Psychology Department Research Sequence
PSYC200WR: Lab in Experimental Methods
Nancy Gourash Bliwise

The undergraduate mission of the psychology department is to teach students the scientific basis of behavior and to provide hands-on experience in psychological research. All of our students conduct their own research in the context of our statistics and methods sequence, and approximately 40% of our undergraduates gain experiences working in a faculty member's lab. My overarching goals for the research sequence are that upon completing these classes, students 1) no longer skip over the method and results sections of journal articles and 2) can apply quantitative reasoning to new data. The *Piedmont Project* highlighted the need for research on behavior change and how psychology can contribute to the development of *sustainable environments*. In this sequence, students first will *collect and analyze data on environmental attitudes and behavior* (PSYC230). Using behavior change theories (e.g., Theory of Planned Behavior, Environmental Change Model), students will develop a questionnaire, gather data, and test hypotheses drawn from theory. They will develop statistical skills while *testing theoretically-driven hypotheses related to sustainability*. The PSYC200WR class requires that students complete three studies using methods typical of psychological research – behavioral observation, surveys, and experimentation. The behavioral observation study is conducted as a class and will examine how status and perceived expertise influence collaboration while *undergraduates working in small groups set priorities for campus sustainability initiatives and develop a plan for engaging students in these efforts*. My syllabi are electronic (one effort to lower paper use) and interactive. Therefore, I will present only the relevant goals, requirements and assignments for each class. I would like to thank my colleagues in the *Piedmont Project* for the lively discussions and helpful suggestions for bringing sustainability into a highly structured course.

PSYC230: Applied Statistics for Psychology
Fall, 2008

Class: MWF 3:00-3:50 **WH110**
Labs: Th/F Check Schedule **Dental 123**

COURSE OVERVIEW

This course emphasizes the learning of statistical concepts and procedures as well as the application of statistics to research questions typically encountered in psychological research. While it covers many of the concepts addressed in more mathematically-oriented statistics classes, it also focuses on the statistical techniques found in the psychological literature and the understanding and interpretation of the results of statistical tests. Thus, this class moves beyond calculations to the application of statistics

Goals

I believe that all thinking adults need to have a good appreciation of the science relevant to their career choice and to how research can be used in every-day decision making about health, safety, and family. So, as a first step toward understanding research findings, my general goals are that you 1) understand what statistics are and 2) understand how statistics work in the "real" research world.

Objectives

Through reading, lectures, homework, and computer-based laboratory exercises students should be able to meet each of the objectives listed below.

Understand basic concepts of probability, sampling, sampling distributions, and error.

- [x] Be able to calculate and interpret descriptive statistics including measures of central tendency, variability, and association.
- [x] Be able to calculate and interpret univariate and bivariate inferential statistics.
- [x] Become proficient with the SPSS program for computer-assisted statistical analysis.
- [x] Be able to develop a statistical hypothesis drawn from theory and/or previous research.
- [x] Know how to select the appropriate statistical test for a particular research question.
- [x] Be able to accurately report statistical analyses and findings, and to offer plausible interpretations of findings using theory and previous research.

Course Requirements

Homework: 100 Points

Homework problems are assigned from the required textbook (Hurlburt, 2006) Set B supplement unless otherwise noted. The supplement is posted on Blackboard in the Homework folder. The purpose of homework is to provide you with an opportunity to master equations and their functions. Practice is necessary for such mastery, thus homework tends to be a bit repetitive. Do not limit yourself to the assigned problems for homework. Do as many problems as necessary to fully understand a statistical procedure.

In order to receive full credit on homework assignments, **all** calculations in **all** of the steps required to solve these problems must be submitted with your answers. Merely writing down the answer to the problem is **not** sufficient. Work must be legible to receive full credit. I have some ongoing night vision problems; handwritten homework must use large print, dark pencil or pen, and be organized neatly in order for me to be able to read it (as I grade papers in the evening). High contrast is also important; I may not be able to distinguish words and numbers if you use graph paper or write with a light lead pencil. If you have difficulty writing legibly, I may ask you to type your homework assignments. I will let you know if I am having trouble reading your handwriting; after the first notification, your work will not be considered complete if it is not legible.

Homework is graded as follows: All students who submit complete and legible answers to all assigned homework questions receive a grade of "C" for "Complete". Students whose work is incomplete or illegible will receive a grade of "I" for "Incomplete/Illegible". Partial credit is sometimes given for problems that were initiated but not fully completed; partial credit is at the instructor's discretion.

Students may work collaboratively, in small groups of 2-3 (no more than 3 students) on homework assignments. If you work in a group, each member must indicate that s/he made an active contribution to the homework by signing the homework assignment before it is submitted. Your signature is required in order to receive credit. Signing homework for another student is considered a violation of the honor code. Asking a student to add your name to homework to which you did not make an active contribution is considered a violation of the honor code.

Homework problems are listed on the course schedule.

The lowest homework grade will be dropped in the final calculation of course grades; the remainder will contribute to the final score on a percentage basis.

Laboratory Exercises: 250 Points

Laboratory sessions provide instruction in computer-assisted statistical analysis. SPSS (Statistical Package for the Social Sciences) must be used for all analyses. All analyses will be conducted using a common database on environmental attitudes and behavior generated by the class. During laboratory sessions, additional exercises to be completed using SPSS will be assigned. These assignments will require that you generate hypotheses drawn from the Theory of Planned Behavior and previous research that will allow us to learn more about how psychologists can contribute to sustainability.

Students may collaborate on statistical analyses. The written report that summarizes the analyses, findings, and interpretation must be prepared independently and should contain original ideas.

The lowest laboratory grade will be dropped in the final calculation of course grades; the remainder will contribute to the final score on a percentage basis.

