

# Syllabus for Behavior Observation

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## Course Description:

This asynchronous on-line course deals with the use of well-established behavior observation methods to answer questions of anthropological interest. These standard and well-validated approaches are used in the behavioral, medical, consumer, biological, and social sciences. They range from traditional time diary techniques and direct observation to newer Internet self-reports mediated recordings and storage.

## Course Overview and Objectives:

The goal of this course is to instruct graduate students and other researchers in the use of a variety of standard behavior observation methods employed in a field setting that are useful in empirically answering a variety of questions of anthropological interest. Many of these approaches are commonly used in primatology, education, medicine, public health, marketing, and across the social sciences. Research questions to which such methods have been applied include shifting patterns of gender-related work and leisure, classroom behavior, infant and caretaker interactions, consumer choice in markets, behavior in public spaces, doctor-patient interactions, conversational topics, social networks, food and labor exchanges, and subtle but important behavioral variation according to different social and locational contexts. Our goal is to familiarize participants with fundamental methods used and the kinds of behavioral data produced and the sorts of research questions to which such data is relevant or required.

Students taking this course will (1) gain comprehensive familiarity with the uses to which behavior observations have been applied in the behavioral sciences with a special emphasis on ethnographic approaches; (2) learn the basic techniques of behavior observations and their variable utility for answering specific research questions; (3) acquire hands-on experience by constructing behavior classifications and by using three major techniques for data collection; and (4) apply these skills to their own independent projects.

**Textbook and Readings:** The primary text for this course is *Measuring Behavior* (3<sup>rd</sup> edition) by Paul Martin and Patrick Bateson, Cambridge University Press. Numerous additional readings will be posted in PDF format on the course website.

**Software:** The use of free *R* software is demonstrated in the video tutorials for this course, and the use of this software is highly advised for the course unless you have prior familiarity with generalized linear mixed models. Available for Mac and Windows operating systems, the *R* software may be downloaded here: <http://www.r-project.org/>

## Exams and Grading

**Grading policies:** Each week, students will read assignments and written overviews of methods, listen to narrated Power Points or video tutorials, and submit written reactions to course materials and carry out and write up methodological exercises. These exercises will help students develop hands-on experience and a practical understanding of how observational methods work. In the last week of the course, students will apply their new skills to their own projects. Assignments must be turned in on or before the due date, unless excused with university-approved documentation. Students without a legitimate excuse will lose one half grade for each day late.

### Grading Summary:

Assignments 1-14 will typically be worth 100 points each for a total of 1400 points (or, 76%). The final assignment in Module 15, the final project, will be worth 400 (or, 24% of the grade)

### Grading Scale:

A+. 100 – 97. A. 96.9 – 93. A-. 92.9 – 90. B+. 89.9 – 87. B. 86.9 – 83. B-. 82.9 – 80. C+ C 76.9 – 73. C- 72.9 – 70. D+ 69.9 – 67. D 66.9 – 63. D- 62.9 – 60. F Below 60

For most modules, students will be required to write a 700-word response and analysis of the readings or complete a methodological assignment with write-up and analysis, and at the end of the course, write a research design using behavior observations.

### Classes, Readings, Assignments, Homework & Attendance Policy:

This is an intensive five-week course and students should read all materials and completed the methodological assignments following the course schedule.

For each lesson there is either a reading or methodological assignment. For **Reading assignments** students will post an initial 700-word response to a discussion question related to the readings (e.g., intrusiveness and accuracy trade-offs in recording behavior). **Methodological assignments**, on the other hand, are hands-on assignment requiring students to collect data and/or code and analyze data using one of the observational methods. There are a total of 14 assignments for the course and each is worth 100 points each, with the reports from the methodological assignments typically paired together for a total of 200 points per report. In responding to your fellow students comments, observations, and reflections should be constructive and collegial.

**Final Project:** In the final assignment, students will write a research proposal that appropriately matches a research question with a particular method for data acquisition. Students must justify the method they are using by comparing it to alternative methods they have learned in class (see below, Module 15). In some cases, a student will use more than one method. The template for the final paper will strongly focus on research design. This assignment will integrate the process

of hypothesis formulation, sampling, methods, and analysis acquired through course readings and practical assignments.

