emphasizing "multiplism" with respect to measures, methods, settings, etc.;
- To recognize the obligations that come with doing research;
- To gain a sense for the normal frustrations inherent in the research process and for ways that the joys of discovery can be enhanced.

"Office hours"

Please see me before or after class, send an email, or call to set up a time to meet. More often than not, it will be within a day or two.

Course formats

We meet on Tuesdays and Thursdays, 11:30-1:00 pm. Generally, the Tuesday class session each week is oriented to the reading assignment. Thursdays focus on using the information, making it all too evident how much harder research is to "do" than to read about.

📖 Readings / Discussion

This is not a class where you will sit back, relax, and hope the lectures will be enchanting. You will find that what you learn has a great deal to do with your active participation. That means that you can't just read the assigned material; you actually have to think about it. And the thinking can't be passive. Come to class with questions, with puzzles you are trying to figure out. Be involved in setting the agenda for the discussion.

There is no text; the reading assignments are on Canvas (http://umich.instructure.com).

♦ Empirical articles

Empirical articles provide "case studies" for examining research issues. Our focus is thus on the ***methods and results*** sections of these articles.

Σ Small groups

Our usual format for puzzling over problem sets is to meet in small groups. The groups provide the opportunity for exchanging information and for all group members to get feedback on their ideas and understanding. The effectiveness of this procedure depends on shared expectations: no one dominates, everyone should be heard, the tone must be constructive, and group members should feel free to ask for help when needed.

∞ Small Experiments

Using a common research theme, the course includes opportunities for designing studies, collecting data, data analysis, and presentation of results. The purpose is to gain experience with various aspects of doing research, and especially with keeping the process manageable.

🕑 The mini's

There are four graded assignments, due on specified dates. The mini's require thought rather than further reading; they tend to be challenging, and possibly a little frustrating. Mini's are distributed ***three*** class periods before they are due. There is always time during the two intervening class meetings to raise any questions about the mini. Before the mini's are due we often have problem sets in class that focus on parallel issues. Class discussion about the mini's is strongly encouraged; discussion with others outside of class is not permitted. Mini's must be your own work.

≤ Criteria for grades:

Performance on the four mini's constitutes 70% of the final grade. 15% of the grade reflects involvement in class, with respect to the readings and small group sessions. The remaining 15% is related to the Small Experiments.

🏞 Your own research

There is no requirement that you do research of your own for this course. You can, however, use the course to help with current or anticipated projects. The best way to do that is to provide a brief (a page or less) description of the project and indicate the kind of help you are seeking.

OVERVIEW OF RESEARCH

➢Independent & Dependent Variables; Course Logo

1/15 Kaplan, R. (2004) Preface

Kaplan, S. & Kaplan, R. (1982) *Cognition and environment: Functioning in an uncertain world*. New York: Praeger. (Republished by Ann Arbor: Ulrich's, 1989)

- Ch. 9: Research as intermediate technology (Pp. 197-200).

Kerlinger, F. N. (1986) *Foundations of behavioral research* (3rd ed.) NY: Holt, Rinehart & Winston.

- Ch. 2: Types of variables (Pp. 32-35, 36-37)

Chambliss, D. F. & Schutt, R. K. (2003). *Making sense of the social world.* Thousand Oaks, CA: Sage.

- Conceptualization (Pp. 50-52, 54)

Bernard, H. R. (2000) *Social research methods: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

- Conceptual definitions; Operational definitions (Pp. 36-40)

Course Logo

1/17 ♦ **Abstracts**

MEASUREMENT VALIDITY

➢Reliability; Criterion and Content Validity

1/22 Babbie, E. (2001) *The practice of social research* (9th ed.) Belmont, CA: Wadsworth.

- Criteria for measurement quality (Pp. 140-145).

Carmines, E. G. & Zeller, R. A. (1979) *Reliability and validity assessment*. Beverly Hills, CA: Sage.

- Criterion-based & Content validity (Pp. 17-22).

Hoyle, R. H., Harris, M. J. & Judd, C. M. (2002) *Research methods in social relations (7th ed.).* Belmont, CA: Wadsworth.

