CHAPTER 2
Methodology: How Social Psychologists Do Research

Contents

LEARNING OBJECTIVES

2.1 Explain why social psychological results sometimes appear obvious.

2.2 Identify the origins of hypotheses.

2.3 Distinguish among three research methods that are used to test hypotheses.

2.4 Identify the goal of the observational method and distinguish between everyday observations and systematic observations.

2.5 Describe the procedures used in the observational method, ethnographic research and archival analysis. Give examples of types research questions that could be answered by each method and how. Define interjudge reliability. Explain why interjudge reliability is important.

2.6 Describe the limitations of the observational method in general and a limitation unique to archival analysis.

2.7 Identify the goal of the correlational method. Discuss and define the characteristics of a correlation. Describe what it means to say that two variables are positively correlated, negatively correlated, and not correlated.

2.8 Identify the role of surveys and samples in conducting correlational research. Explain the importance of selecting samples randomly. Identify potential threats to obtaining accurate survey results. Define a representative sample.

2.9 Distinguish between correlation and causation. Identify three possible causal relationships between variables that are correlated.

2.10 Identify the goal and components of the experimental method and the unique conclusions that can be made when using the experimental method.

2.11 Distinguish between independent and dependent variables.

2.12 Define internal validity. Identify factors that threaten the internal validity of an experiment. Define random assignment to conditions and explain why it is necessary to internal validity.

2.13 Define the term probability value and explain what a p-value tells us. Explain why probability levels are associated with statistics in experimental science. Describe the conditions under which results are considered statistically significant.

2.14 Define external validity. Identify the two kinds of generalizability that concern researchers.

2.15 Define psychological realism. Discuss the role of the cover story in making experiments realistic.

2.16 Explain why randomly selected samples are rarely used in social psychological research.

2.17 Compare and contrast lab experiments and field experiments. Describe the relationship between internal and external validity and each type of experimental setting.

2.18 Describe the *basic dilemma* of the social psychologist. Identify a solution to this dilemma.

2.19 Explain why conducting replications is necessary in social psychological research.

2.20 Explain how meta-analysis can help average across the results of multiple studies to find a general conclusion.

2.21 Contrast the goals of basic and applied research. Discuss the relationship between these types of research.

2.22 Identify the benefits and goals of cross-cultural research. Discuss precautions researchers should take when doing cross-cultural research.

2.23 Describe the evolutionary approach to psychology and what it says are the causes of human affect, cognition, and behavior. Define natural selection. Identify the main critique of evolutionary psychology.

2.24 Describe the goal of social neuroscience research and the methods used.

2.25 Describe the ethical dilemma faced by social psychologists and the role of informed consent in resolving this dilemma.

2.26 Identify a deception experiment. Explain the necessity and functions of a debriefing session. Discuss the effects on participants of being deceived.

2.27 Describe the purpose of an Institutional Review Board.

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CHAPTER OUTLINE

I. Chapter Prologue

- Question of whether pornography has harmful effects on viewers as introduction into research methods.
- Introduction of other running example of Kitty Genovese and bystander intervention plus two more contemporary examples of people dying because people who witnessed their deaths failed to help.

II. Social Psychology: An Empirical Science

- Empirical research allows us to test the validity of personal observations.
- Findings from social psychological research may appear obvious because they deal with familiar topics: social behavior and social influence.
- Due to hindsight bias, findings that appear obvious in retrospect may not have been predictable before the experiment was conducted.

A. Formulating Hypotheses and Theories

1. Inspiration from Earlier Theories and Research

- Studies often stem from researchers' dissatisfaction with existing explanations.
- Social psychologists engage in a continual process of theory refinement: developing theories, testing hypotheses, revising theory and forming new hypotheses.

2. Hypotheses Based on Personal Observations

- Personal experience, current events, and literature can serve as sources of hypotheses to test (e.g., Kitty Genovese and Latane & Darley's work on the *diffusion of responsibility*).
- Once researchers have a hypothesis, they must collect data using either the observational, correlational, or experimental methods to test this prediction.

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III. Research Designs

- Social psychologists use three types of research designs: observational, correlational, and experimental.

A. The Observational Method: Describing Social Behavior

1. Overview of Observational Method

- Researcher observes people and records measurements or impressions of their behavior.
- Ethnography is a type of observational method in which researchers attempt

to understand a group or culture by observing it from the inside, without imposing any preconceived notions they might have. This often involves participant observation, a form of the observational method whereby the observer interacts with the people being observed, but tries not to change the situation in any way.

- Other times researchers use observational methods to test a specific hypothesis. These studies use trained observers who code behavior according to a prearranged set of criteria to establish interjudge reliability.

2. Archival Analysis

- A form of the observational method whereby the researcher observes social behavior by examining accumulated documents of a culture (e.g., diaries, novels, magazines, and newspapers).
- Archival analysis can tell us a great deal about a society's values and beliefs. For example, archival analysis has been used to describe the content of "adults only" literature and photographs in America. Studies of pornography reveal high levels of depicted sexual violence by men against women, suggesting its appeal to readers.

3. Limits of the Observational Method

- Certain kinds of behavior are difficult to observe because they occur rarely or in private.
- Archival analysis limited by the content of the original material whose authors may have had other aims in compiling the material.
- Social psychologists typically want to do more than describe behavior but also predict and explain behavior.

B. The Correlational Method: Predicting Social Behavior

- A second goal of social science is to understand relationships between variables and to be able to predict when different kinds of social behavior will occur.
- The correlational method involves systematically measuring two variables and the relationship between them.
- The correlation coefficient is a statistical technique for calculating the degree of association between two variables. Positive correlations indicate that an increase in one variable is associated with an increase in the other, and negative correlations indicate that an increase in one variable is associated with a decrease in the other.

1. Surveys

- Surveys in which a sample of people is asked questions about their attitudes or behavior are often used in correlational studies and when the variable of interest is not easily observable.
- The validity of survey data depends on using samples of people that are representative of the population being studied. Random selection can ensure that a sample is representative.
- Sampling errors (e.g., the 1936 presidential poll error) can be a problem with surveys.
- Survey questions that ask people to predict or explain their own behavior

may be inaccurate as people often do not know the answer but believe that they do.

2. Limits of the Correlational Method: Correlation Does Not Equal Causation

- The major problem with the survey method is that it identifies only whether two variables are associated, and not why they are. An association might mean that A causes B, that B causes A, or that some third variable C causes both A and B, which are not causally linked.
- Confusion of correlation and causality may turn up in media reports (e.g., birth control method and incidence of STDs).

C. The Experimental Method: Answering Causal Questions

- Only the experimental method, in which the researcher randomly assigns participants to different conditions and ensures that these conditions are identical except for the independent variable, can determine causality.
- Experimental method always involves a direct intervention from the researcher.
- The Try it! exercise on page 30 asks students to consider alternative explanations for a variety of correlations.
- Readers are asked to imagine how they might test the relationship between the number of people present and helping in an emergency and to consider the ethical problems involved. Then the Latane and Darley (1968) study is described. In this study, 0, 2, or 4 other bystanders were presumably present when the confederate victim faked an epileptic fit, and the percentage of participants who tried to aid the victim was measured. The greater the number of bystanders, the less likely participants were to help.

1. Independent and Dependent Variables

- The independent variable is the variable a researcher changes or varies to see if it has an effect on some other variable. The dependent variable is the one measured by the researcher to see if changes depend on the level of the independent variable.
- Experiments can determine whether or not one variable is in fact a cause; however, this does not mean that such a variable is the only cause.

2. Internal Validity in Experiments

- An experiment has high internal validity when everything is the same in the different levels of the independent variable, except for the independent variable: the one factor of concern.
- Internal validity is established by controlling all extraneous variables and by using random assignment to condition. In random assignment to condition, each participant has an equal probability of being assigned to any of the experimental conditions. Random assignment helps ensure that the participants in the two groups are unlikely to differ in any systematic way.
- Even with random assignment, there is a small probability that different characteristics of people are distributed differently across conditions. To guard against misinterpreting the results in such an event, scientists calculate the probability level (*p*-value), a number calculated with statistical techniques that tells researchers how likely it is that their experimental results would

occur by chance. By convention, a *p*-value of less than or equal to 5 chances in 100 that an event would occur by chance is considered to be statistically significant.

3. **External Validity in Experiments**
   - The advantages of tight control over conditions in the experimental method may produce a situation that is somewhat artificial and distant from real life.
   - External validity is the extent to which the results of a study can be generalized to other situations and other people.
   - Generalizability across situations: There are different ways in which an experiment can be realistic.
   - Psychological realism: the extent to which the psychological processes triggered are similar to the psychological processes occurring in everyday life.
   - Psychological realism can be high in an experiment even if mundane realism is low. Psychological realism often depends upon the creation of an effective cover story, or false description of the purpose of the study. Cover stories are used because if participants are forewarned about the true purpose of the study, they will plan their response, and we will not know how they would act in the real world.
   - Generalizability across people: The only way to be certain that the results of an experiment represent the behavior of a certain population is to randomly select from that population. However, this may be impractical and expensive. Social psychologists often assume that the psychological processes studied are basic components of human nature and thus similar across different populations. To be truly certain of this, however, studies should be replicated with different populations.
4. **Field Research**
   - External validity can be increased by conducting field experiments, experiments conducted in natural settings rather than in the laboratory.
   - Field experiments typically involve broader samples of people in real situations who do not know that they are part of a psychological study.
   - There is often a trade-off between internal and external validity—being able to randomly assign people to conditions and ensuring that no extraneous variables are influencing the results versus making sure that the results can be generalized to everyday life.
   - This trade-off has been referred to as the *basic dilemma* of the social psychologist (Aronson & Carlsmith, 1968). The resolution to this dilemma is the use of replication in both laboratory and field settings.
5. **Replications and Meta-Analysis**
   - Different researchers testing the same hypotheses in different settings with different samples is referred to as replication and is essential for determining how generalizable the results are (i.e., how broadly the results of a single study apply).
   - Meta-analysis is a statistical technique that averages the results of two or more studies to see if the effect of an independent variable is reliable.
6. **Basic Versus Applied Research**

- Basic research tries to find the best answer to the question of why people behave the way they do, purely to satisfy intellectual curiosity.
- Applied research tries to solve a specific social problem. However, in practice, the distinction between basic and applied research is often fuzzy.
- Most social psychologists agree that in order to solve a specific social problem, we must understand the psychological processes responsible for it.

