CHAPTER 5

Ethical Guidelines for Psychological Research

Consider the following questions as you read Chapter 5

- Why do we need ethical guidelines for research?
- How were ethical guidelines for psychological research developed?
- Were the Milgram (1963) and Zimbardo (1974) studies ethical? Why or why not?
- What are the current ethical guidelines for human participants?
- What is an institutional review board (IRB), and what purpose does it serve?
- What are the current ethical guidelines for animal subjects?
- How do ethics influence the way we report research?

In 1932, in Tuskegee, Alabama, the U.S. Public Health Service began a research study to investigate the course of syphilis in the human male. The researchers recruited 399 African American men who had previously contracted syphilis. The men were told that they had "bad blood" and that they could receive free health care by coming to the clinic where they were studied. None of the men were informed that they had syphilis by the researchers, and none of the men were treated for the disease (Brandt, 2000).

At the time the study started, the treatment for syphilis was dangerous and was not always effective. Thus, the researchers of the Tuskegee syphilis study were interested in better understanding the damage that the disease did to the men as it progressed to help determine if treating the disease was better than not treating it. By 1947, however, penicillin had become available as a safe and effective treatment for syphilis. Yet the researchers of the Tuskegee syphilis study did not end their study until 1972 and did not make penicillin available to the participants to treat the disease.

Through this study, the researchers learned a good deal about the progression of the syphilis disease. They learned about the different stages of the disease and about the many symptoms that accompany the disease. These symptoms include rashes, warts on

the genitalia, and pus-filled skin pox. Later stages involve damage to the internal organs, including dementia when the brain deteriorates in some patients.

The researchers who were responsible for the Tuskegee syphilis study believed for the most part that their study was ethical (Brandt, 2000). They thought the medical knowledge about syphilis that would be gained was an important contribution to science. In addition, they argued that the men in the study were not being harmed by the study. The participants had already contracted syphilis, so the researchers believed that they were not doing anything to worsen the disease. The participants were also receiving free medical examinations that they could not have afforded on their own. In addition, in 1969, the Centers for Disease Control (CDC) reaffirmed the need for the study after concerns about the ethics of the study were raised. They also won the approval of the American Medical Association (AMA) for the study.

Do you agree with the attitudes of the researchers of the Tuskegee syphilis study that their study was not harmful to the participants in the study? If you answered "no" and believe it was harmful, *why* do you think it was harmful? In what way did the study harm the research participants? The answers to these questions have been a major point of discussion among psychologists and medical researchers for the past 50 years or so, as changes in the way society views the ethics of research on human participants has taken place. These changes in ethical guidelines for research have been motivated in large part by the discussion of studies such as the Tuskegee syphilis study, where it is clear to many people that the researchers did not meet their ethical obligations. In this chapter, we will discuss the historical context for ethical guidelines that provide the motivation for current ethical standards, the current guidelines for research with humans and animals, and the role of an institutional review board in the research process. See Figure 5.1 for an indication of the steps in the research process to which ethics are relevant.