- Components of observed score (Pp. 81-83) Reliability (Pp. 83-84)

Bloom, M. (1986) *The experience of research*. New York: Macmillan.

- Table 5.1: Validity: An overview of types and measurements
- Table 5.2: Reliability: An overview of types and measurements

1/24 ∞ **Measurement and validity**

➢Construct Validity

1/29 Kaplan & Kaplan [1/15]

- Ch. 9: Research as intermediate technology (Pp. 209-217).

Sechrest, L. (2005) Validity of measures is no simple matter. *Health Services Research*, 40(5, part 2), 1584-1604. (Excerpts: Pp. 1584-88; 1594-97)

Hoyle, et al. [1/22]

- Maximizing construct validity (Pp. 33-35)
- Operational definitions are necessary but rarely sufficient (Pp. 76-79)
- Convergent validity, discriminant validity, validity and the nomological net (Pp. 87-89)

Carmines & Zeller [1/22]

- Construct validity (Pp. 22-27)

♦ Graham, Haidt, Iyer, & Ditto (2011) Mapping the Moral Domain. *Journal of Personality and Social Psychology, 101*(2), 366-385. 370-385 is required, 366-369 is optional.

1/31 🕐 **Mini-one due**

Validity Review

RESEARCH DESIGN

➢Design strategies; Controls; Internal and External Validity

2/ 5 Robson, C. (1993) *Real world research: A resource for social scientists and practitioner-researchers.* Oxford: Blackwell
- Choosing a research strategy: Overview (Pp. 40-43)

Shadish, W. R., Cook, T. D. & Campbell, D. T. (2002) *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.
- Table 1.1: The vocabulary of experiments (p.12)

Hoyle, et al. [1/22]
- Maximizing internal validity (Pp. 36-41)

Brewer, M. B. (2000) Research design and issues of validity. In H. T. Reis & C. M. Judd (Eds.) *Handbook of research methods in social and personality psychology*. Cambridge, UK: Cambridge University Press.
- Internal validity: The third variable problem (Pp. 4-6 end of 1st paragraph)

Steckler, A. & McLeroy, K. R. (2008) The importance of external validity. *American Journal of Public Health* (98(1), 9-10.

♦ Hansmann, R. & Scholz, R. W. (2003) A two-step informational strategy for reducing littering behavior in a cinema. *Environment and Behavior*, *35*(6), 752-762.

2/ 7 ∞ **Different approaches to designing a study**

♦ Sullivan, W. C., Kuo, F. E. & Prabhu, M. (1997) Communicating with citizens: The power of photo-simulations and simple editing. *Environmental Impact Assessment Review*, 17, 295-310.

Mini-two (Part I) due

➢ True & Quasi Research Design; Factorial Designs; Interaction Effects

2/12 Hoyle, et al. [1/22]
- Ch. 11: Randomized experiments (Pp. 237-244)
- Ch. 13: Nonrandomized designs (Pp. 307-312)

Crano, W. D. & Brewer, M. B. (1986) *Principles of methods in social research*. Boston: Allyn & Bacon.
- Designing and constructing experiments (Pp. 61-73).

Kimble, G. A. (1978) *How to use (and misuse) statistics*. Englewood Cliffs, NJ: Prentice-Hall.
- Main effects and interactions (Pp. 70-77)

♦ Mueller, P. & Oppenheimer, D. (2014) The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking. *Psychological Science*, *25*(6), 1–10.

♦ Raffaello, M. & Maass, A. (2002) Chronic exposure to noise industry: The effects on satisfaction, stress symptoms, and company attachment. *Environment and Behavior*, *34*(5), 651-671.

2/14 **Research in practice**

2/19 **Examining empirical articles**

♦ Hine, D. W., Bhullar, N., Marks, D. G., Kelly, P. & Scott, J. G. (2011) Comparing the effectiveness of education and technology in reducing wood smoke pollution: A field experiment. *Journal of Environmental Psychology*, 31, 222-228.

♦ Kahan, D., Peters, E., Wittlin, M., Slovic, P., Ouellette, L.L., Braman, D. and Mandel, G. (2012) The polarizing impact of science literacy and numeracy on perceived climate change risks. *Nature Climate Change, 2*, 732-735.