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IV. New Frontiers in Social Psychological Research

A. Culture and Social Psychology

- Social psychologists conduct cross-cultural research to determine how culturally dependent a psychological process is.
- Findings in cross-cultural research reveal that some social psychological findings are culture-dependent.
- In cross-cultural research, researchers have to be sure they do not impose their own viewpoints and definitions on members of another culture, and they need to be sure that their independent and dependent variables are understood in the same way in different cultures.

B. The Evolutionary Approach

- Natural selection consists of the process via which certain adaptive traits become more prevalent in future generations because they offer a survival or reproductive advantage.
- In biology, evolutionary explanations can explain physical features like long necks on giraffes.
- Evolutionary psychologists argue that human cognition, affect, and behavior also evolved as adaptations to conditions in the distant past via natural selection.
- Evolutionary psychology has been critiqued because the basic argument that behaviors evolved over time is not scientifically testable and because there are multiple possible evolutionary explanations for any given phenomenon.

C. Social Neuroscience

- Social psychology increasingly focuses on the connection between biological processes and social behavior.
- Electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) are two techniques for studying the connection between brain and behavior.
- This approach allows social neuroscientists to map the correlates of different kinds of brain activity to social information processing.

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V. Ethical Issues in Social Psychology

- Social psychologists face the tension between wanting experiments to be realistic and wanting to avoid causing participants unnecessary stress and unpleasantness.
- The dilemma is less problematic when researchers can obtain informed consent, specifying the nature of the experiment and getting permission from the participants before the experiment is conducted. In social psychology research, this fully informed consent is used whenever possible. However, in some cases, full disclosure of the procedures would influence the nature of the results, and in this case, deception experiments are used, where only partial or misleading information about the procedures is given to participants in advance.

A. Guidelines for Ethical Research

- Ethical principles established by the American Psychological Association to guide psychologists in the conduct of research are summarized in Figure 2.3.
- In addition, institutions seeking federal funding for psychological research are required to have an institutional review board that reviews all research projects before they are conducted.
- When deception is used, debriefing or explaining to participants the true purpose of the study must be conducted to attempt to undo or alleviate any discomfort on the part of the participants.
- Studies examining the impact of deception experiments on participants have typically found that participants do not object to the mild discomfort that is typically produced, and in fact often find such experiments more interesting to participate in than non-deception experiments.

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KEY TERMS

- **Hindsight Bias:** (pg. 22) The tendency for people to exaggerate how much they could have predicted an outcome after knowing that it occurred
- **Observational Method:** (pg. 24) The technique whereby a researcher observes people and systematically records measurements or impressions of their behavior
- **Ethnography:** (pg. 24) The method by which researchers attempt to understand a group or culture by observing it from the inside, without imposing any preconceived notions they might have
- **Interjudge Reliability:** (pg. 25) The level of agreement between two or more people who independently observe and code a set of data; by showing that two or more judges independently come up with the same observations, researchers ensure that the observations are not the subjective, distorted impressions of one individual
- **Archival Analysis:** (pg. 25) A form of the observational method in which the researcher

examines the accumulated documents, or archives, of a culture (e.g., diaries, novels, magazines, and newspapers)

- **Correlational Method:** (pg. 27) The technique whereby two or more variables are systematically measured and the relationship between them (i.e., how much one can be predicted from the other) is assessed
- **Correlation Coefficient:** (pg. 27) A statistical technique that assesses how well you can predict one variable from another—for example, how well you can predict people's weight from their height
- **Surveys:** (pg. 27) Research in which a representative sample of people are asked (often anonymously) questions about their attitudes or behavior
- **Random Selection:** (pg. 28) A way of ensuring that a sample of people is representative of a population by giving everyone in the population an equal chance of being selected for the sample
- **Experimental Method:** (pg. 30) The method in which the researcher randomly assigns participants to different conditions and ensures that these conditions are identical except for the independent variable (the one thought to have a causal effect on people's responses)
- **Independent Variable:** (pg. 32) The variable a researcher changes or varies to see if it has an effect on some other variable
- **Dependent Variable:** (pg. 32) The variable a researcher measures to see if it is influenced by the independent variable; the researcher hypothesizes that the dependent variable will depend on the level of the independent variable
- **Random Assignment to Condition:** (pg. 33) A process ensuring that all participants have an equal chance of taking part in any condition of an experiment; through random assignment, researchers can be relatively certain that differences in the participants' personalities or backgrounds are distributed evenly across conditions
- **Probability Level (*p*-value):** (pg. 33) A number calculated with statistical techniques that tells researchers how likely it is that the results of their experiment occurred by chance and not because of the independent variable or variables; the convention in science, including social psychology, is to consider results *significant* (trustworthy) if the probability level is less than 5 in 100 that the results might be due to chance factors and not the independent variables studied
- **Internal Validity:** (pg. 33) Making sure that nothing besides the independent variable can affect the dependent variable; this is accomplished by controlling all extraneous variables and by randomly assigning people to different experimental conditions
- **External Validity:** (pg. 34) The extent to which the results of a study can be generalized to other situations and to other people
- **Psychological Realism:** (pg. 34) The extent to which the psychological processes triggered in an experiment are similar to psychological processes that occur in everyday life; psychological realism can be high in an experiment even if mundane realism is low
- **Cover Story:** (pg. 35) A description of the purpose of a study, given to participants, that is different from its true purpose, used to maintain psychological realism
- **Field Experiments:** (pg. 35) Experiments conducted in natural settings rather than in the laboratory
- **Replications:** (pg. 36) Repeating a study, often with different subject populations or in different settings
- **Meta-Analysis:** (pg. 37) A statistical technique that averages the results of two or more

studies to see if the effect of an independent variable is reliable

- **Basic Research:** (pg. 37) Studies that are designed to find the best answer to the question of why people behave as they do and that are conducted purely for reasons of intellectual curiosity
- **Applied Research:** (pg. 37) Studies designed to solve a particular social problem
- **Cross-Cultural Research:** (pg. 38) Research conducted with members of different cultures, to see whether the psychological processes of interest are present in both cultures or whether they are specific to the culture in which people were raised
- **Evolutionary Theory:** (pg. 39)
  A concept developed by Charles Darwin to explain the ways in which animals adapt to their environments
- **Natural Selection:** (pg. 39) The process by which heritable traits that promote survival in a particular environment are passed along to future generations, because organisms with that trait are more likely to produce offspring
- **Evolutionary Psychology:** (pg. 39) The attempt to explain social behavior in terms of genetic factors that evolved over time according to the principles of natural selection
- **Informed Consent:** (pg. 40) Agreement to participate in an experiment, granted in full awareness of the nature of the experiment, which has been explained in advance
- **Deception:** (pg. 40) Misleading participants about the true purpose of a study or the events that will actually transpire
- **Institutional Review Board (IRB):** (pg. 40) A group made up of at least one scientist, one nonscientist, and one member not affiliated with an institution that reviews all psychological research at that institution and decides whether it meets ethical guidelines. All research must be approved by the IRB before it is conducted.
- **Debriefing:** (pg. 41) Explaining to participants, at the end of an experiment, the true purpose of the study and exactly what transpired

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CLASSROOM RESPONSE SYSTEM RATIONALE

Lecture Launchers
Slides 2-4 are designed to be used at the start of your discussion of the chapter. Use them to introduce students to the concept of hindsight bias and the degree to which they are able to accurately predict findings.

Content Mastery Questions
Slides 5-9 should be used after each topic is covered. For example, use slide #5 and/or #6 as a check on student comprehension after you have covered the different types of experimental methods. If most students answer correctly, you can feel comfortable moving ahead with the next topic. If a large number answer incorrectly, you may want to review the differences in the techniques.

Application Questions
Slides 10-17 are application questions designed to stretch student understanding of a concept and

apply it to novel or real world settings. Again use their responses as feedback regarding their level of understanding of the material you've covered.

Opinion/Discussion Questions
Slides 18-21 can be used either to introduce a topic, to guide discussion on a topic, or to check student understanding of a topic already covered. They are designed to open a discussion on the given topic.

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CRITICAL THINKING AND DISCUSSION QUESTIONS

- In the first half of the twentieth century, doctors began to notice a relationship between smoking tobacco and lung cancer. This line of research finally led to the Surgeon General's warning on cigarette packages. Ask the class why the Surgeon General would institute a warning label rather than a complete ban on cigarettes. After several minutes (if class members have not raised the point), you can indicate that an important reason is that the relationship between lung cancer and smoking is a correlation. No cause-effect relationship between smoking and lung cancer has been definitively demonstrated in humans (since, for obvious ethical reasons, no experiments have been done). The tobacco industry for years was able to use this argument as a defense. Ask the class how to establish the cause-effect relationship in humans. Have the class help design an experiment to answer the question. If you do this, you can use this discussion as a platform for a lecture on the ethics of human experimental psychology. Explain your institution's human subjects committee guidelines and explain the rights of participants in experiments. You could also substitute alcohol for cigarettes in this exercise.