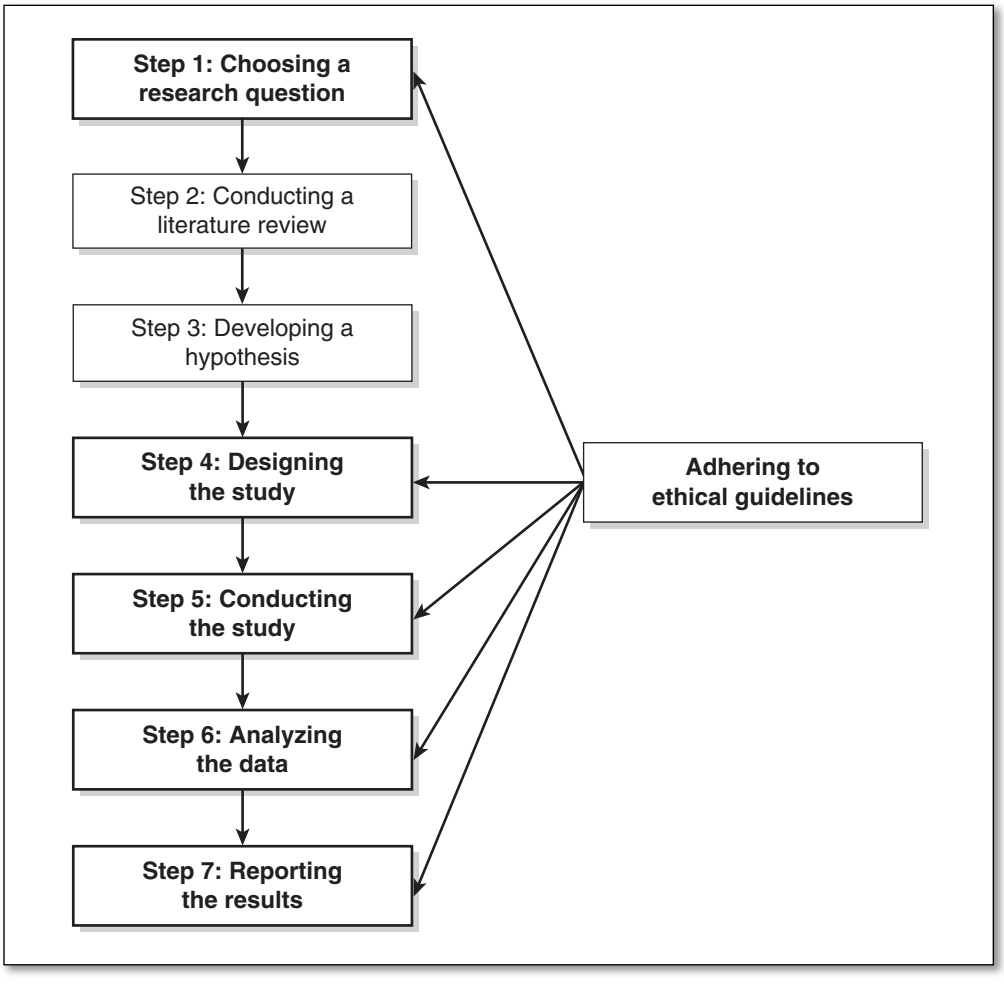
HISTORICAL CONTEXT FOR ETHICAL GUIDELINES

Why do we need ethical guidelines for research in psychology? There are several reasons that researchers are held to ethical standards, but the most important one is that researchers are not always able to be objective about the effects of a study on the participants and whether or not a study will be harmful to the participants. In addition to the Tuskegee syphilis study, there are a few other important examples of studies that were conducted to advance scientific knowledge but also may have harmed the research participants in the process. Some particularly heinous examples are the experiments conducted by the Nazis on World War II concentration camp prisoners.

Nuremberg Code

At the end of World War II, the world learned of the atrocities the Nazis had committed during the war. Among their horrific acts were experiments conducted on concentration camp inmates. These experiments were conducted by scientists interested in learning about the limits of the human body and mind. Many of the experiments were designed to better understand the conditions soldiers are able to endure in war and involved participant exposure to extreme temperatures, infections, and noxious chemicals (Schuler, 1982). The subjects of these

Figure 5.1 Steps in the Research Process: Ethical Guidelines



NOTE: Ethical guidelines must be followed at several steps in the research process.

experiments were forced to participate as prisoners in the Nazi concentration camps. The details of the experiments became public during the Nuremberg trials held between 1945 and 1949, where Nazi officers and officials were tried for war crimes (see Figure 5.2). The **Nuremberg Code** was developed by officials involved in the trials (judges, medical experts) as a result of what was learned about the Nazi experiments and was an early attempt to specify ethical standards for research with human participants.

Nuremberg Code: set of ethical guidelines developed for research with human participants based on information gained during the Nuremberg trials after World War II

Figure 5.2 Experiments Conducted on Nazi Concentration Camp Prisoners During World War II Prompted the Development of the Nuremburg Code of Ethics

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The Nuremberg Code focuses on the issues of **informed consent**, which is informing participants about the study and then gaining their consent for participation, and **coercion**, where participants' right to refuse or end participation in a study is taken away. The Code also includes other important ethical guidelines that are still part of the ethical guidelines psychologists currently adhere to. The Nuremberg Code states the following (Schuler, 1982):

1. Participation in research is voluntary, and participants must be given information about the risks involved in the research (i.e., informed consent and freedom from coercion).
2. The research must contribute to scientific knowledge and be conducted by qualified researchers.
3. The researchers must avoid unnecessary harm, take precautions against risk, ensure that benefits outweigh the risks of the study, and terminate the study if unforeseen harm comes to the participants.
4. The participants have the right to discontinue their participation in the study (i.e., freedom from coercion).

Informed Consent: obtaining consent from participants for participation in research after the participants have been informed about the purpose, procedure, and risks of the research

Coercion: forcing participants to participate in research without their consent

APA Code

In 1953, the American Psychological Association (APA) codified its own ethical standards for the field of psychology, including psychological research (Schuler, 1982). (The European Federation of Psychologists' Association, www.efpa.eu, and several other international psychologists' associations have developed similar ethics codes that have been adopted by other countries.) Many of the elements in the APA code overlapped with the main elements of the Nuremberg Code described above. Two additional elements were included in the guidelines for research: (1) the researchers must reduce harm due to **deception**, which is misleading the participants about the study's purpose or procedures, and (2) the researchers must ensure the confidentiality of participant data. However, the original APA code left the responsibility for overseeing research studies to the researchers, and several researchers used the weighing of benefits against risk element to justify harmful studies by claiming that the studies were highly beneficial. In some psychological studies, the researchers have argued that the important knowledge gained in the study justified the risk to the participants. Two well-known examples of research

Deception: misleading participants about the purpose or procedures of a research study

conducted by psychologists that many have argued stretched the APA ethical standards are described below: the Milgram (1963) obedience study and the Zimbardo (1973) prison study.