2/21 **Toward mini-two (Part II):**

♦ De Young, R., et al. (1993) Promoting source reduction behavior: The role of motivational information. *Environment and Behavior*, 25, 70-85.

RESEARCH STRATEGIES AND BASIC TOOLS

➢ Surveys, Questionnaires

2/26 Schutt, R. K. (2001) *Investigating the social world* (3rd ed.) Thousand Oaks, CA: Sage.
- ▸ Survey research in the social sciences (Pp. 208-213)
- ▸ Refine and test questions (Pp. 223-224)

Fowler, F. J. Jr. (1998) ▸ Design and evaluation of survey questions (Pp. 343-344)
In L. Bickman & D. J. Rog (Eds.) *Handbook of applied social research methods.* Thousand Oaks, CA: Sage.

Schwarz, N., Groves, R. M., & Schuman, H. (1998) Survey methods. In D. T. Gilbert, S. T. Fiske & G. Lindsey (Eds.) *The handbook of social psychology* (4th ed.). Boston: McGraw-Hill.
- ▸ Asking & answering survey questions: Cognitive & communicative processes (Pp. 150-152)

Bernard [1/15] ▸ Questionnaires and survey research (Pp. 228-236)

Black, T. R. (1999) *Doing quantitative research in the social sciences*. London: Sage.
- ▸ Table 5.1 A summary of common sampling techniques (p. 118)

♦ Ellis, C. D., Lee, S-W & Kweon, B-S (2006) Retail land use, neighborhood satisfaction and the urban forest: An investigation into the moderating and mediating effects of trees and shrubs. *Landscape and Urban Planning,* 74, 70-78.

♦ Lewandowsky, S., Oberauer, K., and Gignac, G.E. (2013) NASA Faked the Moon Landing—Therefore, (Climate) Science Is a Hoax: An Anatomy of the Motivated Rejection of Science. *Psychological Science, 24*(5), 622–633.

OPTIONAL: Schonlau, M., Fricker, R. D., & Elliott, M. N. (2002). Conducting Research Surveys via E-mail and the Web. ▸ Guidelines for Designing and Implementing Internet Surveys (Pp. 41-53)

2/28 ⏱ **Mini-two (Part II) due**

∞ **Small Experiment study: Begin group project**

When does a class assignment require IRB approval? (UM policy statement)
http://www.hrpp.umich.edu/initiative/classactivities.html

"Spring" Break

➢Observational methods / Coding

3/12 Patton, M. Q. (1990) *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- ▸ "From Halcolm's Methodological Chronicle" (Pp. 199)

Robson, C. (2007) *How to do a research project.* Malden, MA: Blackwell
- ▸ Data collection methods: Observation (Pp. 84-87)

Gray, D. E. (2004) *Doing research in the real world*. London: Sage.
- ▸ Collecting primary data: Observation (Pp. 238-242, 244-247)

Krathwohl, D. R. (1998) *Methods of educational and social science research* (2nd Ed.). NY:Longman.
- ▸ Learning to observe (Pp. 256-259)

♦ Wilson-Doenges, G. (2001) Push and pull forces away from front porch use. *Environment and Behavior*, 33(2), 264-278.s

♦ Misra, S., Cheng, L., Genevie, J., & Yuan, M. (2014) The iPhone Effect: The Quality of In-Person Social Interactions in the Presence of Mobile Devices. *Environment and Behavior*, 48: 275-298

3/14 **Design Review**

Kaplan, R. (1996) The small experiment: Achieving more with less. Pp. 170-173 in J. L. Nasar & B. B. Brown (Eds.) *Public and private places*. Edmond, OK: Environmental Design Research Association.

➢ Interviews / Focus Groups / Asking questions

3/19 Patton [3/12] ▸ Qualitative interviewing: "From Halcolm's Epistemological Parables" (Pp. 277-278)

Margoluis, R. & Salafsky, N. (1998) *Measures of success: Designing, managing and monitoring conservation and development projects*. Washington, DC: Island.