Examinations: 550 Points

There will be four one-hour examinations and a final examination. As concepts introduced early in the class will carry over to statistical techniques learned later in the class, all exams after the first will have a cumulative component. Students are *not* required to memorize formulas; **all** necessary formulas will be provided for examinations. All examinations and all portions of the exams are closed book. All exams must be completed independently.

Students must bring a calculator to all examinations. Graphing calculators (or other calculators that store text) are permitted for exams but must be checked by the instructor or a teaching assistant immediately prior to the exam. Cell phones and other devices (e.g., Blackberry, Palm Pilot) that can store text are not permitted during the exam.

All exams have a similar format. Tests begin with true/false and multiple choice test items designed to assess basic knowledge. They are followed by a series of short answer questions. Finally, problems that demonstrate your ability to calculate and interpret statistics are given. SPSS printouts that require your interpretation will be presented in the SPSS lab scheduled immediately before or after an exam (see lab schedule). These questions will be included as part of your exam score. For this testing format to work (which is designed to give more calculation time to the in-class exam), it is very important that those who have SPSS labs on Thursday do not reveal the content of the exam questions to those who have labs on Friday. Discussing exam content is a violation of the honor code.

Participation: 100 Points (75 points class/25 points lab)

Active participation is an essential component of classroom and laboratory learning. Students are expected to fully participate in class and laboratory exercises. All students must bring a statistical calculator to each class session. A statistical calculator has square and square root functions and calculates the mean, standard deviation, sums, and sums of squares. All students must also bring their radio frequency keypads ("clickers") to each class session. Class participation points are based on chapter summaries, questions about course readings (text and articles) and practice exercises.

Extra Credit : 30 Points

Students may earn extra credit points (up to a maximum of 30 points) that will be added to their total class score. These points will be based upon a combination of the following: 1) completing web-based tutorials on key statistical concepts; tutorials must be completed before the exams that cover the relevant material; 2) correctly answering students' questions on statistical concepts (maximum of 5 points); 3) answering quiz questions about the readings (maximum of 15 points); 4) questions posted before each class based on class readings and/or material covered in the previous class (maximum 5 points); 5) class inquiry (maximum 5 points); 6) creating art about sustainability that explains or uses some aspects of statistics (maximum 5 points); and 7) attendance at *one* student sporting or cultural event (3 points). Except

for the art, extra credit assignments must be completed independently. Extra credit assignments must be completed and submitted by the date noted on the description of each type of extra credit.

Lab Schedule

Labs Meet Thursday and Friday in 1462CR- Room 123

Lab Dates	Topic	Points	Lab Reports Due
8/28 & 8/29	Introduction to Sustainability Attitudes and Behavior	-	No Report
9/4 & 9/5	Central Tendency Views of the Environment	25	9/10
9/11 & 9/12	Variability Intention to Recycle	25	9/17
9/18 & 9/19	Central Limit Theorem Exercise	10	No Report
9/25 & 9/26	**Review & SPSS Exam #1**	-	-
10/2 & 10/3	One-Sample *t*-test Students Attitudes - Population	25	10/8
10/9 & 10/10	Independent ***t***-tests Gender Differences in Motives Dependent ***t***-tests Environmental Behavior Week1 vs. Week5	25	10/27
10/17 & 10/18	**Review & SPSS Exam #2**	-	-
10/23 & 10/24	Correlation Attitudes and Intentions Regression Testing Theory of Planned Behavior	50	11/12
10/30 & 10/31	**Review & SPSS Exam #3**	-	-
11/6 & 11/7	Oneway ANOVA Region Differences in Attitudes	25	11/27
11/13 & 11/14	**Review & SPSS Exam #4**	-	-
11/20 & 11/21	Repeated Measures Change in Behavior over Time: Linear vs. Quadratic Factorial ANOVA Gender x Region Differences	40	12/3
12/4 & 12/5	Chi-Square Tests Who Recycles?	25	12/10

PSYC200WR: Lab in Experimental Methods
Fall, 2008

Class: T/TH 1:00-2:25 **WH110**
Labs: M/W Check **Psychology 127**

COURSE OVERVIEW

Now that you know the range of statistics available and how they are applied in psychological research, it is now time to learn how to ask and answer our own questions. This course focuses on quantitative research and examines the three methods typically used in psychological research – behavioral observation, surveys, and experimentation. Psychology faculty believe that the best way to learn is by doing, therefore, we will conduct studies using each of these techniques.

Goals

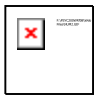
I believe that all thinking adults need to have a good appreciation of the science relevant to their career choice and to every-day decision making about health, safety, and family. So, a major goal for this class is that students learn what constitutes good research. In addition, good psychologists also need to be able to critically evaluate published research and to learn how to ask and answer questions about human behavior. So, two additional goals are to become proficient in reading the psychological literature and to be able to conduct psychological research.

I also have one very personal goal...that by the end of this class, you no longer skip over the methods and results sections of the research articles that you read for this and other classes.

Objectives

Through reading, lectures, laboratory discussions and exercises, students should be able to meet each of the objectives listed below.

Describe with some depth the research strategies used in psychological research emphasizing the three most commonly used strategies -- behavioral observation, surveys, and experiments.



Identify and evaluate ethical issues relevant to different research strategies and populations typically studied in psychological research. Be able to discuss the basic principles embodied in the Nuremberg code and how they influenced the development of the APA ethical principles. Follow the APA ethical principles in the conduct of your research.

Critically evaluate published research. This includes making judgments about how well various aspects of the study design address the research question/hypotheses.

Prepare a concise evaluation of a published article that balances the strengths and weaknesses of the study reported and is respectful in tone.

Plan, execute and report the results of your own research studies. This includes being able to present your rationale for design choices made and to select and apply the correct statistic to test your hypotheses. Reports should be both concise and precise.

Apply the principles of good scientific writing and be able to correctly use APA publication format.