Milgram (1963) Obedience Study. During the Nuremberg trials, several defendants argued that they were not responsible for their wartime actions because their actions were carried out to follow orders of their superiors. This defense led social psychologists to some interesting research questions. How strong is the power of authority? Does a person need to have sadistic tendencies in order to harm another person, or is an order from an authority figure enough to cause someone to commit these actions? Stanley Milgram became interested in these questions and wondered how many people would harm another person simply because an authority figure told them to do so. Milgram designed a study to investigate these research questions that examined the effect of an authority figure on participants' behavior. In his study, participants were recruited to administer a memory task to a second participant. The second participant was actually a **confederate** in the study. In other words, the second participant was not an actual participant; instead, the confederate acted a part in the study to make the participants believe that he or she was just another participant in the study.

Confederate: a person who is part of a research study but acts as though he or she is not, to deceive the participant about the study's purpose

The confederate was placed behind a screen and attached to electrodes in the participants' presence. After that point, the participants could hear the confederate but could not see him during the study. The participants were then asked to read word pairs to the confederate for a later memory test. The participants administered the memory test by reading a word and asking the confederate to choose the word it was paired with in the study list from four choices. Each time the confederate answered incorrectly, the participants were instructed to deliver an electric shock to the confederate by pressing a button on a console placed in front of them. For each wrong answer, the participants were told to increase the level of shock delivered. Shocks were not actually delivered to the confederate, but participants were led to believe that they were actually shocking the confederate. The confederate cried out after some of the shocks as if in pain and was silent for the more severe shock levels. The buttons on the participants' console were labeled such that the shocks appeared to increase in intensity with each incorrect answer. If participants resisted (verbally or nonverbally), an experimenter in a white lab coat (i.e., an authority figure) encouraged them to continue, with statements increasing in strength as more resistance was displayed (see Figure 5.3).

Figure 5.3 An Experimenter and Participant as in the Milgram (1963) Study

SOURCE: Copyright by Jupiter Images, www.jupiterimages.com.

NOTE: The photograph shows that an experimenter in a lab coat served as the authority figure and encouraged the participants to continue the study if they were hesitant to administer electric shocks to the "learner" confederate.

At the start of the study, Milgram asked other social psychologists how many participants they thought would continue the experiment to the end, where the shocks were labeled "danger" and "XXX." Most predicted that only the very cruelest participants (less than 2%) would administer all the shocks. However, the results of Milgram's study showed that almost two thirds of the participants administered all the shocks, and none of the participants checked on the confederate without asking permission first. This study showed that the presence of an authority figure greatly influences people's behavior, to the point where people may harm another person when ordered to do so.

Milgram justified his study by arguing that although the participants were deceived in the study, they did not experience long-term harm from the study. The participants were fully debriefed after the study to show that no harm had been done to the confederate. In addition, vital knowledge about human behavior was learned. The social psychologists Milgram had surveyed at the start of the study had been unable to predict the results of the study. Thus, new knowledge was gained about the effect of authority figures on behavior. However, critics of the study argued that the stress of the situation and deception of the participants were too great and were psychologically harmful (Schuler, 1982). Furthermore, it is unclear whether the participants felt they could withdraw from the study if they wished, given that every time they protested the experimenter told them they were required to continue.

Imagine how you would feel if you were a participant in the Milgram study and learned that you were willing to shock another person simply because a stranger in a lab coat told you to. How would that knowledge change the way you felt about yourself? Milgram countered the criticisms with a survey of the participants after the study that showed that a large majority of them were "glad" or "very glad" to have participated, despite the stressful situation they experienced in the study. Despite Milgram's arguments, an exact replication of the Milgram study is unlikely to meet the ethical standards for research currently in use in psychology (but see Burger, 2009, for a description of a recent modified replication that was also covered on the ABC News show *Primetime*).

Zimbardo (1973) Prison Experiment. Another famous study that was criticized for stretching ethical standards for research was conducted by Phillip Zimbardo at Stanford University in the early 1970s. Zimbardo was interested in how the roles we are given in a society affect our behavior toward others. He created a mock prison in the basement of the psychology building at Stanford and randomly assigned students to play the role of prisoner or guard in the mock prison. He carefully screened the participants to ensure that they were all similar in terms of intelligence and personality characteristics. Thus, the only difference between the prisoner and guard groups was the role they were assigned to play in the prison experiment.

Zimbardo created conditions for the prison that were as realistic as possible. He had the participants assigned as prisoners publicly arrested by campus police before they were placed in the prison. They were given prison clothes to wear and assigned a number. They remained in the prison 24 hours a day for the length of the experiment. Small cells were built in the prison area to confine the prisoners for much of their time. The guards were given uniforms and worked set shifts at the prison, returning to their student lives during their off hours.