### **Classroom Behavior Rules:**

**Academic Honesty:** Unless it is specifically connected to assigned collaborative work, all work should be individual. Evidence of collusion (working with someone not connected to the class or assignment), plagiarism (use of someone else's published or unpublished words or design without acknowledgment) or multiple submissions (submitting the same paper in different courses) will lead to the Department's and the University's procedures for dealing with academic dishonesty. All students are expected to honor their commitment to the university's Honor Code (available online at <http://www.registrar.ufl.edu/catalog/policies/students.html>).

**Disability Accommodations:** If you are a disabled student in need of special arrangements for exams or homework, we will do all we can to help. Students requesting classroom accommodation must first register with the Disability Resource Center (<http://www.dso.ufl.edu/drc/>). The DRC will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

**Accommodation for Students with Disabilities:** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Please make any requests by the second week of class.

**UF Counseling Services:** Resources are available on-campus for students having personal problems or lacking clear career and academic goals that interfere with their academic performance. These resources include:

1. University Counseling and Wellness Center, 3190 Radio Road, 392-1575, personal and career counseling
2. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling
3. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling
4. Reading & Writing Center, Broward Hall, 392-0791, writing assistance, study skills, test preparation

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## Course Schedule

### Overview

Each lesson will begin with a narrated Power Point or written overview that describes the assignments and readings for that lesson. The course will begin with an overview of direct and indirect behavioral approaches focusing on their strengths, weaknesses and suitability for answering specific research questions. We then will turn to lessons dedicated to survey methods, sampling issues, time diaries, systematic spot or instantaneous sampling of behavior, continuous monitoring of behavior, and computer-assisted and Internet based approaches to collecting behavioral data in the field. In each of these approaches we will consider the problems of subject reactivity, observer intrusiveness, and subject and observer accuracy. We will also consider the issue of behavior classification and coding.

Dividing a behavior stream into discrete kinds of behavior is not a task to be taken lightly. Therefore, we will familiarize students to a variety of standard behavior classifications from anthropology, education, sociology, and psychology and the kinds of research questions upon which they are based. During the course, participants will collect their own behavioral data using the methods of recall, survey and direct observation (spot and continuous), construct behavior classifications or codes of the collected data, and practice analyzing their data.

During the final week of the course students will also be asked to produce a formal presentation in which they outline a specific behavioral research project they anticipate investigating in the future, using one or a combination of the approaches presented in the course. These presentations will be made available to all students.

All readings indicated below will be available on-line except for the main text by Martin and Bateson.

## Class Schedule

### Module 1: Introduction to Behavior Observation Methods

**Reaction Assignment:** After reading the two assignments below, write a 600 word statement on how you think behavior observations can enhance your previous, current, or planned research given that the hallmark of ethnographic research is “participant-observation”.

**Readings:** overview of the range of conceptual approaches and methods

- Johnson and Sackett (1998) “Direct Systematic Observation of Behavior.”
- Paolisso, Michael and Raymond Hames.(2009) “Methods for the Systematic Study of Human Behavior”.
- Ziker, John “The Long, Lonely Job of Homo academicus” (file=Ziker-Faculty-Workload.pdf)

### Module 2: Time Diaries

**Methodological Assignment:** Time Diary Interviews. First read Stinson and Kahneman et al. below. Then interview four people following a time diary data entry format provided below and American codes coding scheme: “Time Diary Format” (Template) and “American Codes” (ATUS codes). Transform the raw data into the hierarchical scheme specified in the ATUS format and prepare a 600 word discussion and statistical analysis of your findings and post it on the course web site.

**Readings:**

- Stinson, Linda. 1999. Measuring how people spend their time: a time-use survey design.
- Kahneman et al. “A Survey Method for Characterizing Daily Life Experience: The Day Reconstruction Method”
- Basic “Time Diary Format” (Template)
- “American Codes” (ATUS codes).