Work successfully on a team -- share the work equitably, negotiate meeting days/times with minimal conflict, respect team members' strengths and weaknesses, and produce a good quality product.

Course Requirements

Prerequisite

Applied Statistics for Psychology (PSYC 230) or its equivalent is a prerequisite for this course. We will be analyzing data using many of the statistical procedures learned in PSYC 230. You should also be familiar with SPSS. Students who have not successfully completed PSYC 230 are not eligible for this class.

Laboratory Participation: 75 Points

Research is a collaborative effort that requires much reading, thinking, writing, and plenty of discussion. Active participation in laboratory discussions and assignments is necessary and is required of all students. Course credit for lab participation and group participation in research projects will be assigned by teaching assistants.

Writing Support/Writing Requirement: 50 Points

Being able to clearly and concisely express your ideas in writing is necessary to effectively conduct and evaluate psychological research. Writing is heavily emphasized in this course. Students are graded on their writing skills as well as the content of critiques and research reports. This course meets the college distribution requirements for a post-freshman writing course. Thus, it is important that you take your writing seriously and respond to feedback. Students must receive a grade of "C" or better in the class in order to receive writing requirement credit.

To assist you with your writing, we will hold weekly "Writing Support" sessions, alternating on Wednesday and Thursday evening. In these sessions, we will discuss criteria for different components of writing requirements and do guided peer review. Students must attend and submit work for at least 5 sessions; the first session is required and students must attend at least one other session before Spring break. Meetings with the instructor to discuss the survey and experiment introductions also count as writing support sessions. You are welcome to attend as many additional as you wish. We can only accommodate 35-40 students in each session, so you will need to sign up in advance. You also are encouraged to use the resources of the Emory Writing Center. We may also refer students to the Writing Center for assistance.

Class Exercises/Homework: 200 Points

Planning and evaluating research is an active process that often requires demonstration and discussion. Class exercises and homework assignments are designed to help you practice newly learned skills and to demonstrate your knowledge of concepts. Some of these exercises will be planned in advance and posted on the PowerPoint slides for the class. Others will emerge spontaneously from class discussion; thus, it is extremely important that you regularly check Blackboard for course information. Class exercise will be based upon two different types of assignments: **1)** reading quizzes/blackboard posting and **2)** class activities. We also will have occasional homework assignments designed to prepare students for class discussions. Good class discussion requires that students complete and have a preliminary understanding of the material. To insure that students have grasped basic concepts in the reading, we will often begin our work with very brief quizzes drawn from the readings. At other times, students will be asked to complete some type of specific preparation for class and to post responses on Blackboard. These types of assignments will be graded. Unless otherwise noted, the grading of class exercises will be based on effort, thoughtfulness, and completeness rather than accuracy. It is important that students practice new ideas and skills, thus the emphasis of these exercises is on applying ideas rather than lack of errors. Occasionally, though, accuracy is important and, for these assignments, accuracy will be a part of the scoring criteria. Each student will be asked to sign written class exercises done collaboratively. Your signature is considered an "honor code" statement that you made an active contribution to the assignment. Other activities will be recorded via "clicker".

Article Critiques: 125 Points

Students formally evaluate one published research article and incorporate criticism of published research into the introduction of their survey and experiment research reports. The criteria for the evaluation of articles correspond to the type of research being conducted in lab (e.g., behavioral observation, surveys, and experiments) and the general issues discussed in class. Evaluations address only those aspects of research reviewed in lectures at the time of the

assignment. The critique assignments are progressive with later assignments expanding upon issues addressed in previous evaluations. Later critiques will be integrated into the Background and literature sections of research reports. Students are expected to incorporate feedback into later work. Guidelines are provided for the written critique and the critical evaluation of the literature in the introduction to articles. The critique is written collaboratively with first drafts of components assigned to team members. Students may discuss the literature for the introductions of their research reports, but the critical evaluation of the literature in the research reports should be written independently.

Research Reports: 450 Points

You will conduct 3 research studies over the course of the semester: 1) a behavioral observation, 2) a survey, and 3) an experiment. At the completion of each study, you will be asked to write a research report that introduces the study, summarizes the research question/hypotheses, methods, results, and your interpretation of findings. The survey and experiment research reports will incorporate more formal criticism of the literature in the introduction. Students may work in small research teams of 2-3 to conduct the studies and write the "Method" and "Results" sections of the reports. The "Introduction" and "Discussion" sections of all research reports, however, must be written independently and must include original ideas. All research reports must follow APA publication style.

Students are required to submit a complete first draft of the introduction of each research report to the instructor and a complete first draft of the full report to the TA of your lab section on the dates posted on your lab syllabus. We will read your drafts carefully and provide feedback on content and style. Students are expected to revise the report and incorporate the feedback provided into the final draft. Submit the final draft on the date noted on the syllabus. Up to 15 points will be deducted for failing to submit a complete first draft by the date posted.

Poster/Poster Session: 100 Points

At the end of the semester, students will present the results of their experiments to faculty, graduate students, and colleagues in a poster session. All members of the research team will prepare posters collaboratively. *The poster and poster session are required for a passing grade in the course.*

Extra Credit: 25 Points

Students may earn extra credit points (up to a maximum of 25 points) that will be added to the total class score. Extra credit points are based upon a combination of: 1) participation in web-based discussion of issues raised in class, 2) work in teams to help instructor develop and implement class discussion/exercises, 3) finding errors in published articles, 4) attendance at psychology department research colloquia (with write-up), 5) written comments on research reported in the popular press, 6) a creative exercise (e.g., song, video, artwork) that demonstrates some aspect of research methods in psychology, and 7) attendance at one student sporting or student cultural event. Descriptions of extra credit assignments and due dates are posted on Blackboard in the "Syllabus" folder.