- Suppose you wish to find out how much people know about how to prevent AIDS. You obtain a brochure from the Centers for Disease Control that indicates sensible precautions to take, and then you use this to design a survey to test whether or not people are aware of these precautions. How will you then find a group of people to take your survey? Use this as a lead-in to a discussion on sampling methods and sampling bias. Note that there are problems with representativeness in convenience samples (for example, college students). Ask how one could get a representative sample of the population. Indicate that many polling organizations derive samples by randomly selecting from address or phone directories. You could note that even these lists might underrepresent populations of special interest such as the non-English speaking or the homeless, and indicate that special stratified random sampling techniques can be used (at greater expense) to attempt to reduce (though not totally eliminate) this problem.

- Suppose that you wish to find out what actions people are actually taking to prevent the spread of AIDS and other sexually transmitted diseases. You obtain a brochure from the Centers for Disease Control that indicates sensible precautions to take, and then you use this to design a survey to examine whether or not people actually take these precautions. What

kinds of problems are you likely to run into in administering such a survey? Use this to lead into a discussion of the social desirability bias as a potential problem in research. Discuss anonymity of findings, social desirability scales, and unobtrusive measures (for example, condom sales: if students claim to be practicing safe sex but condom sales in the area are low, then you would suspect that students were answering your questions in a socially desirable way) as possible means of reducing social desirability concerns.

- What are the problems with using college student samples in research? You may find it useful to introduce the critique that psychological research relies too heavily on WEIRD (Western, Educated, Industrialized, Rich, and Democratic) samples (Henrich, Heine, & Norezayan, 2010). Pose this question to students. Conclude the discussion by asking students why social psychologists so often use college student samples despite the problems, how social psychologists justify this frequent use of college student samples, and how social psychologists might be able to increase the sample base they use without their studies becoming prohibitively expensive.

- If you are teaching at a college or university in which psychology students participate in psychological research, they might try the following: Ask students who have participated in psychology experiments to share their experiences with the rest of the class. Were they deceived in any way? If so, how did they feel about it? Were they properly debriefed at the conclusion of the experiment? Tim Wilson finds that this stimulates an interesting discussion of ethics. Typically, people who have participated in studies recognize the reasons for any deception and bear no ill feelings about it. *Note:* If you are at a large research institution, you may want to take care not to ruin your students as future research participants by revealing to them what studies being run at your university are about. You may want to skip this exercise or make sure the discussion avoids specific details of studies.

- Freedman and Sears (1967) wrote a paper on the selective exposure hypothesis that demonstrates the importance of conducting studies in field as well as laboratory settings. Although researchers working in field settings had found evidence for selective exposure, attempts to reproduce these results in the laboratory led to very inconsistent findings. This discrepancy can provide the basis of an interesting discussion. Suppose you were going to design a study to test the following hypothesis (known as the “selective exposure hypothesis”): when watching political ads on television, people will pay more attention to ads for the candidate that they support than to ads for the candidate that they are against. Ask students to design a laboratory study to test this hypothesis. Then ask: Is this study high in internal validity? What would you think if you conducted the study and found that there were no differences between the groups? Discussion will first center on internal validity problems with the study. Ask students: If you conducted this study and found no effects, does this mean that the hypothesis is necessarily wrong? Is it wrong overall, or is there a problem with conducting this kind of experiment in the laboratory? What kind of mindset do people bring to a laboratory? How does it differ from the mindset that they might have when watching television at home? What are the conditions under which the selective exposure hypothesis is likely to apply? What does this suggest about the external validity of the original study? This discussion will sensitize students to the importance of external as well as internal validity.

- The textbook discusses the possible cultural limits of research (pp. 38), and suggests that

many social psychological findings will hold up cross-culturally if variables are manipulated to make the same kind of "psychological sense" to people in different cultures. Have any students in class traveled in another culture (or subculture)? If students have, ask them if they think that the Latane and Darley helping study findings (described in the text) would hold up in the culture that they visited. Why or why not? If several students in the class have traveled, this can provide the basis for discussions across the term about the potential limits and generalizability of the social psychological findings discussed in the text. Examples from recent research include Kitayama, Markus, Matsumoto, & Norasakkunkit (1997, Individual and collective processes in the construction of the self: Self-esteem in the United States and self-criticism in Japan, *Journal of Personality and Social Psychology, 72*, 1245—1267), who suggest that the same motive of enhancing the self is fulfilled in the U.S. with its individual self-constructions by promoting the individual self, but in Japan, where the self is seen as part of a greater collective, by criticizing the individual self, one is motivated to perfect the self and affirm its belonging to the larger group; and Kwan, Bond, & Singelis (1997, Pancultural explanations for life satisfaction: Adding relationship harmony to self-esteem, *Journal of Personality and Social Psychology, 73*, 1038—1051), who suggest that relationship harmony is a component of self-esteem, but one which plays a much greater role for students in Hong Kong than in those from the United States.

- In small groups, have students come up with the most unethical social psychological study that they can think of. Then, as a large group, go through each study, first discussing what makes the study unethical and then discussing how it would need to be changed to be ethical.

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IN-CLASS EXERCISES AND QUICK ASSESSMENTS

The Hindsight Bias activity (Exercise 1.5) is also relevant to the current chapter. You may wish to use it here if you have not used it previously.

Exercise 2—1
Name That Method
Time to Complete: 10—15 minutes, In-class

In Class: The exercise in the handout will allow students to try their hands at determining the type of methodology used based on a brief description of a study. Have students work on the problems first on their own, then in a small group, and then review in a general class discussion.

Discussion: Answers to the problems follow.

1. This is a correlational study examining the association between caffeine consumption and the number of daily hassles experienced: The only question that the researcher can examine is whether or not there is a correlation between these two variables. You can use this example to drive home the idea that correlation does not equal causation by asking students to generate the three possible explanations for any correlation between two variables. If there is a correlation, it could be due (1) to daily stressors leading people to consume more caffeine,

(2) to caffeine either actually causing people to make more minor errors and thus experience more daily hassles or causing them to perceive more events as daily hassles, or (3) to some third variable, e.g., the number of hours spent at work in a week, which independently leads people both to consume more caffeine and to experience more daily hassles.

2. This is an experiment: The independent variable is whether or not the participant got a free ticket to the happy movie and just finished watching it (this contains two positive mood inductions — getting something free and a happy movie). This is an operationalization of the mood variable, since the researchers presumed that people who get a free ticket and see the movie will be happy. The dependent variable is whether or not the participant helps. The hypothesis is that subjects who are put in a good mood will be more likely to help. This example provides a good opportunity to introduce the concept of operationalization, and to discuss the relationship between theory and data. Also note for the students that this exemplifies an experiment conducted in the field rather than in the laboratory. Additional discussion could center on other ways that the mood could be manipulated and that helping could be measured. Also ask students what possible problems could occur in conducting research in the field. Most objections students will raise center around the lack of control in the field setting, giving you the opportunity to stress that variability in events in the field adds to error variance and thus make it harder to find an effect. The variability itself doesn't invalidate the experiment. You could also ask students to design a laboratory experiment to test the same hypothesis, and have them compare and contrast the advantages of the field experiment and the lab experiments.
3. This is a correlational study: Some students may get confused and say that it is an observational study, since archival analysis is described under this section in the textbook. This example provides you the opportunity to stress that even though this study is archival, it is primarily correlational because it focuses on the relationship between two variables, and not just on describing the pattern of one variable. The hypothesis is that there is a positive correlation between ambient temperature and aggression, measured by the number of batters hit by pitched balls. Some students may wish to argue with this operationalization of aggression—again, a good opportunity to discuss the idea of operationalization and the relationship between theory and data. If students argue that this is not a good operationalization of aggression because some of the hits are really just accidents, you can explain that although that is certainly true, those accidents are really just adding to error variance. Other complaints that students might raise are that the "hits" do not measure aggression of the pitchers, but instead measure poor control of the ball by the pitcher or slow reaction times by the batter. If these are mentioned, then ask students what their interpretation of the finding would be, and what better operationalization of aggression they might choose instead.
4. This is an experiment since one of the two independent variables is manipulated and randomly assigned: The two independent variables are sex (male/female) and performance (success/failure), and the dependent variable is self-esteem. The hypotheses being tested might be something such as, "Women, but not men, will show lower self-esteem after failure, while both sexes will show higher self-esteem after a success." Having students generate hypotheses for this study will allow you to mention briefly that this is a factorial design and that the researchers are interested in the interaction of the variables, that is, the way that one independent variable affects the dependent variable, depending upon the level of the other independent variable.

5. This is primarily a correlational study, since both variables are measured rather than manipulated (specifically, it is an ex-post facto study): Some students will be misled into thinking that it is an experiment based on similarities to study #4. Emphasize that it is not a true experiment because participants are not randomly assigned to the gender condition. The association being measured is that between gender and susceptibility to persuasion (as measured by the amount of attitude change after exposure to a persuasive message).

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HANDOUT EXERCISE 2.1: NAME THAT METHOD

Instructions: Answer the following questions for each study described below. (1) Is the study primarily an observational study, a correlational study, or an experiment? Why do you give the answer you did? (2) What are the variables involved in the study? For experiments, specify the independent and dependent variables. (3) What might be the hypothesis that the researchers are trying to test?

1. A researcher is interested in the relationship between caffeine consumption and level of stress. S/he has participants keep a diary for one week during which they count the number of cups of coffee, tea, and cola-based soft drinks they consume, as well as recording consumption of chocolate and medications that have caffeine as an ingredient. In addition, participants complete a measure of "daily hassles" experienced during the week.