Zimbardo had planned for the prison experiment to take place over 2 weeks but stopped the study after only a few days, when he realized that the study had become harmful to the participants. Some of the prisoners had extreme stress reactions and had to be released. Several of the guards became cruel and forced the prisoners to engage in embarrassing behaviors. However, none of the participants ever asked to stop the experiment. Both groups of participants, prisoners and guards, had lost the reality that they were participants in an experiment and were greatly affected by the situation they were placed in during the experiment.

Zimbardo followed ethical guidelines in designing the experiment. He considered alternate ways of studying the effects of the prisoner/guard roles, received informed consent from all the participants before beginning the study, and discussed the purpose of the study and its benefits (a process called **debriefing**) with the participants after the study ended (Zimbadro, 1973). He also stopped the experiment earlier than planned to avoid further harming the participants (see www.prisonexp.org for more information on this study provided by Zimbardo). However, critics of the study claimed that the participants should not have been placed in such a stressful situation in the study. Furthermore, given the powerful influence of the prison context, it was difficult for those involved in the study to be objective about the effects of the study. Zimbardo himself admitted to being influenced by the context of the prison study, feeling like a prison warden at times when the study was taking place (Reiniger, 2001).

Debriefing: discussing the purpose and benefits of a research study with participants, often done at the end of the study

CURRENT ETHICAL GUIDELINES FOR HUMAN PARTICIPANTS RESEARCH

Due to the criticism leveled at studies such as Milgram's and Zimbardo's, the APA Ethics Code has been revised several times to ensure that researchers include a thorough debriefing of the participants, more clearly define the conditions under which deception may be used, and include specific guidelines for research with animal subjects. See Table 5.1 for a summary of the current APA Ethics Code guidelines for research.

In addition to the APA Ethics Code, federal ethical guidelines exist that must be adhered to at all institutions that receive public funds. After the Tuskegee syphilis study became public, the U.S. Government formed a committee to discuss appropriate ethical guidelines for medical and psychological research. The committee produced the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979, p. 200), which lists the responsibilities of researchers as they conduct research with human participants and the rights of those participants before, during, and after a study (a copy of the full report can be viewed at www.nihtraining.com/ohsrsite/guidelines/belmont.html). The Belmont Report provides the set of ethical guidelines that researchers in psychology must adhere to. Three major principles are described in the report that outline the responsibilities of researchers: (1) *respect for persons*, (2) *beneficence*, and (3) *justice.* We will consider how

TABLE 5.1 Summary of the APA Ethics Code for Research

APA Code	Ethics Issues Addressed
1. Research should be approved by the researcher's IRB, where applicable.	IRB approval
2. Research must include an informed consent process, including the following: (a) purpose of the research (b) expected duration of the participants' participation (c) procedures used in the research (d) participants' right to decline to participate and withdraw participation at any time and the consequences of withdrawal (e) foreseeable risks of the research to the participants (f) benefits of the research (g) confidentiality rights of the participants (h) incentives for participation (i) whom to contact for questions or concerns	Informed consent
3. In addition to (2), if the research involves an experimental treatment, the participants must be informed that it is experimental, how participants will be assigned to groups, the available alternative treatments, and the compensation they will receive for participation.	Informed consent Reduce harm
4. In addition to (2), if the research involves video or audio recording of the participants, they must be informed ahead of time if it does not compromise the research to do so.	Informed consent Confidentiality
5. Incentives for participation must be reasonable so as not to be coercive.	Coercion
6. If the research involves deception, the researchers must determine that the deception is necessary and justified and explain any use of deception to participants as soon as possible at the completion of the study. Researchers may not use deception that is expected to cause physical pain or severe distress.	Deception Reduce harm
7. Thorough debriefing must be given for the study. If it is not possible to give debriefing immediately, researchers must protect against participants' harm.	Reduce harm
8. If researchers become aware of unexpected harm to participants, they must take reasonable measures to reduce harm, including termination of the study if necessary.	Reduce harm

APA Code	Ethics Issues Addressed
9. The following are rules to be remembered while doing research with animals: (a) adhere to federal and local guidelines for care and treatment of animals (b) involve trained personnel (c) minimize discomfort to the animals (d) painful or stressful procedures must be justified and only used when alternative procedures cannot be used (e) use anesthesia and prevent infection when surgical procedures are used (f) terminate animals quickly with minimal pain if termination is necessary	Animal research ethics
10. Researchers must report data accurately and correct errors if they are discovered.	Ethics in reporting research
11. Researchers must properly cite others' ideas and work when reporting research.	Ethics in reporting research
12. Publication credit can be taken only for work the authors have performed, and credit order should be determined according to the contribution of each author.	Ethics in reporting research
13. Data should be shared with other researchers to allow verification of results.	Ethics in reporting research

SOURCE: American Psychological Association (2002).

these principles translate to ethical guidelines for psychological research in the section below. Table 5.2 also provides an overview of the application of these principles to psychological research.