Behavior Observation Study Instructions

Our first study will use behavioral observation as its strategy. For the first study (only), all of the students will implement the same design and we will combine data into one large data set for analysis. This will give students a "head start" on the project and will increase statistical power. Behavioral observation studies often have low statistical power because behavioral differences are often subtle (small effect sizes) and researchers may not have the resources to collect hundreds of observations. With 70 students in the class, we should be able to collect enough observations to have a reasonable test of our hypotheses.

The question of our observation study is primarily based in social psychology but also draws upon cognitive psychology. We are examining individual differences in nonverbal behavior (topic). The general research question asks “How can we explain differences in nonverbal behavior (e.g., smiling, self-touch, nodding, gesture) and verbal behavior (e.g., formal

language, interruptions, encouragement, jokes) during collaborative problem-solving tasks?" Two theoretical perspectives that emphasize power and status tend to dominate the literature on communication behavior: **1)** Social Dominance Theory (also known as social role theory) and **2)** Expressivity Demand Theory/Expectation States Theory. Social dominance theory suggests that those in more dominant, higher status social roles (older, male, dominant culture) are less likely to display "placating" behaviors like smiling and gazing. Expressivity demand theory emphasizes both gender socialization and the specific social contexts of the interaction when explaining differences in nonverbal and verbal behavior. Expectation States Theory is very similar to Expressivity Demand Theory but emerged from the study of task groups in work and education settings. Expectation States Theory is a bit more general and can be applied in a wider range of settings. Recently, social psychologists have studied expertise/competence as a social context of the interaction. The results of these studies reveal some very interesting statistical interactions. It appears that gender differences in behavior are influenced by the expertise/competence of the partners. We will work on this aspect of theory and previous research.

Methods students have struggled over the semesters to develop a task that allows men and women to be equally competent (as they are in most domains at Emory) but still have different levels of expertise. This semester, we are going to use a task that is about environmental awareness and sustainability on campus. Study participants will work in small groups to prioritize campus environmental programs in terms of cost and effectiveness and to develop strategies for implementing the highest ranked program. We will recruit participants from psychology and biology classes, thereby including some students who will have some knowledge of the biology of sustainability and some who will have knowledge of human behavior change.

The four primary goals of this first research study are to **1)** give students direct exposure to observation research, **2)** to compare and contrast different ways of measuring behavior – frequency, intensity, and duration, **3)** test hypotheses drawn from theory and previous research, and **4)** study a topic that is directly relevant to students' lives on campus -- sustainability.

There are several articles posted on Emory Online General Reserves for you to read as background literature. These articles should help you to understand the conceptual and empirical background of the study and to formulate specific hypotheses. It is *not* our intention that you read all of the articles; they are posted as a source of ideas for hypotheses. Once you develop your hypotheses, though, you should thoroughly read the articles that you selected as the "background and literature" for your study. Articles on sustainability are posted so that you can develop some background on the issues. I identified the articles as theory **(T),** research **(R)**, or sustainability **(S)**.

1. Athenstaedt, Haas, & Schwab (2004). "Gender role self-concept and gender-typed communication behavior in mixed-sex and same-sex dyads". While we are not really studying gender role self-concept, the analysis of a wide range of types of communication in same- and mixed-sex dyads is directly relevant to our study. **(T) (R)**
2. Carrus, G., Passafaro, P., & Bonnes, M. (2008). "Emotions, habits, and rational choices in ecological behaviour: The case of recycling and use of public transportation". This article provides a good overview of factors that may be involved in behavior. **(S)**
3. Dovidio, Brown, Heltman, Ellyson, & Keating (1988). "Power displays between women and men in discussions of gender-linked tasks: A multichannel study". This study addressed different types of tasks as well as different types of nonverbal behavior. **(R)**
4. Hall, Coats, & LeBeau (2005). "Nonverbal behavior and the vertical dimension of social relations: A meta-analysis." This is a good source of additional literature and will be very helpful for explaining your findings. **(R)**
5. Hall & Friedman (1999). "Status, gender, and nonverbal behavior: A study of structured interactions between employees of a company." This article reports an observation study of nonverbal behavior between men and women who work together. **(R)**Structured observation techniques are used to examine status and gender differences in nonverbal behavior. Because the study examines smiling, touch, and gaze, its findings are directly relevant to our study. **(T) (R)**

6. Hecht & LaFrance (1998). "License or obligation to smile: The effect of power and sex on amount and type of smiling". This is an experiment (and not a laboratory observation) but should help us set up hypotheses. It addresses type of smile and directly examines the power relationship between the two parties. **(R)**
7. Karakowsy, McBey, & Miller (2004). "Gender, perceived competence, and power displays: Examining verbal interruptions in a group context." This is an interesting study of verbal behavior in mixed gender groups. This may be a helpful source of hypotheses about groups. **(R)**
8. Koch, S. (2005). "Evaluative affect display towards male and female leaders of task-oriented groups." This study compares laboratory vs. naturalistic observation of men and women working in groups. **(R)**
9. Kowner, R., & Wiseman, R. (2003). "Culture and status-related behavior: Japanese and American perceptions of interaction in asymmetric dyads." This paper reports a sophisticated analysis of perceptions and behavior, so you may not follow all of the statistics. There is very little literature, though, on culture as a predictor, so this is very relevant to those who would like to pursue culture as a predictor (plus, the results are very interesting). **(R)**
10. LaFrance, Hecht, & Paluck (2003). "The contingent smile: A meta-analysis of sex differences in smiling." This is a thorough meta-analysis of studies of gender differences in smiling. It has a nice theoretical introduction (Expressivity Demand Theory) and presents the findings of the current literature in a thoughtful manner. This should provide a strong background on this area of research. **(T) (R)**
11. Morry, M. M., & Enzle, M. E. (1994). "Effect of gender dominance expectancies for knowledge on self-touching during conversations." This study directly measures expectancies (as we do in our study) and may help you develop hypotheses and/or interpret of findings. **(R)**
12. Nath, L. E. (2007). "Expectation states: Are formal words a status cue for competence?" This is a great article on language. **(R)**
13. Osbaldiston, & Sheldon, K. M. (2002). "Social dilemmas and sustainability: Propmoting peoples' motivation to 'cooperate with the future'". This is a good discussion of factors that influence change in environmentally conscious behavior. **(S)**
14. Ridgeway & Diekema (1992). "Are gender differences status differences?" This is a very thoughtful presentation of Expectation States Theory. It may be a good source of hypotheses and/or the rationale for your analysis. It is a very readable presentation of current theory. **(T)**
15. Schmuck, P., & Schultz, W. (2002). "Sustainable development as a challenge for psychology." This provides a good overview of the role of psychology in achieving sustainability. You may want to use components of this for your introduction. **(S)**
16. Thomas-Hunt, & Phillips (2004). "When what you know is not enough: Expertise and gender dynamics in task groups." While this study examines groups and not dyads, it assesses expertise and may be a good source of hypotheses. **(R)**
17. Whitelock, D., & Scanlon, E. (2001). "The role of gaze, gesture and gender in CSCL". This is an interesting study of college students collaborating on a physics problem. **(R)**