_____Observational _____Correlational _____Experimental

Variables:

Hypothesis:

3. A pair of psychologists is interested in the effects of mood on helping (based on Isen & Levin, 1972). They give participants free tickets to a feel good movie. They then have a confederate drop papers in front of people who just got out of the movie and people who are just walking by who have not just seen a happy movie for free. The researchers watch to see if the participants help pick up the dropped papers.

_____Observational _____Correlational _____Experimental

Variables:

Hypothesis:

4. Researchers (Reifman, Larrick, and Fein, 1988) were interested in the factors causing aggression. They looked at an entire baseball season's worth of news reports. For each game, they recorded the temperature of the locale, and the number of batters who were hit by pitched balls.

_____Observational _____Correlational _____Experimental

Variables:

Hypothesis:

5. Researchers are interested in influences on self-esteem. Half of the participants used in this study are male and half are female. Participants are given a set of anagram problems to solve in a five minute time limit. Half are randomly assigned to receive very easy anagrams and half are given difficult ones. After completing as many of the anagrams as they can, participants are given a questionnaire labeled "Thoughts and Feelings Questionnaire" that is really a measure of self-esteem.

_____Observational _____Correlational _____Experimental

Variables:

Hypothesis:

6. Researchers are interested in what determines how easily people are persuaded. Half of the participants used in this study are male and half are female. During the session, participants rate their attitude towards an increase in fees that has been proposed at their school. Following this, they listen to a persuasive message providing strong arguments in favor of the fee increase. Finally, they re-rate their attitude towards the proposed fee.

_____Observational _____Correlational _____Experimental

Variables:

Hypothesis:

Exercise 2—2
In-Class Survey

Tim Wilson suggests creating and conducting a survey in class to illustrate correlations, *t*-tests, generalizations, etc. Ask the class to think of hypotheses and design the survey. They usually think of interesting questions (e.g., correlating the amount of alcohol consumption with the frequency of engaging in sexual intercourse or with grade-point average). Obviously, the data are collected anonymously. You may also be able to collect this data in the beginning of class via the course website or a survey data collection website (e.g., survey monkey, qualtrics) and then use the data you collected from your students to demonstrate correlational methods from this chapter and to make later topics more self-relevant.

Exercise 2—3
Writing Hypotheses

Joyce Schaeuble of Sacramento City College suggests that to give students practice in writing hypotheses, you can ask them to rewrite a TV talk-show topic (e.g., "Should schools have dress codes? Is videotaping crimes changing our court system?") into a testable hypothesis. Also have them operationally define their independent and dependent variables.

Exercise 2—4
Designing Correlational and Experimental Studies 1

Divide the class into three groups. Each group should be assigned to design a study on the relationship between self-esteem and academic achievement/performance. One group should be asked to design a correlational study, another an experiment examining the effects of self-esteem on academic achievement, and the third an experiment on the effects of academic achievement on self-esteem. The groups should describe their methods and should describe what they would be able to conclude if significant results were found. Once each group has presented its findings, the class as a whole can discuss the advantages and disadvantages of each method. Ask them to indicate how high their study seems to be in internal and in external validity. Note that although the group assigned to devise a correlational study may appear to have the easiest job, students are likely to just say that they will administer two different questionnaires, one measuring self-esteem and the other measuring academic achievement. If a group designs a very simple study such as this, after asking what they could conclude from such a study, you might ask what else they might measure to assess whether or not the correlation between these two variables is real. Although some correlational research has suggested that there is a strong relationship between these two variables (e.g., E.M. Skaalvik & K.A. Hagtvet (1990), "Academic achievement and self-concept: An analysis of causal predominance in a developmental perspective," *Journal of Personality and Social Psychology, 58,* 292—307), other research has suggested that the relationship is spurious and is due to third variables such as intelligence and family status (e.g., G. Maruyama et al., (1981), "Self-esteem and educational achievement: Independent constructs with a common cause," *Journal of Personality and Social Psychology, 40,* 489—499). This will allow you to drive home the point that correlation cannot prove causation.

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HANDOUT EXERCISE 2.4: DESIGNING STUDIES

Directions: Your group will be assigned to test either a correlational study on the relationship between self-esteem and academic achievement/performance, an experimental study testing the effects of self-esteem upon academic achievement/performance, or an experimental study testing the effects of academic achievement/performance upon self-esteem.

1. Write your hypothesis for the study you are designing.

_____
_____

2. Describe the method you would use in detail. Include operational definitions for your variables and identify independent and dependent variables, when appropriate.

_____
_____
_____
_____
_____
_____
_____
_____

3. What can you conclude from your study?

_____
_____
_____

4. (To be completed after presentations) What are the advantages and disadvantages of your method?

_____
_____
_____
_____

5. (To be completed after presentations) How high is the internal validity of this study? How high is the external validity of this study?

_____
_____
_____
_____
_____

6. (To be completed after presentations) What are the advantages and disadvantages of the other group's methods?

_____
_____
_____
_____
_____
_____

7. (To be completed after presentations) How high is the internal validity of the other group's studies? How high is the external validity of the other group's studies?

_____
_____
_____
_____
_____

8. (To be completed after presentations) How might the correlational study be improved?

_____
_____
_____
_____
_____
_____

Exercise 2—5
Designing Correlational and Experimental Studies 2

An alternative exercise that also gets students to think in terms of study designs is to divide students into groups and give each group a proposition to test. These can be propositions like common "folk wisdom" (for a list, see Exercise 1.2), or propositions from social psychology that will be addressed later in the course, for example, "people come to love what they suffer for"; "people are more likely to help someone if they are in a good mood"; "watching media violence fosters aggressive behavior"; "people are more likely to discriminate against members of other groups when shared resources are tight"; and "confiding to others about one's problems is good for one's health." In each case, ask the students to design both a correlational and an experimental study to test their hypothesis. In all cases, they should be asked to specify what their operational definitions are, and in the case of the experiments, they should specify their independent and dependent variables. Handout 2.5 includes these questions.

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HANDOUT EXERCISE 2.5: DESIGNING STUDIES

1. Write your assigned proposition (e.g., absence makes the heart grow fonder) here.

_____
_____

2. Rewrite the proposition into a scientific hypothesis.

_____
_____

3. Design a correlational study to test this hypothesis. Be sure to include operational definitions for the variables you will measure.

_____
_____
_____
_____
_____
_____
_____
_____

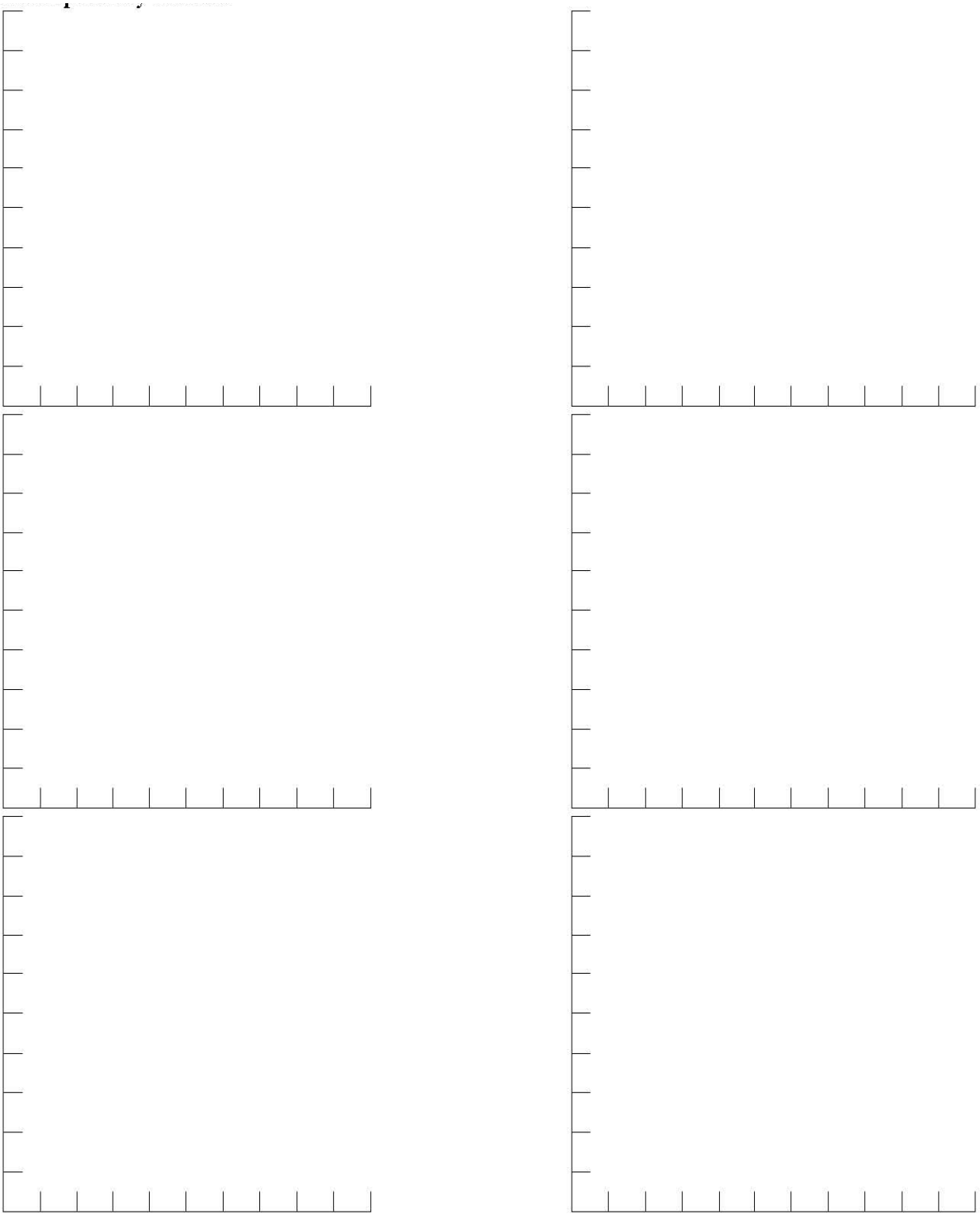
4. Design an experimental study to test this hypothesis. Be sure to identify your independent and dependent variables and the operational definitions for each.