▸ Qualitative methods (Pp. 134-138, 152)

Elmerdorf, W. F. & Luloff, A. E. (2001) Using qualitative data collection methods when planning for community forests. *Journal of Arboriculture*, 27(3), 139-151. Excerpt: Pp. 139-144.

Gaskell, G. (2000) ▸ Individual and group interviewing (Pp. 38-48 only). In M. W. Bauer & G. Gaskell (Eds.) *Qualitative researching with test, image, and sound: A practical handbook*. London: Sage.

Bryman, A. & Bell, E. (2003) *Business research methods*. Oxford, UK: Oxford University Press.

▸ Tape recording and transcription (Pp. 353-356)

♦ Trettin, L. & Musham, C. (2000) Is trust a realistic goal of environmental risk communication? *Environment and Behavior,* 32(3), 410-426.

♦ OPTIONAL Dataset: Capstick, S. (2016) Longitudinal Analysis of Group Interview Data:Tracking Public Understanding of Climate Change Over Time. SAGE Publications.

♦ OPTIONAL Coding example: Harding, J. (2015) Identifying Themes and Coding Interview Data: Reflective Practice in Higher Education. SAGE Publications.

3/21 **Toward mini-three**

➢ Evaluation & Qualitative / Quantitative

3/26 Robson [2/5] ▸ Carrying out an evaluation (Pp. 180-182)

Gray, P. S., Williamson, J. B., Karp, D. A., & Dalphin, J. R. (2007) *The research imagination: An introduction to qualitative and quantitative methods.* New York: Cambridge University Press.

▸ Evaluator's role (Pp. 353-355)

Perrin, B. (2000) Donald T. Campbell and the art of practical "in-the-trenches" program evaluation. (Pp. 271-275 only) In L. Bickman (Ed.) *Validity and social experimentation: Donald Campbell's legacy (Vol. 1).* Thousand Oaks, CA: Sage.

Bamberger, M., Rugh, J. & Mabry, L. (2006) *Real world evaluation: Working under budget, time, data, and political constraints. Thousand Oaks, CA: Sage.*

▸ Qualitative methodology: An overview (Pp. 268-269)

Bauer, M. W., Gaskell, G. & Allum, N. C. (2000) Quality, quantity, and knowledge interests: Avoiding confusions. In M. W. Bauer & G. Gaskell (Eds.) *Qualitative researching with test, image, and sound: A practical handbook*. London: Sage. ▸ Qualitative *vs.* quantitative research (Pp. 7-10)

Stewart, E. (2000) Thinking through others: Qualitative research and community psychology. In J. Rappaport & E. Seidman (Eds.) *Handbook of community psychology*. New York: Kluwer.

▸ Friend or foe? Ethics of qualitative research (Pp.732-733)

▸ Subjects and objects (Pp. 733-734)

Zint, M. (2010). An introduction to My Environmental Education Evaluation Resource Assistant (MEERA), a web-based resource for self-directed learning about environmental education program evaluation. Evaluation and Program Planning 33: 178–179.

♦ Spartz, J. T. & Shaw, B. R. (2011) Place meanings surrounding an urban natural area: A qualitative inquiry. *Journal of Environmental Psychology*, 31, 344-352.

3/28 🕛 **Mini-three due**

What to do with the data?

➢ Case Studies / Action Research

4/ 2 Gray [3/12] ▸ Designing case studies (Pp. 123-125)

Yin, R. K. (2003) *Applications of case study research* (2nd ed.) Thousand Oaks: Sage.
- ▸ Box 1: Six different types of case studies (p.5)
- ▸ Box 13: Replication, not sampling logic, for multiple case studies (p.110)
- ▸ Box 15: The unit of analysis: A critical concept in doing case studies (p.114)

♦ Jakobsen, C. H. & McLaughlin, W. J. (2004) Communication in ecosystem management: A case study of cross-disciplinary integration in the assessment phase of the interior Columbia Basin Ecosystem Management Project. *Environmental Management*, 33, 5, 591-605.