Task/Setting

Students will make behavioral observations of dyads doing two types of tasks: **1)** solving a statistics problem and **2)** working out a biological task. Students must videotape dyads doing each type of task and then rate the behavior recorded. Video recordings will be made in teams of two students to facilitate data collection and copying to DVD. Your TAs will outline all of this in lab.

Task behaviors must be recorded in university **public** settings or in quiet study rooms. The setting should have a table and chairs that allow the dyad to easily work together and have sufficient room for observers to set up a videocamera to record their behavior without being too intrusive. Group study rooms in the library, group study areas in the dorms and Cox Hall and at the SAC at Clairmont Campus are perfect for observations.

For safety reasons, observations may *not* be made in dorm rooms or apartments and observations must be completed before 10 pm.

Video cameras/videotapes

Video cameras and tripods are available for checkout from university media services at Cox Hall. We will also have a camera available for use in the Psychology Building or the Psychological Center, if needed; these cameras cannot be checked out. Please keep in mind that other students will need to record their observations within the same general time frame, so collaboration and co-operation are essential. Videotapes and DVDs will be provided in lab.

When you set up the videocamera, make sure that you can see the participants' faces clearly and the direction of gaze. You may need to ask participants to put their hair back (bring a rubber band or scrunchy just in case). Also, make sure the audio is turned up to ***maximum volume*** and that you are close enough to get a good sound recording. Test the recording and sound to make sure it is working before you record the participants.

Sampling

Students will select potential dyads from a list provided by your lab leader. Participants will be recruited from PSYC230 (just as you were). Students who participate will receive extra credit points for participating in this research study. Students in PSYC230 are being asked to recruit a friend to participate in the study with them. You and/or your research partner must contact the participants and arrange a suitable time for observation. Allow at least 30 minutes so that you have sufficient time to explain the procedure, record their behavior during the tasks, and collect additional information after the tasks. You also might want to think about offering an "incentive" for participation. Food works very well; students have successfully used pizza or desserts in the past. **You may *not* pay students for their participation**.

Study Procedures

1. Get to the observation room early and set up the table, chairs, and videocamera. Make sure you have all the forms that you need.
2. Greet the research participants, explain the study, and obtain informed consent (allowing participants to ask questions). Give each participant a pre-task rating sheet and ask him/her to complete the ratings. Make sure participants are physically separate when completing the forms so that they cannot see each others' answers (this would violate confidentiality).
3. Seat the participants together in front of the videocamera. Give the participants the first task sheet and explain the task.
4. Begin videorecording and leave the room. Return when the participants signal that they are finished or after 5-7 minutes (be sure to arrange a signal). Stop the recording.
5. Separate the participants and ask them to complete the post-task rating.
6. Again, seat the participants together in front of the videocamera. Give the participants the second task sheet and explain the task.
7. Begin videorecording and leave the room. Return when the participants signal that they are finished or after 5-7 minutes (be sure to arrange a signal). Stop the recording.
8. Separate the two participants and ask them to complete the second post-task rating.
9. Thank the participants for participating in the study. Conduct the debriefing.

Reliability will be established against a videotape of students doing similar tasks. This will be explained in more detail during your lab sessions.

Teaching assistants will review all study procedures with you during your lab session.

All video recordings and ratings must be made during the time period from **9/5 through 9/17**. You must sign up for participants to contact in your lab.

Variables

For each task, student observers will rate the following information:

PSYC200 Students	Participant/Group	Behaviors
Student/observer name (last name, first initial)	Participant number **"1" "2" "3" "4"**	***Verbal Behavior:***
Lab number	Age of participant	Look at group member while speaking "s"
Type of task	Sex of participant	Look at group member while listening "l"
Length of task in minutes	Ethnicity of participant	Positive interrupt/Affirm "a"
-	Group Gender Composition	Negative interrupt "b"
-	Group Ethnic Composition	Formal speech "f"
-	Group Relationships	Informal speech "i"
-		
-	-	***Nonverbal Behavior:***
-	-	Masking smile "m"
-	-	Duchenne smile "d"
-	-	Self-touch "t"
-	-	Head nodding "h"
-	-	Frown/negative "n"
		Chin thrust "c"
-	-	Point/gesture "g"

Video Recordings

Transfer your video recordings to DVD (it is much easier to rate from the DVD than the videotape). Follow directions provided by your TA.

You will rate verbal and nonverbal behavior using the score sheets provided to you and then enter the behavior into a data file posted online. Ratings will be entered separately by task (e.g., rank priorities, plan program).