_____
_____
_____
_____
_____
_____
_____
_____

Exercise 2—6
Positive and Negative Correlations

To enhance students' understanding of positive and negative correlations, ask students to pair up and think of examples of variables that would be positively or negatively correlated with each other. To further enhance their understanding, you can collect data from the class on some of the variables they posit will be correlated. In a small class, you can do this by using the transparency master overhead and having students post their own data in a scatterplot; in a larger class, you may wish to collect the data and make the scatterplot for them. By asking students to come up with alternative hypotheses for why variables that seem to be correlated are related, this exercise can also be used as a lead-in for a discussion on correlation and causality.

Exercise 2—6
Transparency Master



Exercise 2—7
Analyzing an Experiment for Confounds

This exercise has students analyze a very poorly designed experiment for flaws. Distribute handout 2.7 and allow students to discuss the experiment in small groups. The main problem with the experiment is that random assignment is not used and several variables are confounded with the manipulation; these include using as the experimental and control groups seniors vs. freshman; conducting the experiment in the day or the evening; students participating after an exam vs. not. In addition, the sample, particularly of freshman, is biased since only those students who had a free hour after class are able to participate. In addition, the researcher has the problem of using an "absolute" amount of alcohol, when effects depend on blood alcohol level, which is dependent on sex and weight. Finally, because the researcher is using students from his own classes, there is an enhanced possibility of demand characteristics playing a role in his results.

After students have discovered the flaws, ask them to properly design the experiment.

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HANDOUT EXERCISE 2.7: ANALYZING AN EXPERIMENT

A researcher was interested in the effects of alcohol on perceptions of physical attractiveness of the opposite sex. To study this, he used students from two of his classes, a senior seminar for psychology majors that met one evening a week from 6 to 9 p.m., and a first-year introductory psychology class that met two mornings a week at 10 a.m. Because the seniors were all at least 21 and, thus, legally able to drink, he assigned them all to the condition that received 2 oz. of alcohol mixed in with 6 oz. of orange juice. The first-year students were assigned to the "placebo" alcohol condition, in which they received 2 oz. of tonic water (which tastes like alcohol) mixed in 6 oz. of orange juice. These students believed that they were really being served alcohol as part of the psychological study.

Students were invited to participate in the study if they had a free hour after their class with the professor. The professor conducted the study on a Thursday, on a day when the introductory class had had an exam. Students drank either the alcohol or the placebo drink, waited 30 minutes in a lounge for the "alcohol" to take effect, and then sat at a computer and performed a five-minute task in which they rated various faces of the opposite sex on physical attractiveness.

The group that had received alcohol rated the faces as more attractive than the group that did not receive alcohol, and the professor concluded that alcohol makes people of the opposite sex appear more attractive.

Is the professor's conclusion a reasonable one? Why or why not?

Exercise 2—8
Interjudge Reliability

Geoffrey Leonardelli and Kenya Thompson of Ohio State University suggested the following exercise on interjudge reliability:

Have two or more volunteers from the class count how many people there are with blond hair and black (or brown) hair. People consistently report lower agreement on the number of people with blond hair than on the number of people with black or brown hair. It illustrates examples of both high and low interjudge reliability.

Students can also pair off and complete this exercise, which will get more students involved. They can also pair off and go to some public place (coffee shop, restaurant, etc.) and complete it.

Exercise 2—9
Classroom Correlations

Time to complete: 15-20 minutes; In-class

Jane Marantz Connor suggests an interactive way to teach students about correlations. In this activity you will be forming human scatterplots based on your students' own data. Use the rows of seats as the y axis and the individual seats as the x axis. Select two variables of interest that aren't too sensitive and have students move to the appropriate row, then across the row to the correct seat. You might also choose to have the middle student in each row hold a running piece of ribbon or crepe paper to make the regression line more visible throughout the room. Ideas to consider as variables are: shoe size, height, number of students in high school graduating class, number of siblings, size of their hometown, size of the town in which they'd like to live, minutes per week they exercise or participate in sports, minutes per week they watch sports on television.

After students have found their spot, discuss the pattern of the results. Draw attention to the concentration along the diagonal (if appropriate). Discuss the positive or negative pattern of the correlation. Ask students within a particular level of a variable (for example, height of 68 inches) to call out their shoe sizes. Note the variability within this group, and that the variability within this group is smaller than the variability in the entire class.

You might want to consider asking students to report their answers to these questions during the prior class session in order to determine which values to use for each row and seat within the row. Handout 2.9a can be used for this purpose. Questions 9 and 10 on this handout can be used to ask questions of your own creation. If you wish, use the quick assessment (handout 2.9b) to assess your students' level of understanding of correlations following this exercise.

Source:

Cooper, J.M. (2003). Making statistics come alive: Using space and students' bodies to illustrate statistical concepts. *Teaching of Psychology, 30*, 141—143.

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HANDOUT EXERCISE 2.9a: CLASSROOM CORRELATIONS

Directions: In order to facilitate a demonstration for the next class session, please complete this handout before leaving class today. Turn it in before departing class.

1. What is your shoe size?

_____

2. What is your height (in inches)?

_____

3. How many siblings do you have?

_____

4. What was the size of your high school graduating class?

_____

5. What is the approximate size (population) of your hometown?

_____

6. What is the approximate size (population) of the town where you would ideally like to live someday?

_____

7. What is the number of minutes per week that you exercise or participate in sports?

_____

8. What is the number of minutes per week that you watch sports on television?

_____

9. Extra question #1:

_____

10. Extra question #2:

_____

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HANDOUT EXERCISE 2.9b:

QUICK ASSESSMENT—CLASSROOM CORRELATIONS

Directions: In this assessment you will demonstrate your knowledge of correlations and analyze the results of our in-class demonstration. Please answer the following questions and explain your answers in detail.

1. Describe and explain a **positive correlation** in your own words.

_____
_____
_____
_____

2. Describe and explain a **negative correlation** in your own words.

_____
_____
_____
_____

3. Describe the pattern of results for one of the correlations we demonstrated in class. Did we find a correlation? Was it positive or negative? How do you know? Be sure to indicate what correlation you are discussing.

_____
_____
_____
_____

4. What does it mean to say that two variables are correlated?

_____
_____
_____
_____

Exercise 2—10
Experimental Ethics

Time to Complete: 30—35 minutes; In-class

In Class: Distribute handout 2.10 to your students. Ask each person to fill out the questionnaire individually either in class or for homework prior to the discussion day.

Discussion technique #1: After students have had a chance to complete the handout, divide the class into groups of four or five for discussion. Students should compare their answers. Are there any disagreements about which studies are ethical? Why did these disagreements occur? Which ethical principles do students refer to in making their decision about whether or not a study is ethical? Which ethical principles do students consider most important?

Have each group report back their results on each of the ethical dilemmas. Lead a class discussion about some of the issues raised. For example, when do psychologists have the right to study people's behavior without their consent?

Discussion technique #2: After students have completed the handout, ask them to move to one side of the room or the other based on their response. For example, ask students who believed the experiment to be ethical to move to the right side of the room and students who believed the experiment to be unethical to move to the left side of the room. As students are standing on one side or the other, ask students from each side to explain their position and rationale.

Answers to the problems:

In Study 1, the behavior occurs in a public setting and anyone can observe it. Since the observation involves minimal risk to participants, no informed consent is necessary.

In Study 2, the issue is whether the participation is truly voluntary. On a smaller scale, the participation of introductory psychology students for extra credit points in their classes involves a similar issue.

Study 3 contains deceptive false feedback of a sort that is fairly common in psychological experiments. Of issue here is whether the sorts of feedback are about issues (e.g., maturity level, social sensitivity) that are too potentially damaging. These are issues that different Human Subjects Committees and different student groups may come to different conclusions on. The major issue in Study 4 is the lack of debriefing. A second, perhaps more minor problem is deception: not telling participants the true purpose of the study and observing them without their knowledge. As discussed in the text, most studies involving deception are relatively harmless. Potential harmful effects of deception can be eliminated by careful, sensitive debriefing. The major issue in Study 5 is the delay in the debriefing. Some aspects of the study are good, such as informed consent to the degree possible, and stressing the participant's freedom to withdraw at any time. However, debriefing is delayed for no obvious reason. The delay interferes with the

researcher's responsibility to detect and to remove any damaging consequences that might have occurred as a result of the deception.

Study 6 is based on the work of Piliavin, Rodin, and Piliavin (1969). The issue, as in most field experiments, is the lack of informed consent. When do psychologists have the right to study people's behavior or expose them to potentially distressing scenes without their consent?

Study 7 is modeled after work by Meeus and Raaijmakers (1985), who have updated the Milgram paradigm. An ethical issue here is whether freedom to withdraw from the experiment is challenged. You should conclude that attention to the welfare of research participants is extremely important.

Guidelines for Group Discussion (for those using discussion technique #1)

Instruct students to compare their answers for each of the items. Where disagreements occur, participants should explain the reasoning used to decide whether or not a study was ethical. After explaining the reasoning, they should answer the following questions and be prepared to summarize their discussion for the rest of the class.