Respect for Persons

The first principle of the Belmont Report, respect for persons, refers to the treatment of participants in research studies. Informed consent is an important element of this principle, and it includes informing the participants about the nature of their participation in a study, including what the participants will do in the study, the purpose of the study, any risks associated with the study, benefits of the study, information about alternative treatments (if applicable), and the participants' rights during the study (especially their right to withdraw

TABLE 5.2 Applications of the Belmont Report Principles

Principle	Application
Respect for persons	Provide information about the study before it begins (nature of participation, purpose, risks, benefits)
	Obtain voluntary consent from participants after they are informed (i.e., informed consent)
	Give participants opportunity to ask questions
	Inform participants of right to withdraw
Beneficence	Reduce risk of harm to participants
	Potential benefits of the study must outweigh risks
	Inhumane treatment of participants is never justified
Justice	Selection of participants must be fair
	All participant groups must have opportunity to receive benefits of research
	No participant groups may be unfairly selected for harmful research

Consent Form: *a* form provided to the participants at the beginning of a research study to obtain their consent for the study and explain the study's purpose and risks, and the participants' rights as participants

from the study and their right to ask questions about the study). It is the researchers' responsibility to ensure that the participants have the ability to understand the information they are given during the informed consent process. Often, researchers will provide a **consent form** that includes the information listed above about the study that the participants can read and sign before their participation in the study. Special protections must be provided for participants who may not have the ability to fully comprehend the information (e.g., children, persons with certain types of disabilities or illnesses). The amount of protection needed depends on the risk of harm to those individuals and the benefits of their participation.

As part of the informed consent process, research participants must volunteer to participate in the study after they are informed about the study as described above. This creates a dilemma for participants who may feel coerced to participate in the study. For example, the rights of participants who are prisoners must be carefully considered to reduce any implied coercion the participants may feel to participate. This may also be an issue when students are included in a research study where the instructor is a researcher for the study. In this case, the instructor needs to make it clear in the informed consent process that the participants have the right to refuse to participate without it affecting their evaluation in the course. If non-English-speaking participants are included, a translated version of the informed consent information must be provided. If children or other individuals with legal guardianship are included as participants, informed consent must be obtained from the legal guardian, and assent for their participation must be obtained from the participants.

The assent process must explain what the participants' participation will entail and must be explained in a way that the participants can understand what they are being asked to do.

Beneficence

Beneficence refers to the reduction of risk of harm to the participants as compared with the benefit of the study. In other words, a **risk-benefit analysis** should be conducted to ensure that the benefits of a study outweigh the risks to the participants. In addition, the risk of harm to the participants should be reduced as much as possible when designing a study. There are many types of risks that must be considered in psychological research. Physical risk is an obvious factor but is an issue in only a small number of studies. More common are risks to psychological health and reputation and social standing. Some studies may be emotionally upsetting to participants or cause them stress (as the 1963 Milgram study did). If they are asked to consider difficult or traumatic experiences during an interview or in answering a questionnaire, participants can experience psychological harm in a study. In some studies, negative mood induction may occur to compare mood states. Thus, altering participants' mood may also psychologically harm them. Risk to participants' social standing may occur if their **confidentiality** is breached in disseminating a research study. Thus, it is the researcher's responsibility to maintain the participants' confidentiality at all times during the research process.

Risk-Benefit Analysis: weighing the risks against the benefits of a research study to ensure that the benefits outweigh the risks

Confidentiality: it is the researcher's responsibility to protect the participants' identity and right to privacy (including participant responses) during and after the research study

The risks described above are weighed by the researcher against the benefits of the study to society to ensure that the benefits outweigh the risks. The researcher must determine what the likely benefit of the study is, determine the likely risks to the participants—often by reviewing past studies conducted in a similar manner to determine their impact on the participants—and describe the study in terms of its potential benefit to justify whatever risks may befall the participants during the study. Thus, studies with the potential to gain important knowledge may have increased risks as compared with studies with lesser potential benefits. However, inhumane treatment of participants is never justified, and the researcher is responsible for determining what conditions may be too harmful to participants to include in a study.

Justice

Fair selection of participants is covered by the justice principle. Researchers are responsible for ensuring that all participants have a fair chance of receiving potentially beneficial treatments in research (e.g., treatments for specific mental illnesses or conditions), as well as ensuring that potentially harmful conditions are not exclusively administered to a specific group (as it was when treatment was withheld from African American men with syphilis in the Tuskegee study). Special considerations must be provided for groups that may be easier to manipulate (e.g., individuals with illnesses, low-income individuals). For example, suppose

that you are a researcher conducting a study in a geographical area where there are many economically disadvantaged individuals (e.g., a low-income area of a large city, a developing country). As compensation, you plan to offer the participants $50 to participate in your extensive study (e.g., you plan to interview the participants extensively and observe them for a period of time). Compensation of $50 is a reasonable amount to offer U.S. students for this type of participation, so you offer the same amount to the low-income participants in your study. However, $50 will have a different value to low-income individuals than it would to middle-class individuals. Even if the participants did not want to participate in your study, they may feel compelled to participate to earn the $50, which may feed their family for a period of time. Thus, many would consider this type of compensation coercive to the low-income participants. These individuals may feel that they have less choice in participating because they are in greater need of the compensation than higher-income individuals. These issues must be considered by researchers to ensure that the selection of their participants is fair. If a participant group is to be excluded from a research study, there must be a scientific justification for the exclusion.