### Module 3: Interviews versus Observations: Strengths and Weaknesses

**Assignment:** Post about a 600 word reflection of the problems you encountered in doing the time diary interview (e.g., how did you handle multi-tasking such as driving while phoning?; or food preparation while chatting with another?), the methods you used to insure accuracy, and ideas about the strengths and weaknesses of the method. Also, read posts by other students and comment on their reflections, tips on how to make the data more reliable and valid.

## Readings:

- Stange et al. (1998). “How valid are medical records and patient questionnaires for physician profiling and health services research?”
- Virginia Vitzthum (1994) “Suckling Patterns: Lack of Concordance Between Maternal Recall and Observational Data”

## Module 4: Behavior Coding

**Assignment:** Based on the readings in Module 3, discuss some of the fundamental problems inherent in recall and observational approaches. How can subject recall be enhanced? For example, to what extent do you believe that preparing subjects would enhance the accuracy of their reports? Are there other ways to enhance subject recall accuracy such as a simpler behavior coding scheme or better interrogation techniques?

In Module 4 we consider some of the issues in coding observed behavior by examining a variety of coding schemes in the assigned readings. Coding schemes must reflect particular research questions. Consequently, there is no right coding scheme. Some of the schemes are hierarchical (e.g., work, agriculture, weeding is in an hierarchical form). There is no assignment associated with this module but it will help prepare you for thinking about your coding schemes to be used in Modules 13-15.

## Readings:

- Pianta-Belsky-Classroom “Opportunities to Learn in America’s Elementary Classrooms”
  - Classroom Belsky “Chapter 44 “Operations Manual...”
  - Recess-Belsky “First Grade Unstructured Peer Interaction”
- Johnson-Sackett-codes. Designed for cross-cultural research
- “Kenya Project”

## Module 5: Beyond Time Allocation

**Assignment:** After reading the articles below, write a 600 word essay on how contextual information (e.g., date, time, location) combined with internal experiences (affective states described by Chick) can create an empirically grounded “thick description” of daily activities.

## Readings:

- Fouts, Hewlett, and Lamb (2005) “Parent-Offspring Weaning Conflicts among the Bofi farmers and Foragers of Central Africa.”
- Hames (1987) “Relatedness and garden labor exchange among the Ye’kwana”
- Chick, Gary. (1994) Experience sampling in anthropological research.

## Module 6: Modern Methods

**Assignment:** Read the articles below which represent rather broad and very narrow approaches to observing behavior. Compare and contrast these approaches in terms of how the protocols were developed in the context of the problems they sought to illuminate and how the data were recorded and compiled to produce gross or detailed patterns of behavior.

- Gravlee, Clarence C., Shannon N. Zenk, Sachiko Woods, Zachary Rowe, and Amy J. Schulz. 2006. Handheld Computers for Direct Observation of the Social and Physical Environment. *Field Methods* 18 (4): 382-97
- Radesky et al. (2014) Patterns of Mobile Device Use by Caregivers and Children During Meals in Fast Food Restaurants

## Module 7: Focal observation methods

**Methodological assignment:** Students will use focal observation methods to record behavioral events as they occur during continuous observations. See the methodological assignment in the module for additional details.

### Readings:

- Martin and Bateson: Chapter 1–5
- Koster, J. 2006. The use of the Noldus Observer 5.0 and Psion handheld computer in a remote fieldwork setting. *Field Methods* 18:430–36.

## Module 8: Analysis of behavioral events

**Methodological assignment:** Students will use Poisson regression (generalized linear models) to analyze their data from the previous module, Module 7. The use of these statistical methods is demonstrated in a video tutorial, and an example write-up is provided.