1. Are there any disagreements about which studies are ethical? Did you disagree more about some studies than others? Why do you think these disagreements occurred?
2. In your group, which issues seem the most important in determining whether or not a study is ethical?

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HANDOUT EXERCISE 2.10: EXPERIMENTAL ETHICS

Instructions: For each of the following studies, please indicate whether you consider it to be ethical or unethical and justify your decision by discussing the ethical principles involved.

Study #1. A social psychologist sits in a crowded bar all evening and records the number of people who come into the bar alone, who leave alone, or who leave with someone else, and the time at which they left.

_____ethical _____cannot decide _____unethical

Ethical principle(s):

Study #2. A researcher wants to administer a new drug hypothesized to affect aggressive behavior. Reasoning that aggression is more common in prisons, he chooses prison inmates to be his participants. In order to persuade prisoners to participate, they are promised favorable letters to their parole boards which may facilitate earlier release.

_____ethical _____cannot decide _____unethical

Ethical principle(s):

Study #3. A researcher was interested in reactions to feedback about the self. He manipulated people's self-esteem by having them take a personality test and then afterwards giving them either a favorable or unfavorable report about their personality on dimensions such as hostility, maturity, and social sensitivity. After participants completed some questionnaires, they were carefully debriefed and shown how the false feedback was created.

_____ethical _____cannot decide _____unethical

Ethical principle(s):

Study # 4. A psychologist is interested in studying discrimination against gay men. She carefully trains a male confederate to portray stereotypical "macho" and "gay" behavior. In the laboratory, naive participants interview the confederate for a hypothetical job. Without their knowledge, the psychologist observes their nonverbal gestures, eye contact with the confederate, and so forth. In order to assure that participants do not talk to their friends about the study, the psychologist never reveals to them that the true purpose was to study discrimination.

_____ethical _____cannot decide _____unethical

Ethical principle(s):

Study # 5. Deception was employed in a study examining the relationship between attributional style and self-esteem. Prior to participation, research subjects were informed of the requirements and purpose of the experiment to the extent possible given the deception component. Freedom to withdraw from the study at any time was emphasized. Following an assessment of attributional style, all participants were given false feedback on a test of a particular intellectual ability and were told that their scores indicated that they performed below average. Attribution and self-esteem measures were then administered. Immediately upon completion, subjects were thanked for their participation and promised a detailed report of the study. Two months later, subjects received the report, which fully described the deception.

_____ethical _____cannot decide _____unethical

Ethical principle(s):

Study #6. A team of researchers is interested in studying helping behavior. They stage a scene in a subway in which a confederate falls off his seat and bleeds from the mouth. The dependent variable is how quickly bystanders help the "victim." The bystanders are never told they have been in an experiment.

_____ethical _____cannot decide _____unethical

Ethical principle(s):

Study # 7. Participants are invited to be "confederates" of the experimenter who is ostensibly doing a study on the effects of stress on job interview performance. The participant's role is to give the other study participant (who is in fact the "real" confederate) negative feedback about his interview performance. They are to tell him that he is performing poorly at the task he is working on, is unlikely to get the job, and to make demeaning remarks about the interviewer's personality. If the participant protests, the experimenter gives him prods such as, "The experiment requires that you must continue."

_____ethical _____cannot decide _____unethical

Ethical principle(s):

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INTEGRATING "TRY IT" ACTIVE LEARNING EXERCISES

Exercise 2—11
Social Psychology Quiz

This exercise is located on page 23 of the text, and consists of 10 questions, each asking students to guess the results of social psychological research. The exercise can be used to make the point that not all results from social psychology are "just common sense." If you use this in class, have students answer the questions before you assign the chapter. After students have made their guesses and received feedback, you can ask them to try to explain the results that they guessed wrong, and ask if they now make sense. This can also be used as a lead-in to a discussion of hindsight bias (Fischhoff, 1975).

Exercise 2—12
Archival Analysis of Men and Women in the Media

This exercise is located on page 26 of the text. It suggests that students do their own archival analysis of how women and men are portrayed in the media. You might ask students to bring you the images so that you can scan them and present them to the entire class.

Exercise 2—13
Correlation Does Not Equal Causation Quiz

This quiz is located on page 30 of the text and the answers are located on page 45. Eight correlations are presented, and students are asked to generate alternative explanations of the results. Before students complete this on their own, you might introduce the exercise with a couple of additional examples in class:

(1) A survey found a positive correlation between the number of dogs in a community and the number of fire hydrants. Is this a case of "if you build it, they will come" (that is, are the fire hydrants attracting the dogs)? What else could account for the found correlation? (e.g., size of the community)

(2) A researcher went to an elementary school and did a study examining the relationship between aspects of students' physical build and their performance on a test. To his surprise, the researcher found a significant correlation between students' shoe size and their test scores. Why might this correlation exist? (The researcher did not control for the third variable, student's age.) After discussing the quiz, you might assign Exercise 2—15 and ask students to be on the lookout for their own examples of faulty inference in the media.

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STUDENT PROJECTS AND RESEARCH ASSIGNMENTS

Exercise 2—14
Conducting an Observational Study

To give students some of the "hands-on" flavor of social psychological research, you can have them (ideally in pairs) conduct an observational study. Some ideas for studies are presented below, or students may wish to derive a method to test a hypothesis of their own. In each case, ask students to specify the hypothesis or research question, to decide ahead of time on a method, including what units will be sampled, over how long a period of time, how these units will be selected, what behavior will be coded, and along what dimensions. Students should devise a coding form for themselves ahead of time. Both members of a pair should code the data, and the percentage of agreement should be calculated as a measure of interjudge reliability. Disagreements between coders can be resolved through discussion. Have students report back by writing a paper summarizing their hypothesis, method, coding procedures, and results (using descriptive statistics such as means or frequency distributions).

Possible projects include:

1. What kind of explanations for their outcome are given by athletes who win versus athletes who lose? Use the sports pages to develop a topology of explanations. (This was done by C. Peterson (1980), "Attributions in the sports pages: an archival investigation of the covariation hypothesis," *Social Psychology Quarterly, 43,* 136—140). Try not to develop too many categories, but rather use fairly general categories such as accepting responsibility for the outcome oneself versus citing the competitor as being responsible, citing temporary or changeable causes such as injury versus citing more long-lasting causes such as problems with the coaching staff, and so forth. When you are done coding, see if you can come up with any generalizations about the explanations used by winners versus those used by losers.

2. How has the portrayal of men versus of women in the media changed over the past 30 years? Pick a medium, for example, ads in *Time* magazine or the comic strips from your local newspaper. Go to the library and find some issues from 30 (or more) years ago. After looking through these briefly, develop a coding scheme. For example, you could do your own replication of the "faceism" studies by Archer et al. (1983) and Akert et al. (1991) described in the text (pages 26, 45), or you could look at the relative numbers of men and women depicted, what kind of role (housewife, worker, unable to tell, etc.) is being played by the characters portrayed, or what setting (home, work, or social) the characters are in, or how dominant, submissive, or egalitarian male versus female characters act in relationship to each other. [More details on similar projects are given in Carpenter (1998, Content analysis for research novices, *Teaching of Psychology, 25,* 42—43).]

3. Conduct an "unobtrusive measures" study of the concerns portrayed by men and women, as depicted in the kinds of graffiti found in men's versus in women's bathrooms on campus (of course, you will need a member of each sex in order to do the counts!).

4. Compare how men versus women portray themselves or portray the kinds of characteristics they are looking for in a romantic partner by doing an analysis of the personal ads. Alternatively, you might compare and contrast the kinds of ads presented by people in different media (a small town paper versus a city paper); or compare ads from different special interest magazines.

5. Do an observational study of who touches and is touched by whom. Find an area of the campus or town to observe, and study pairs of people. Code each pair as to the gender (and possibly age) of each member, count the number of times each person touches the other, and indicate where on the body each touch is made. How often and where on the body do men touch women, men touch men, and women touch women? You might include boys and girls separately.

6. Do an "unobtrusive" study of door holding behavior to determine if chivalry is still alive. Students would position themselves outside a busy building and then observe and tally up how many times males hold the door open for females as well as the other remaining combinations of door holding behavior (e.g., females holding the door open for males).

Exercise 2—15
Examining Media Reports of Scientific Research

One out-of-class project that students often find interesting is to search advertisements and the news media for examples of the confusion of correlation and causation. Before giving this assignment to students, you might make a transparency or handout based on the "Correlation and Causation: Knowing the Difference" in the text (Try It!, p. 30). Reviewing these items, which include several examples of media reports, should prime students for the kinds of errors they themselves might find in the media.

Exercise 2—16
Debate on Whether the Use of Deception in Research Is Justifiable

Have students conduct a debate on whether the use of deception is justified in social psychological research. The textbook provides arguments about why deception may be necessary, and cites evidence against the idea that it may be harmful. Students arguing the "pro-deception" side should review this textbook material as they prepare. Students arguing the "anti-deception" side should refer to Z. Rubin's articles, "Taking deception for granted" (March 1983 *Psychology Today,* pp. 74—75) to help them prepare. Rubin argues that deception may retard scientific progress. Another pair of articles that the students could read to prepare themselves is the Baumrind-Milgram debate over ethical issues in the Milgram obedience study: Baumrind, D. (1964). Some thoughts on ethics of research: After reading Milgram's "Behavioral Study of Obedience." *American Psychologist, 19,* 421— 423; and Milgram, S. (1964). Issues in the study of obedience: A reply to Baumrind. *American Psychologist, 19,* 848—852. (This pair of articles has been reprinted in Pines, A. M., & Maslach, C., *Experiencing social psychology: Readings*

andprojects (3rd ed.), pp. 11—18. New York: McGraw-Hill.) Another pair of articles exploring the pros and cons of deception can be found in B. Slife (Ed.), *Taking sides: Controversial issues in psychology* (9th ed.), Guilford, CT: Dushkin. Of course, if students read the Milgram study debate, it is helpful for them to have seen a filmed version of the Milgram experiment, such as that presented in the video *The Power of the Situation* (referenced in the film/video section of Chapter 1). In class, the session before the debate, assign students to roles. Preparation for the debate could be done outside of class (for example, if debaters are receiving extra credit for this assignment), or the first part of the next class session could be allocated for preparation. Each team should get together and decide what their best arguments are and prepare a three-minute summary statement. Each team presents its side and listens to the other side. Debaters then have five minutes to prepare a one-minute rebuttal. At the end of the debate, class members who are observing can discuss which arguments they found most persuasive.