An Example

Consider a recent study by Mihai et al. (2006). These researchers were interested in testing a possible treatment for alcohol abuse. After long-term alcohol abuse, individuals may experience delirium tremens. These episodes can include hallucinations, disorientation, motor tremors, and severe anxiety. The treatment Mihai et al. were interested in involved videotaping patients with severe alcohol dependence while they were experiencing a delirium tremens episode.

Patients who were hospitalized with delirium tremens were recruited for inclusion in the study. To be eligible, patients had to have severe alcohol dependence for at least 3 years and consume a large quantity of alcohol per day. Consent to videotape the patients was obtained from the patients' families. Patients were videotaped during their delirium tremens episode with a psychiatrist and a medical assistant present. Consent for the study was obtained from the patients themselves at some point after videotaping. After the patients had recovered from their delirium tremens episode (9 to 27 days later), they were randomly assigned to one of two groups. One group of patients (the experimental group—see Chapter 3) was shown the videotapes of their episodes with a psychiatrist explaining the symptoms and their connection to the alcohol abuse. The other group (the control group—see Chapter 3) was given the choice to erase their tapes or to view them after 6 months had passed. None of the patients in the second group had viewed their videotapes before a 6-month follow-up occurred.

Each month for 6 months after the beginning of the study, the patients were tested for relapse rates, number of days per week they drank, and number of drinks they had on each day they drank. Results indicated that the group that viewed their videotapes showed lower relapse rates, fewer drinking days per week, and fewer drinks per drinking day than the group that did not view their videotapes. Mihai et al. (2006) concluded that the videotape treatment was effective in reducing relapse in patients with alcohol dependency.

Based on the ethical guidelines described above (see Tables 5.1 and 5.2), what are the ethical issues involved in this study? What issues should the researchers consider before they conduct this study? One issue you may consider is the coercion of the participants. Initial consent for the study was obtained from the patients' families instead of from the patients themselves. Consent was not obtained from the patients before videotaping took place. However, the researchers may have felt that the patients were not in a position to provide consent during their delirium tremens episode. Instead, they destroyed the videos of any patient who refused to consent after the videotaping took place. Another issue is the participants' confidentiality. The videotapes of the participants' delirium tremens episodes provide a lasting record of a difficult and potentially defaming episode in the participants' lives (see Broyles, Tate, & Happ, 2008, for a more thorough discussion of ethical issues involved in videotaped records collected in research). Where the videotapes are stored, who is allowed access to them, and what happens to them when the study is concluded are all important issues in this study. In fact, the researchers reported destroying the videotapes at the conclusion of the study (if they had not already been destroyed prior to this time at the participant's request) to protect the confidentiality of the participants. A third issue is the harm the study procedures may bring to the participant and whether the risk of harm outweighs the benefit of the study. The participants in the study may have experienced stress, anxiety, or other negative emotions while viewing the videotapes of their delirium tremens episodes. However, the researchers may have argued that the possible benefit of finding an effective treatment for alcohol abuse may outweigh the negative emotions experienced by the participants in the study. This is a difficult question best answered by society at large: When is the discomfort of a few worth knowledge that may aid many? We will return to this question later in the discussion of animal research ethics.

INSTITUTIONAL REVIEW BOARDS

In response to reported abuses of research ethics, the U.S. Department of Health and Human Services (DHHS) currently requires all institutions where research is conducted (universities and colleges, hospitals, companies, etc.) to have an **institutional review board (IRB)** to oversee the research conducted at that site or by researchers affiliated with that institution and ensure that ethical guidelines are adhered to in research with human participants (DHHS, 2005). This policy applies to all institutions that are subject to federal regulations. The IRB reviews all research proposed at the institution to provide a more objective evaluation of the ethics of a study. The IRB is made up of at least five members with backgrounds sufficient to ensure qualified review of the research proposals. If the IRB finds ethical problems with a proposed study, the board can instruct the researcher to revise the study or simply disapprove the study. In other words, before researchers can conduct a study, they must first receive approval from their IRB.

Institutional Review Board (IRB): a committee of knowledgeable individuals who oversee the ethics of research with human participants conducted at an institution

There are three categories of review by IRBs. The category for a study is determined by the amount of risk there is to the participants in the study. Riskier studies require more careful and thorough review. The three categories of IRB review are (1) *exempt*, (2) *expedited*, and (3) *full review.*

Exempt Studies

Exempt studies are those studies that have the smallest amount of risk involved. They are typically studies that involve educational or cognitive testing of participants, where there is no physical or psychological risk and little or no risk of loss of social standing if confidentiality were to be breached. Archival studies where the individuals cannot be identified in the data also fall into the exempt category. Research conducted in educational settings for educational purposes also qualifies for exempt review. Studies that fit into this category are typically given a brief review and then assigned exempt status, which means that they are exempt from further review as long as the procedures of the study do not change in the future.