You should practice making ratings before you do the ratings of your participants. This is essential; remember that you have an obligation to your colleagues to generate the best data possible. Practice videos will be posted on the class Blackboard site. You will also conduct reliability ratings on posted videos so that we can calculate the inter-rater reliability of our observations. You should do the practice ratings before you do the reliability ratings and ratings of study participants. It is extremely important for the quality of the study to know what you are doing.

Each observer will select two participants and rate only those participants (decide this with your observation partner so you don't choose the same person). When you label the participants, use the participant numbers designated at the beginning of the study.

All ratings must be entered into the online data file by a specific date (this will vary by labs). This is particularly important as I will need to have enough time to check and correct files. There will be 10 points assigned to the data collection process; points will be given based on whether you conducted your observation on the assigned date, and on the completeness, accuracy, and submission of usable data on time.

Identification

Identify each sheet using your last name, first initial, lab (1 - Jennie Pathman, 2 - John Berg, 3 - Kile Ortigo, 4 - Maggie Krysiak, 5 - Marina Wheeler), the participant number, and the type of task (1 - Cost/Effectivenes Priorities; 2 - Implementation). You also will conduct 1 reliability observation.. Identify the reliability sheets using the prefix **"r"** of the

reliability participant number. It is extremely important that you identify the rating sheets correctly as we need to create separate observation and reliability data files.

Fill in all of the blanks on the rating sheets. This information will be used to link the behavior data with the group members' questionnaire responses. The same information is gathered on the questionnaire but having it in two places is very helpful when we create the data file.

Participant number -- this is the number on the identification card in front of the participant ("1", "2", "3", "4"). Copy age and ethnicity from the participant questionnaire. Gender composition of group (1 - all female, 2 - majority female, 3 - equal, 4 - all male). Group ethnic composition (1 - same ethnicity, 2 - mixed ethnicity). Group relationships (1 - all strangers, 2 - mixed, 3 - all acquaintances, 4 - all friends).

Behavioral Variables

Verbal Behavior:

Gaze

We are defining gaze as an instance when the target is looking directly at his/her task partner. The literature suggests that dominance/status influences the time spent gazing while speaking to a work partner and while listening to the work partner, so we will be recording these separately.

Direct Gaze while Speaking ("s")

This marker indicates direct gaze while speaking to the group member. If you cannot see the eyes directly, use the direction of the head/face to determine direct gaze. The face should be positioned across and open to the group member or turned in a fashion that suggests directly looking at the group member (not looking down or away). Write down "s" in the column for the member to whom the target participant is speaking. If the target participant is speaking to the group in general, and is looking back and forth across all the members, place an "s" in the group column.

Direct Gaze while Listening ("l")

This marker indicates direct gaze while listening to the task partner. If you cannot see the eyes directly, use the direction of the head/face to determine direct gaze. The face should be positioned across and open to the group member or turned in a fashion that suggests directly looking at the group member. Write down "l" in the column for the group member who is speaking (who the target participant is listening to).

Positive Interruptions/Affirm ("a")

An interruption is a break in typical turn-taking in which there is an intrusion on a group member's speech. Code this category if there was a positive interruption -- an intrusion on a group member's speech that expresses agreement with the speaker, is a positive request for elaboration, or completes the speaker's thought. Affirmations are comments designed to confirm a statement, praise the response, or encourage the speaker to continue. Examples include "OK", "good idea", "yes". An affirmation can also be a "back-channel" response -- a sound like (mmhhmm, or uh huh) that expresses a desire for the speaker to continue. Write down "a" in the column for the group member who is speaking (who the target participant is agreeing with or encouraging).

Negative Interruptions/ Butting in ("b")

An interruption is a break in typical turn-taking in which there is an intrusion on a group member's speech. A negative interruption expresses disagreement with the speaker, raises an objection to the speaker's idea, or completely changes

the topic. Negative interruptions can also involve rude noises that suggest disagreement or disdain. Code any negative interruption as "b" ("butting in"). Write down "b" in the column for the group member who is being interrupted.

Nonverbal Behavior:

Smile ("m"; "d")

We will rate two types of smiles. The first category encompasses a number of different facial configurations. This smile appears to be a natural or normal smile as this smile uses facial muscles that produce an upturned mouth. The mouth may be open or closed. This smile, however, is thought to be a "masking smile" designed to display pleasure but lacking in underlying enjoyment. They are called "masking" smiles because they are thought to cover up or mask an underlying feeling. The target could also express a fake smile where the person pretends to be amused or expresses a "very funny" type of smile. All masking smiles are coded "m". The second type of smile is called a Duchenne smile. A Duchenne smile is a spontaneous smile of enjoyment. In this smile, the mouth is upturned, the skin around the eyes is gathered into creases or wrinkles, and the cheeks are rounded/upturned. This smile expresses clear enjoyment and is coded "d". Write down "m" or "d" in the column for the member to whom the smile is directed. If the target participant is smiling at the group in general, and is looking back and forth across all the members, place an "m" or "d" in the group column.

Self-touch ("t")

Any type of non-accidental touch of the participant's body or hair by the target is considered a self-touch. Frequent types of self-touch include twirling hair, rubbing forehead, crossing arms, and rubbing hands. Scratching an itch or pushing glasses up on the nose are <u>not</u> coded as these may be functional (glasses are falling down the nose). Write down "t" in the column for the group member who is speaking when the self-touch occurs. If no one is speaking (e.g., everyone is thinking about something), place the "t" in the group column. If the target participant engages in the behavior continuously (e.g., taps arm over and over; twirls hair continuously), write the code for each separate instance of the behavior but make a not on the sheet when the behavior is continuous.

Head Nod ("h")

Nodding the head up and down is a gesture that can indicate attention, agreement, and/or approval-seeking. This nonverbal gesture usually includes 2-3 up and down head movements in any one instance of nodding. Code "h" each time that you see the target participant begin to nod. Write the "h" in the column associated with the group member to whom the nod is directed.