Exercise 2—17
Participating in Research Online

Allow your students to get involved in psychology by participating in an actual experiment. In this project, students are assigned to participate in one of the several social psychological studies being conducted over the Internet. One URL that lists Web-based experiments is the Social Psychology Network at http://www.socialpsychology.org/expts.htm. A second URL is through the American Psychological Society at http://psych.hanover.edu/Research/exponnet.html. Note that studies vary considerably in the amount of feedback that they provide to students; some come complete with debriefing, and others merely thank the respondent for participating. As a project, you could assign students to participate in one or more studies and then write a short paper describing their experience, using either the hypotheses provided by the researcher or (should these not be available) their speculations as to what the researchers' hypotheses might be.

Exercise 2—18
An Online Analysis of General Social Survey Data

An alternative to participating in an experiment is to have students do a brief survey research analysis. The National Opinion Research Center (NORC) has made available a file of its General Social Survey (GSS) data for analysis online. At http://www.norc.org/GSS+Website/, one will find a listing of the various topics examined in different GSS surveys, along with the code names for the variables. Go to the SDA Archive and select the "Small Dataset for Testing" (the full GSS dataset is available as well, and has more interesting variables from a psychological standpoint, but is quite large and confusing especially if students are doing this on their own). First select "browse codebook" to select variables. Write down the variable names. Students might pick two variables that they hypothesize are related (for example, *ideo,* which stands for political identification as liberal, conservative, or moderate, and *eqopp,* which looks at attitudes towards government promotion of equal opportunity for blacks and women), and then go back and select the "frequency or crosstab" option. Insert the name of one variable as a row variable and the other as a column variable, and select the option for row percents, column percents, or both, as well as color-coding and question text. Then press "run the table," and the analysis will appear. Students can then print out this analysis and use it as the basis of a short paper.

Exercise 2—19
Using the Dining Facility as an Observation Site

Nancy Koschmann and Richard Wesp suggest using the college dining facility as a site where students can apply research skills. For observational studies, encourage your students to observe the behavior of others. Ideas include food selection, seat selection, manners/etiquette, and departing behaviors. Encourage your students to select their own behavior. Instruct your students to record their observations, maintain confidentiality, and explain their behavior if approached. You might also have students include operational definitions, when appropriate, and note the challenges of observational studies. You can also consider having students work in pairs and then compare their observations for agreement and disagreement. Have students return to class with their notes and lead a discussion of the observations and the benefits and challenges associated with this research technique.

Source:

Koschmann, N., & Wesp, R. (2001). Using a dining facility as an introductory psychology research laboratory. *Teaching of Psychology, 28,* 105—108.

Exercise 2—20
Comparing Empirical and Popular Reports of Psychological Research

In this activity students read and compare media and empirical reports of research. Have your students read both reports and complete the handouts associated with each (see handouts 2.20a, b, and c to follow). In class have students work in small groups to compare their answers to the worksheet questions and work to resolve any differences by referring to the articles. Once the group has reached agreement, they should then work to complete the third handout comparing the two reports.

Source for documents:

deLeon, F.M. (1999, October 24). Rocking the cradle—And the marriage: Programs help couples prepare for parenthood. *Seattle Times.* Retrieved November 25, 2006, from http://archives.seattletimes.nwsource.com/cgi-bin/texis.cgi/web/vortex/display?slug=2990888&date=19991024&query=%22rocking+the+cradle%22

Shapiro, A.F., Gottman, J. M., & Carrere, S. (2000). The baby and the marriage: Identifying factors that buffer against decline in marital satisfaction after the first baby arrives. *Journal of Family Psychology, 14,* 59—70.

Source for activity:

Hall, S.S., & Seery, B.L. (2006). Behind the facts: Helping students evaluate media reports of psychological research. *Teaching of Psychology, 33,* 101—104.

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HANDOUT EXERCISE 2.20a: EVALUATING STUDIES

Directions: Answer the following questions according to what you read in the *Seattle Times* article.

1. Based on the headline and introductory paragraph, what do you believe the study discovered or "proved"?

_____
_____
_____
_____

2. What is/are the goal(s) of the study?

_____
_____
_____
_____

3. What do you read about the sample and data gathering strategy of the study?

_____
_____
_____
_____

4. What were the main concepts the study focused on? How were the concepts defined and measured?

_____
_____
_____
_____
_____
_____
_____
_____

5. Summarize the main findings in your own words.

_____
_____
_____
_____
_____
_____
_____

6. Did the media article critique the methods used in this research? If so, what strengths (aspects that made it a good study) were mentioned? What limitations (aspects that made it a questionable study) were mentioned?

_____
_____
_____
_____
_____
_____

7. What was NOT mentioned in the media article (think about strengths and limitations) that you think would be important to know about the research so that you can draw appropriate conclusions about the study's findings and implications?

_____
_____
_____
_____
_____

8. Did you detect any potential bias in how the writer of the media article presented the study (e.g., disclaimers for only some findings, value-laded statements)? If so, list and explain.

_____
_____
_____
_____

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HANDOUT EXERCISE 2.20b: EVALUATING STUDIES

Directions: Answer the following questions according to what you read in the journal article.

1. What is/are the goal(s) of the study?

_____
_____
_____
_____

2. The sample: Who made up the sample (demographics, size)? How were participants selected? Can you generalize these findings toward others? If yes, toward whom?

_____
_____
_____
_____

3. Data gathering: How was information gathered (self report, observed, etc.)?

_____
_____
_____

4. Instruments: What constructs (concepts) were measured? What types of instruments were used to measure each construct (scales, single items, etc.)? How accurately do you think the constructs were represented as measured by the instruments? Why/Why not?

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_____
_____
_____
_____
_____
_____
_____

5. Results/Discussion, Conclusions: What were the statistical procedures (correlations, means, experimental controls, etc.)?

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_____

6. What were the main findings? Were relationships between variables presented as causal or correlational? How well did the author's conclusions fit the findings (go too far, ignore something)?

_____
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_____
_____

7. Strengths/Limitations: What strengths of the methodology were mentioned/not mentioned? What limitations of the methodology were mentioned/not mentioned?

_____
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_____
_____
_____
_____

8. Implications: What are the implications for research, practice, policy, and/or everyday living for consumers (reported or not reported)? Overall, what should readers keep in mind when interpreting the general findings?

_____
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_____
_____

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HANDOUT EXERCISE 2.20c: EVALUATING STUDIES

Directions: After you have reached consensus with your group on handout 2.20a and 2.20b, respond to the following questions comparing the two articles you read.

1. What type of relevant information about the study is missing from the media article?

2. What are the differences in how sampling, data gathering, measurement (instruments), statistical analysis, findings, strengths/limitations, and implications were reported?

3. How meaningful/misleading are the differences? Explain.

4. How does reading the journal article change your conclusions/opinions of the findings as reported in the media article?

5. What could be in the media article to make it more accurate/less misleading?

_____
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_____

6. Did you detect any pattern of bias in the media article? Explain.

_____
_____
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_____
_____

7. What would you conclude from this one experience about the media reporting on social research? Why might it be challenging for media and research articles to match up entirely?

_____
_____
_____
_____
_____
_____

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SUGGESTED READINGS

Aronson, E., Ellsworth, P., Carlsmith, J.M., & Gonzales, M. (1989). *Methods of research in social psychology* (2nd ed.). New York: Random House.

Aronson, E., Wilson, T. D., & Brewer, M. (1998). Experimental methods. In D. Gilbert, S. Fiske, & G. Lindzey (Eds), *Handbook of social psychology,* 4th ed. New York: McGraw-Hill.

Brinthaupt, T. C. (2002). Teaching research ethics: Illustrating the nature of the researcher—IRB relationship. *Teaching of Psychology, 29,* 243-245. Brinthaupt argues that a neglected aspect of training students about research ethics is attention to the relationship between researchers and the IRB. He includes several case studies on the effects of ethical concerns on the career directions of faculty members.

Brannigan, C.G., & Merrens, M.R. (Eds.) (1995). *The social psychologists: Research adventures.* New York: McGraw Hill. Includes autobiographical reports of how many notable social psychologists developed their research careers.

Campbell, D.T. (1969). Reforms as experiments. *American Psychologist, 24,* 409—429. Argues that social policy reforms should be treated as quasi-experiments; Good examples of archival research.

Christensen, L. (1988). Deception in psychological research: When is its use justified? *Personality and Social Psychology Bulletin, 14,* 664—675.

Cook, T.D., & Campbell, D.T. (1979). *Quasi-experimentation: Design and analysis for field settings.* Boston: Houghton Mifflin. The definitive source for understanding internal and external validity.

Dunn, D.S. (1998). *The practical researcher.* New York: McGraw-Hill. A research methods text by a social psychologist focusing on helping students develop as consumers as well as potential producers of research.