Expedited Studies

The DHHS identified a category of expedited review for studies that involve minimal risk (DHHS, 2005). Expedited studies need be reviewed by only one member of the IRB, which speeds the process of review. Expedited studies may involve a small amount of physical or psychological risk. For example, studies involving noninvasive medical procedures (measurements of heart rate, galvanic skin response, brain-wave activity, etc.), collection of blood by normal means (finger stick, venipuncture, etc.), video- or audiotaping of observations, and survey or questionnaire studies with minimal emotional impact are typically given expedited review.

Full-Review Studies

Studies with the highest amount of risk receive full review by the IRB, meaning that each member of the IRB will review the research proposal. Studies requiring full review are often studies where a special population has a risk of harm, such as studies with particular risk to children or other individuals who may not be capable of providing informed consent on their own. Studies involving invasive medical procedures or high psychological risk, as with deception that could cause stress or questionnaires about behaviors that could cause emotional distress, typically require full IRB review.

Criteria for IRB Approval

IRB members use a set of criteria to evaluate research proposals and ensure that the research meets the ethical guidelines described in the Belmont Report (U.S. DHHS, 2005). The criteria are as follows:

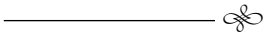
1. The researcher will minimize unnecessary risk to the participants.
2. The risk in the study is justified by the potential benefits of the study.

3. The selection of the participants is fair and appropriate for the study.
4. An informed consent process is included in the study and can be documented by the researchers.
5. The researcher will monitor collection of the data to ensure the safety of the participants during the course of the study.
6. The privacy and confidentiality of the participants will be protected by the researcher.
7. If a special participant group is included in the study, procedures must be included to protect the rights of these participants.

A research proposal sent to the IRB for review must address each of these elements. Individual IRBs may have their own proposal form that researchers must complete to allow all elements of the criteria to be addressed clearly in the proposal.

Deception and Debriefing

In addition to the criteria listed above, the APA Ethics Code (APA, 2002) requires sufficient justification for studies involving deception and a debriefing process in all studies. If a study makes use of deception, the researcher must justify why the deception is necessary and why alternative procedures that do not use deception cannot be employed. The deception cannot be used if it will cause physical or severe psychological harm. Note, however, that there is a difference between deception and not fully disclosing the study's purpose. In many cases, researchers do not fully disclose the purpose of the study to reduce **demand characteristics**, where the participants may alter their behavior based on their perception of the study's purpose or hypothesis (see Chapter 4 for more discussion of demand characteristics). For example, in research testing a type of memory called *indirect memory*, researchers may not call the test a memory test, because they do not want the participants to intentionally retrieve studied items during this test. In other words, indirect memory tests involve a form of memory that is used unintentionally. In studies of indirect memory (Roedger & McDermott, 1993), participants are given a study session and then a task that they are to complete as quickly as possible (e.g., identify a word flashed very quickly on the computer screen) with studied items included in the task. No mention is made of the study episode when the indirect memory test is given, and participants are often told that it is an unrelated task. This is done to discourage participants from using direct memory in the test (i.e., intentionally retrieving studied items). Indirect memory can be measured in these tests by the faster speed with which participants identify words they have studied versus items not studied. This is a procedure commonly used in research I have conducted on indirect memory (e.g., McBride, Coane, & Raulerson, 2006). Describing the indirect memory test in general or alternative terms that reduce demand characteristics



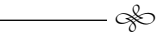
Demand Characteristics: a source of bias that can occur in a study due to participants' changing their behavior based on their perception of the study and its purpose

is not the same as deceiving the participants, and the IRB will view these situations differently when reviewing a study for approval.

Most studies involve a debriefing process to fully explain the purpose of the study to the participants and the knowledge that the study will contribute, including expected results of the study. However, if the study uses deception, the debriefing process must thoroughly explain the nature of the study and the deception used, including the purpose of the deception in the study. The goal of the debriefing process is to allow the participant to leave the study with a positive attitude toward the research. Thus, if the participant has been stressed during the study, part of the debriefing process should attempt to reduce this stress. If the participant's mood has been negatively altered by the study, an attempt should be made during the debriefing process to restore the participant's mood state before the study began. The participants are also provided with an opportunity to gain new knowledge about their behavior in the debriefing through the explanation of the study provided by the researcher and through questions they may wish to ask about the study.

An Example

Consider the ethics of the following social psychology study: To investigate the effects of personal-space invasions on physiological behaviors, Middlemist, Knowles, and Matter (1976) arranged an interesting field experiment of urination behaviors in college males. They conducted their experiment in a men's restroom at a university, such that men using the restroom were selected as participants, and a **field experiment** (see Chapter 4 for a discussion of field experiments) was conducted. Three urinals in the restroom were arranged so that men entering the restroom were forced to use (1) the end urinal with a confederate next to them (the urinal at the other end had a "being cleaned" sign and a bucket and sponge placed on it), (2) the end urinal with a confederate two urinals away (the middle urinal had the sign), or (c) the end urinal with no confederate nearby (both of the other urinals had signs). An experimenter in a stall measured the time it took for the participant to begin urination and the length of time he urinated. Participants were never informed that they were participating in a research study. The researchers found that the participants in the condition with the confederate at the urinal next to them took longer to begin urination and urinated for a shorter duration than the other two conditions, indicating that invasion of personal space affects physiological behaviors.