Tharenou, P., Donohue, R. & Cooper, B. (2007) *Management research methods.* Melbourne, Australia: Cambridge University Press. ▸ Action research designs

Gray [3/8] ▸ Action research and change (Pp. 373-383, 390-391)

Reason, P. & Bradbury, H. (Eds.) (2001) *Handbook of action research: Participative inquiry and practice*. London: Sage. ▸ Introduction (Pp.1-2)

OPTIONAL: Empathy Heroes: 5 People Who Used Empathy to Change the World.
https://www.ashoka.org/story/empathy-heroes-5-people-who-used-empathy-change-world

➢ Putting the pieces together

4/ 4 ♦Kenwick, R. A., Shammin, M. R., & Sullivan, W. C. (2009) Preferences for riparian buffers. *Landscape and Urban Planning*, 91, 88-96.

♦ Predmore, S. A., Stern, M. J., Mortimer, M. J. & Seesholtz, D. N. (2011) Perceptions of legally mandated public involvement processes in the U.S. Forest Service. *Society and Natural Resources*, 24, 1286-1303.

ETHICS, IMPACT AND THE LARGER VIEW

➢ Ethics, humaneness, and the burden of responsibility

4/ 9 Gliner, J. A. & Morgan, G. A. (2000). *Research methods in applied settings: An integrated approach to design and analysis*. Mahwah, NJ: Lawrence Erlbaum. ▸ Ethical problems and principles (Pp. 32-39)

Sieber, J. E. and Levine, R. J. (2004) Informed consent and consent forms for research participants. *American Psychological Society*, 17(4), 25-26.

Beebe, J. (2001) *Rapid assessment in process: An introduction*. Walnut Creek, CA: Altimira.
- ▸ Figure 7.3: Statement of professional an ethical responsibilities
- ▸ Figure 7.1: Sample informed consent form

Gray [3/12] ▸ Ethical issues in using the digital technology (Pp. 275-281)

eResearch: FAQ (selected items) http://www.umich.edu/~eresinfo/errm/faq.html

4/11 ∞ **Small Experiments: Presentations**

4/16 ∞ **Small Experiments: Presentations**

4/18 ∞ **Small Experiments: Presentations**

➢ "Enquiry" and Creativity

4/23 Grady, K. E. & Wallston, B. S. (1988) *Research in health care settings*. Newbury Park, CA: Sage.
- ▸ Models of research (Pp. 10-17)

Rice, B. (1982) The Hawthorne defect: Persistence of a flawed theory. *Psychology Today*, 16(2), 70-74.
Available at: http://www.cs.unc.edu/~stotts/204/nohawth.html (Pp.1-4)

Loehle, C. (1990) A guide to increased creativity in research -- inspiration or perspiration? *BioScience*, 40, 123-129.

4/25 🕛 **Mini-last due - 5 pm**

Tu	Th	Tuesday	Thursday
January	10		Introduction
15	17	**Overview of Research** → Independent & Dependent Variables; → Course Logo	♦ Abstracts
22	24	**Measurement Validity** → Reliability; Criterion & Content Validity	∞ Measurement and validity
29	31	→ Construct validity	🕐 Mini-one due Validity review
February 5	7	**Research Design** → Design Strategies; Internal & External Validity	∞ Small Experiment: Alternative designs
12	14	→ True & Quasi; Factorial; Interaction Effects	Research in practice 🕐 Mini-two (Part I) due
19	21	Examining empirical articles	Toward Mini-two (Part II)
26	28	**Research Strategies and Basic Tools** → Surveys, Questionnaires	🕐 Mini-two (Part II) due ∞ Groups begin to design studies
March 5	7	**'spring' break**	
12	14	→ Observational Methods; Coding	Design Review
19	21	→ Interviews, Focus Groups, Asking questions	Toward Mini-three
26	28	→ Evaluation, Qualitative/Quantitative	🕐 Mini-three due *What to do with the data*
April 2	4	→ Case Studies, Action Research	→ ♦ Putting the pieces together
9	11	**Ethics, Impact, and the Larger View** → Ethics, humaneness, the burden of responsibility	∞ Small Experiment: Presentations
16	18	∞ Small Experiment: Presentations	∞ Small Experiment: Presentations
23	(25)	→ "Enquiry" and Creativity	🕐 Mini-last due