Gergen, K. J. (1973). The codification of research ethics: Views of a Doubting Thomas. *American Psychologist, 28,* 907—912.

Hoyle, R.H., Harris, M.J., & Judd, C.M. (2001). *Research methods in social relations* (7th ed.) New York: Wadsworth.

Hunt, M. (1997). *How science takes stock: The story of meta-analysis.* New York: Russell Sage. A great introduction and overview of meta-analysis.

McKenna, R.J. (1995). *The undergraduate researcher's handbook: Creative experimentation in social psychology.* Boston: Allyn & Bacon. Teaches research methods in social psychology by emphasizing student research projects rather than the professional literature. Provides many good examples of studies that could inspire students to go out and conduct their own research.

Pettigrew, T.F. (1996). *How to think like a social scientist.* New York: Longman. Focuses on critical thinking and understanding of causation and control. Includes seven reprints of media reports of social science research for students to practice analyzing.

Pines, A.M., & Maslach, C. (1993). *Experiencing social psychology: Readings and projects.* New York: McGraw Hill. Includes ideas and workbook forms for student research on topics spanning the field of social psychology.

Schlenker, B.R., & Forsyth, D.R. (1977). On the ethics of psychological research. *Journal of Experimental Social Psychology, 13,* 369—396.

Stanovich, K.E. (2006). *How to think straight about psychology,* 8th ed. New York: Allyn &

Bacon. A good resource for helping students learn to evaluate the popular media's reporting of research on psychology and the social sciences.
Webb, E.J., Campbell, D.T., Sechrest, L., & Gove, J.P. (1981). *Nonreactive measures in the social sciences.* Boston: Houghton Mifflin.

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WEBSITES TO EXPLORE

http://www.mcli.dist.maricopa.edu/proj/res meth/login.html An excellent interactive site which presents students with descriptions of the experimental, correlational, naturalistic observation, survey, and case study methods and their strengths and limitations, and then has self-quizzes that allow students to practice differentiating the techniques from each other and to identify the strengths and weaknesses of case examples.

http://www.socialpsychology.org/expts.htm. Online social psychology experiments for students to participate in (see Exercise 2.17).

http://psych.hanover.edu/Resea7h/exponnet.html. More online psychology experiments for students to participate in (see Exercise 2.17).

http://psychexps.olemiss.edu/index.html A third source for online psychology experiments.

http://www.apa.org/ethics/code/index.aspx The American Psychological Association's website that contains the new research ethics code as well as information on the ethical treatment of animals with regard to psychological research.

http://www.ogc.fullerton.edu/tutorial/humanIntro.asp A well-constructed IRB tutorial and self-test maintained by the Office of Grants and Contracts at California State University, Fullerton.

http://poynter.indiana.edu/sas/lb/ In this tutorial on the ethics of research with human subjects, students work on a historical case: The Tuskegee Syphilis Study. Instructor materials are also included.

http://www.psych.ualberta.ca/~varn/Kenrick/Reading.htm This is an excellent site designed to help students read reports of empirical research.

http://chronicle.com/blogs/percolator/is-psychology-about-to-come-undone/29045. This is an article describing the controversy over whether results in Social Psychology replicate. Brian Nosek at UVA is focusing his research on determining whether past published results replicate. This is a controversial move that is making some published researchers nervous. You could have students discuss whether this is a good idea or not in terms of advancing science and what professional risks Brian Nosek may face for making this choice.

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FILM AND VIDEO LISTINGS

Against All Odds: Inside Statistics (videos 30 min. each, ANN). This series put out by Annenberg teaches statistics. Episodes particularly relevant to social psychology are *The Question of Causality, Samples and Surveys,* and *Experimentation.*

The Case of ESP. (57 minutes, 1984, TLV). This NOVA program explores recent research into extrasensory perception and claims for and against para-normal phenomena. Can provide a stimulating beginning for discussions of research ethics, values, and methodology.

Experimental Design. (2 parts, 30 minutes each, 1982, Insight Media). Distinguishes between correlational studies and experiments and describes the basic principles of experimental design.

Ghostbusters (1984). At the beginning of this movie, there is a scene in which Bill Murray, playing a psychologist, conducts an experiment on ESP. It is an amusing illustration of how not to do experimental research.

Inferential Statistics: Part 2: Hypothesis Testing—Rats, Robots, and Roller Skates. (28 minutes, 1976, PSU). A humorous presentation of basic research principles including random assignment, control groups, and hypothesis testing.

Junk Science: What We Know That Isn't So. (58 min, 1997, ABC). This ABC special hosted by John Stossel examines the relationship between science and politics, and looks at how scientists view several issues popularized by the media.

Methodology: The Psychologist and the Experiment (31 minutes, 1972, PSU). An introduction to research methods and experimental design. Focuses on Schacter's fear-affiliation study and a study by Riesen on the effects of light deprivation on visual-motor coordination in cats. Discusses independent variables, dependent variables, control groups, random assignment, and basic statistical concepts.

Princess Bride (1988). In a scene about 56 minutes into the film, the six-fingered man conducts "research" on his torture device by adjusting the intensity of the suction and observing and interviewing his victim.

Research Methods for the Social Sciences. (32 minutes, 1996, IU). Discusses the scientific method as applied to social science research. Illustrates different types of experimental designs and considers the use of experimental and control groups.

Social Psychology in the Laboratory. (24 minutes, 1975, PSU). Three experiments in social psychology illustrate some of the standard features of experimental methodology. Shows such experimental procedures as the briefing and debriefing sessions, as well as such aspects of establishing the environmental setting as design of the laboratory, seating arrangements, and equipment. Experiments explore the stability of three-person groups, nonverbal communication, and communication in problem solving.

Understanding Research. (27 minutes, 1991, ANN, *Discovering Psychology* series). The scientific method in psychological research is presented, along with data collection and analysis in the lab and in the field. The value of critical thinking in interpreting research findings is highlighted. Also available free to educators for direct streaming at learner.org.

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ONLINE VIDEOS TO EXPLORE

Stanford Prison Experiment.(30 seconds) This webpage has an embedded YouTube clip that shows prisoners in the Stanford Prison Experiment "getting arrested". This clip nicely illustrates how external validity (having the study be lifelike, even to participants) may sometimes be unethical. Students can discuss how researchers should best negotiate this tradeoff.
http://www.prisonexp.org/psychology/2

Slippery Banana Peel. (2 minutes) Myth Busters test whether people really slip on banana peels. It is a good example of testing a specific hypothesis. Can lead into discussion about how to form a sensible, specific hypothesis and how to best test it. Also, the hypothesis in this clip has nothing to do with any larger theory so it can launch a discussion of a hypothesis versus a theory and how hypotheses can be generated from folk wisdom.
http://www.youtube.com/watch?v=YZRq3XxCZXo

What would you do? (various clips between 5 and 10 minutes long) This ABC television show has various episodes in which people's reactions to a staged scenario are observed and then discussed. This could be used to discuss field research, including whether the scenarios in this show represent experiments, ethical considerations that need to be taken into account, and the advantages of observing behavior in its natural context in people who do not know that they are being observed.
http://abcnews.go.com/whatwouldyoudo

PEARSON VIDEO SERIES FOR SOCIAL PSYCHOLOGY

Current and cutting edge, the new *MyPsychLab Video Series* for social psychology features videos covering the most recent research, science, and applications. Watch clips from ABC's wildly popular *What Would You Do?* series and discover how real people in real-world scenarios bring to life classic concepts in social psychology. Assessments tied to every video provide immediate feedback and allow both students and instructors to track progress throughout the course. (www.MyPsychLab.com)

Video Series Table of Contents

Introduction:
ABC's What Would You Do?: Beach Blanket
Inside Research: Nature vs. Nurture and the Stanford Prison Experiment: Phil Zimbardo
Interviews: The Complexity of Humans: Phil Zimbardo

Cognitive Dissonance:
ABC's What Would You Do?: Hazing
Real Life Application: Cognitive Dissonance: Need to Justify Our Actions
Interviews: Carol Tavris: What Is Cognitive Dissonance?

Research Methods:
ABC's What Would You Do?: Waiting Room
Inside Research: Research Methods

Interviews: Lisa Feldman Barrett: Could you talk a little bit about some of your methodologies?

Attitudes and Attitude Change:
ABC's What Would You Do?: Infomercials
Real Life Application: Implicit Attitudes
Interviews: Infomercial Example: Robert Cialdini

Conformity:
ABC's What Would You Do?: Authority Figure
Inside Research: Milgram's Obedience Study
Real Life Applications: Social Influence
Interviews: Car Salesman Example: Robert Cialdini

Social Cognition:
ABC's What Would You Do?: Bike Theft
Inside Research: Self-Fulfilling Prophecy
Real Life Application: Social Cognition
Interviews: Mazarin Banaji: How do experiences influence bias?

Social Perception:
ABC's What Would You Do?: Battered Woman
Real Life Application: Differences Between Collectivistic and Individualistic Cultures
Interviews: Cognition, Emotion, and Motivation Across Cultures: Shinobu Kitayama

Prejudice:
ABC's What Would You Do?: Gender-Appropriate Toys
Interviews: Joshua Aronson: How does stereotype threat impact test performance?

Interpersonal Attraction:
ABC's What Would You Do?: Cheating Husband
Real Life Application: Secrets of Beauty
Interviews: Triangular Theory of Love: Robert Sternberg

Prosocial Behavior:
Real Life Application: Giving Back Big
Random Acts of Kindness: Paying Tolls

The Self:
Real Life Application: Body Image, Kianna, 12 Years Old, Part 1
Real Life Application: Body Image, Kianna, 12 Years Old, Part 2
Shinobu Kitayama: Could you talk about the East/West difference?

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