Frown/Negative ("n")

Some facial expressions and non-verbal behaviors are negative. Code "f" if the target frowns or makes a face (e.g., rolls eyes) that indicates disapproval or negative feelings. Code negative nonverbal displays by writing "n" in the column of the group member to whom the negative expression is directed.

Gesture ("g")

We often gesture with our hands/bodies during conversation to help make a point, to emphasize content or emotion, or to modify our communication or direct our partner in some way. Code "g" for any directive physical movement that is not a chin thrust, frown, or self-touch. Write "g" in column of the group member to whom the gesture is directed.

Chin Thrust ("c")

A chin thrust is thought to be a non-verbal behavior that conveys confidence and/or dominance. You may have heard the phrase "leading with the chin"; this refers to a chin thrust. It is not thought to be arrogant, but a way to express

certainty, confidence, etc. (although for some, arrogance may accompany confidence and dominance). This nonverbal behavior can be a bit subtle and typically involves a slight tilt of the head. We will review the characteristics of a chin thrust in class. Write "c" in the column of the group member to whom the chin thrust is directed. If the chin thrust is directed to the group in general, record the "c" in the group column.

Length of Task

Each group may take a different amount of time to complete the task. Therefore, it is essential that you accurately record the task time. You can obtain this from the counter on the video player. Enter this for each task.

Observer/Researcher Task Ratings

After you and your observation/research partner have completed the behavioral ratings, you will need to determine (jointly) who was the dominant group member in the task. You also will need to judge the quality of the group's performance on the task (using a 1-7 Likert scale). Record these at the bottom of the rating sheet.

Timing of Observations

You will only be able to have the video cameras for 3-4 days. So, be sure to contact potential participants in advance and give yourself enough time to do your behavioral ratings. Do not save them until the last day, as you may not be able to arrange everyone's schedule or find a suitable room/location for observations. Remember that you are responsible for everyone's safety. Do not ask students to leave their dorms or apartments after a reasonable hour to participate in your study. I suggest lunch, late afternoon, evening or "study break" times. Be sure to return the video camera to the arranged location as soon as possible so that other students can use it. All video recording should be finished by 10:00 pm. Your TAs will outline the procedures for obtaining cameras and recording your observations.

Unobtrusive Observations

Behavioral observations should be as unobtrusive as possible. Your participants need to be able to work on their task/discussion without being distracted by the observation process. Using videocameras instead of live observation helps with measurement reactivity. Be sure to arrange the room/area for observations so that the participants are comfortable but that the camera is close enough to record faces, gestures, and sound.

Participant Pre-Task and Post-Task Self-Ratings

Both before and after the task, you will need to ask participants to complete some short ratings. The questionnaires before the task will ask for socio-demographic information, their perceived comfort with the task, and their personal ratings. The questionnaires after the task will ask them to rate how well they think they did as well as who they believed was the more "dominant" participant in the task and the most competent person. You will input these ratings into an online file using a link in Blackboard (Methods Labs/Behavioral Observation).

Ethical Issues

Because this is a structured observation, you will need to explain the procedures to the participants and obtain their informed consent for the study. You should have two consent forms with you for each participant. Make sure that each participant signs one copy of the consent form and the other copy is given to the participant for his/her records. Be prepared to answer any questions about the study. Keep the consent form; you will be asked to submit this when you turn in your Palm Pilot. Make sure the participant name is legible; we will need to make a list of names of students who participated in the study and must be able to read their names.

It should not be possible to identify a target based on the information recorded in this study. Any information gathered will be recorded by **your** initials and participant numbers only. You will be asking participants to make ratings before and after they work on the task and will need to keep track of these ratings before you input them into the data file. You should write only **your** initials, the task number and the participant number on each sheet so that participants cannot be identified.

At the end of the study, it is important that you thank the participants and ask if they have any questions about the study. Remind them that they have the right to receive the results of the study. If they request the results, it is your ethical obligation to follow through and provide them with a summary of the study findings; we will prepare this summary in class.

Practice Coding

It is essential for observation research that we have good inter-rater reliability. We accomplish this by practicing observations before we rate the DVDs and calculating a numerical estimate of inter-rater reliability for our observations. You must do two "practice" observations before you begin. You do these by accessing the "Practice Video" posted online and working with the coding system. Videos are posted on Blackboard .

Reliability Data

For inter-rater reliability, you must code two participants in the "reliability" video. You must submit the reliability ratings when you submit your study rating sheets. Identify the reliability rating sheets with your last name, first initial, then either "r1t1" and "r1t2" or "r2t1" and "r2t2" or "r3t1" and "r3t2" or "r4t1" and "r4t2". The "r#" refers to the participant number and the "t#" refers to the task number. Videos are posted on Blackboard.

Hypotheses

Each research team will test two hypotheses drawn from the literature. One research question/hypothesis should be a "main effects" hypothesis (e.g., Are there gender differences in smiling behavior during collaborative tasks? Is the duration of gaze longer during speaking than during listening? Do those who gesture more also do better on the task?). The second research question/hypothesis should include a moderating variable (e.g., Do gender differences in smiling behavior vary by type of task? Is the duration of gaze while speaking shorter in female/female dyads than female/male dyads? Does gesture influence task performance only in same sex pairs?). The questions presented above are just examples; there are many more hypotheses that can be tested. E-mail me if you are this far in the study instructions. If you are the first to e-mail me, you will receive five dollars [$5]. Make sure that you read the literature carefully before establishing your hypotheses. You need to be able to justify your hypotheses from what you have read. Students should not limit themselves to just testing the hypotheses; supplemental analyses may be necessary to explain findings. All team members will test the same hypotheses. Your hypotheses, however, must be different than those of other students in your lab.