### Readings:

- Martin and Bateson, Chapters 9 and 11
- UCLA tutorial: <http://www.ats.ucla.edu/stat/r/dae/poissonreg.htm> (reading is optional)
- Matsuda, Ikki, Augustine Tuuga, Yoshihiro Akiyama, and Seigo Higashi. 2008. Selection of river crossing location and sleeping site by proboscis monkeys (*Nasalis larvatus*) in Sabah, Malaysia. *American Journal of Primatology* 70: 1097-1101. (reading is optional and demonstrates the use of Poisson regression for observational data)

## Module 9: Scan sampling observational methods

**Methodological assignment:** Students will use spot check observational methods to record behavioral states exhibited by individuals on multiple occasions. Students will gain additional familiarity with sampling schemes and behavioral coding.

### Readings:

- Mulder, Monique Borgerhoff, Tim M. Caro. 1985. The Use of Quantitative Observational Techniques in Anthropology. *Current Anthropology* 26: 323-335.

## Module 10: Analysis of scan sampling data

**Methodological assignment:** Students will use multilevel logistic regression models to analyze the data that they collected in the previous module, Module 9. These approaches offer advantages over analyses that apply OLS regression assumptions to the analysis of aggregated proportions of observational data. The use of these statistical methods is demonstrated in a video tutorial, and an example write-up is provided.

### Readings:

- Koster, Grote, and Winterhalder. 2013. Effects on household labor of temporary out-migration by male household heads in Nicaragua and Peru: An analysis of spot-check time allocation data using mixed-effects models. *Human Ecology* 41: 221-237.
- Scelza, Brooke A. 2009. The grandmaternal niche: critical caretaking among Martu Aborigines. *American Journal of Human Biology* 21: 448-454. (optional reading)

## Module 11: Inferring social networks from observational data

**Methodological assignment:** Students will use observational methods to document behavioral interactions among a group of individuals. This assignment draws on work by animal behaviorists, who regularly use observational methods to infer social networks in non-human species.

### Readings:

- Cairns, Sara J., and Steven J. Schwager. 1987. A comparison of association indices. *Animal Behaviour* 35: 1454-1469.
- Lusseau, David. 2003. The emergent properties of a dolphin social network. *Proceedings of the Royal Society of London B: Biological Sciences* 270: S186-S188.

## **Module 12: Visualizing social networks of behavioral interaction**

**Methodological assignment:** Students will use the *igraph* software package in *R* to visualize the data that they collected as part of the previous assignment in Module 11. This assignment gives students familiarity with principles of “two-mode” social network analysis. The use of these methods is demonstrated in a video tutorial, and an example write-up is provided.

### **Readings:**

- Bird, Rebecca Bliege, and Eleanor A. Power. 2015. Prosocial signaling and cooperation among Martu hunters. *Evolution and Human Behavior* in press.
- Martin and Bateson, chapter 10 (optional reading)

## **Modules 13, 14, 15. Final Project: Integrating Observations into Research Design and Student Presentations**

In the final section of this course, students will submit a 6,000 word research proposal to use one or more of the behavior observation research methods to investigate a research problem of their choice. Each proposal must have a clear research design and set of explicit hypotheses to be tested. Students will clearly justify why they selected the methods they plan to use and compare those methods to other observational methods and traditional survey or interview methods. A detailed format of the proposal will be posted. Finally, students will be randomly assigned to comment on two of the research designs written by other students. Each commentary will be 250 words long.

## **Module 13: Basics of Research Design**

**Research Design:** Students will prepare a PowerPoint presentation in which they outline a research question to be investigated, the site and study population among whom the research will be conducted, a sampling strategy for gathering data, and a plan for the analysis of the data. This presentation will serve as the basis of the peer review in the following module.

### **Readings:**

- Hames, Raymond. "Time allocation." *Evolutionary ecology and human behavior* (1992): 203-235.
- Martin and Bateson, chapters 6–8

## **Module 14: Peer Review of Research Design**

**Assignment:** Students will be randomly assigned to comment on two of the research designs written by other students. Each commentary will be 250 words long.

## **Module 15: Research Proposal**

**Research Proposal:** In this final project, students will write a 6,000 word research proposal that incorporates the research design above and a set of specific hypotheses to be tested, how data for the hypotheses will be collected through behavior observations, sampling issues, and why behavior observations provide a more valid and reliable methods for data collection than non-observational methods.