Statistical Analyses

You have sufficient knowledge to independently conduct your statistical analysis using SPSS. Your lab leaders can help you think through what statistics are needed, but you and your teammates must ultimately choose the statistic used. SPSS is available on Cox Hall computers, in the library, and in some residence halls. A student version of SPSS can also be purchased from the publisher. You might want to use the tutorials (scale of measurement; choosing tests) posted on Blackboard to help you make your decision about appropriate statistical analysis. Don't forget that you might need to test assumptions before using particular tests. The guidebook you purchased for PSYC230 (Kirkpatrick and Feeney, 2006) is also a very useful guide to SPSS. It covers menu items as well as output. Finally, there are wonderful SPSS web files that will help you if you forgot specific commands; these are in the External Links folder on Blackboard.

Preparing Report

You must submit a complete rough draft to your lab leader for feedback about content and writing at least one week before the final report due date. Submitting first drafts, receiving feedback, and rewriting the paper are university requirements for all intensive writing (WR) courses. Points (15) will be deducted from your report score if a complete first draft is not submitted. Guidelines for writing the report are posted on Blackboard.

Most scientific writing is collaborative, so you will be writing the method and results section and constructing figures and tables collaboratively. The introduction and discussion sections of the research reports and the abstract must be written independently. Collaborative writing will be conducted using Blackboard wikis. Procedures will be outlined in lab.

Behavioral Observation: Study Task #1

Emory University – Sustainability Initiatives

Sustainability at Emory

Sustainability emerged as a university-wide concern through Emory's strategic planning process in 2004 and 2005 and was adopted as a core principle of the operation of the university. Executive Vice President for Finance and Administration, Michael Mandl, and Professor of Anthropology, Peggy Barlett, co-chaired a study committee that developed a vision for how Emory can make concrete our sustainability commitment. They made many recommendations in the areas of ecosystem, built environment, leadership, Emory community, and education and research.

The Brundtland Commission (1987) identified sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Your task is to

1) review the recommendations of the sustainability committee,
2) identify the recommendations that are being implemented on campus, and
3) rank the 10 most cost-effective initiatives (e.g., have the greatest impact on sustainability given their cost).

Healthy Ecosystem Context	**Implemented**	**Rank**
Partner with the local community to transform the landscape of the Clifton Road and North Decatur Road corridors to develop aesthetically pleasing surroundings that create a healthy ecosystem, support diverse forms of transportation, and encourage exercise.		
Build a series of demonstration gardens that educate the Emory community and offer opportunities for leisure pursuits.		
Mark natural features such as streams on Emory maps and nearby signs.		
Plant native species in each campus zone and identify them for the Emory community.		
Develop and implement a policy of no net loss of forest cover across the university.		
Develop a storm water management plan and set targets for implementation.		
Remove invasive species from all university forests and develop long-term restoration plan.		
Healthy Functioning in the Built Environment		

Develop a phased plan for energy and greenhouse gas reduction, setting goals across the university for • energy efficiency • overall energy reduction		
Administration, faculty, and staff support initiatives at all Emory sites, including Oxford College, Yerkes, and hospitals.		
Study feasibility for solar panels and green roofs, consistent with campus aesthetics.		
Develop a sustainability leadership program for representatives of each university building.		
Expand awareness of and participation in recycling and waste reduction to achieve university goals.		
Develop policies to increase renewable energy use.		
Align architectural and engineering design standards with sustainability goals.		
Develop policies to encourage purchases of fairly traded products in as many ways as possible throughout the university.		
Develop an annual Greening the Supply Chain conference with Georgia Tech and other local institutions and suppliers.		
Reduce use of toxic materials in landscaping, maintenance, and other activities.		
Healthy University Structures, Leadership and Participation		
Appoint a Director for Sustainability to develop and coordinate university efforts.		
Create a Sustainability Committee or Council to support innovation and develop cross-university cooperation.		
Form an external Advisory Council with other Atlanta area leaders.		
Develop an alumni network to support sustainability outreach beyond the university.		
Create incentive programs to support leadership innovation toward sustainability (faculty, staff, and students).		
Choose a sustainability symbol for use on materials and signs.		
Target four key behaviors in education and behavior change campaigns		
• adjust building temperature and appropriate dress code for summer and winter		
• decrease elevator use and increase use of stairs		
• increase awareness of Emory as a walking campus and adjust use of shuttles, trails, and private cars		
• integrate connection to place in all university rituals		
Healthy Living-Learning-Working Community		
Establish sustainable living/learning communities in residence halls.		
Develop affordable housing for faculty and staff within a one-mile radius of university workplaces to promote a more vibrant and sustainable community.		
Provide shuttles for transportation to campus within three mile radius.		
Modify parking policy to support sustainability goals.		
Establish a process to move toward sustainable and local food purchases and to create partnerships with regional farmers.		

Re-establish the Turner Village organic garden for residents and develop a visible college-led community garden for undergraduates and staff.		
Develop programs to be implemented in all dining facilities to facilitate health-promoting choices for all diners.		
Education and Research		
Support faculty development to infuse curriculum with sustainability content across all schools, and at all levels of students.		
Expand teaching and research programs focused on sustainability, including basic and advanced courses, research projects, and interdisciplinary collaborations in curriculum and research development.		
Develop hands-on sustainability-related research opportunities for undergraduates.		
Develop travel seminars focusing on sustainability.		
Create incentives fund to support sustainability initiatives by both faculty and students in education and research.		

Behavioral Observation: Study Task #2

Implementation

Sustainability requires awareness, motivation, support for, and acceptance of behavior change from community members. The study of human behavior repeatedly shows that long-term behavior change is difficult. Select one of your top-ranked recommendations and, using your knowledge of the factors that promote and inhibit changes in behavior, identify strategies that can be applied on campus to successfully implement this recommendation. Write the key elements of your plan below.