Field Experiment: an experiment conducted in the participants' natural environment

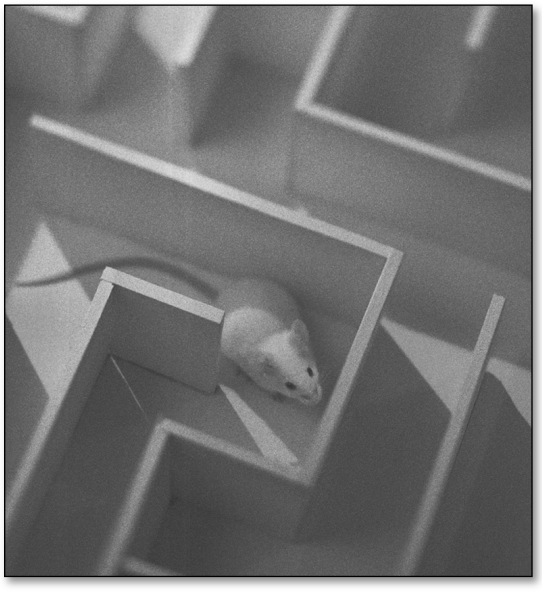
Imagine that you are a member of the IRB reviewing this study before it is conducted. What issues might you have with the research? What are the risks to the participants in this study? Do you feel that the risk to the participants outweighed the benefit of the knowledge gained? Why or why not? Can you think of any other way that this study could be designed to reduce the risks to the participants? One issue that you may have noticed is that no informed consent process or debriefing took place because the participants were never informed that they were involved in a research study. The informed consent process would likely have affected the participants' behavior, but a debriefing process may have

alleviated any psychological discomfort caused by the presence of the confederate, especially in the condition with a confederate at the next urinal. However, the researchers may have argued that the process of debriefing the participants may have embarrassed them, thus causing harm. These are the sorts of issues that are considered by the members of an IRB as they review research.

CURRENT ETHICAL GUIDELINES FOR NONHUMAN ANIMAL SUBJECTS

Psychological research sometimes involves animal subjects (see Figure 5.4). Animals are often used as subjects when study procedures are considered too invasive or difficult to conduct with human participants. Important knowledge regarding basic human behaviors such as hunger, thirst, sensory processes, and learning has been gained through animal research in psychology (APA, n.d.). However, research with animal subjects represents a minority of the studies conducted in the field of psychology. Only about 7% to 8% of all psychological research involves animal subjects, mostly with bird and rodent subjects (APA, n.d.). Monkeys and other primates are rarely used in psychological research—only about 5% of animal studies in psychology involve primates (APA, n.d.). Yet just as there are guidelines for research with human participants, there are ethical guidelines that researchers must adhere to in research with animal subjects as well. The APA Ethics Code (APA, 2002) defines specific criteria that must be met for animal studies regarding justification of the study, personnel involved in the study, care and housing of the animals in the study, acquisition of the animals for the study, and procedures used in the study.

Figure 5.4 Rats Are a Common Species Used in Psychological Research With Animals



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Justification

According to the APA Ethics Code (APA, 2002), justification of research with animal subjects must include a clear scientific purpose for the study. This ensures that frivolous studies with animals will not be conducted. Any study with animal subjects must be shown to contribute important knowledge of behavior (for humans or other animals). The researcher must also justify the use of the specific species chosen for the study and why

that species is best suited to the study. In other words, how will a study with that species contribute knowledge about behavior that can be generalized beyond that species? Researchers must consider alternative species and justify why animals are needed to the study. Just as in research with human participants, a risk-benefit analysis must be conducted to justify the research. The greater the risk of harm to the subjects, the greater potential benefit there must be from the study.

Personnel

The APA Ethics Code (APA, 2002) indicates that only trained and experienced personnel may be involved in research with animal subjects. Any researcher involved with a study involving animals must be trained in the procedures to be used in the study to ensure that quality research is conducted and that effects on the animals can be properly anticipated. Researchers must also have knowledge about the specific species being studied to properly care for the animals during the course of the study.

Care and Housing of the Animals

Researchers and the institutions where the research is conducted are responsible for the proper care of the animal subjects before, during, and after a research study has been conducted. The Animal Welfare Act (U.S. Department of Agriculture [USDA], 2007) provides specific standards for the acquisition, housing, and care of animals in the United States. Other countries also have specific standards for the care of animals that are used in research. The APA Ethics Code (2002) specifically states that researchers in psychology must meet or exceed the USDA guidelines for care of animals. Animals are to be provided with humane care and housing conditions that keep the animals in good health. Enrichment of the animals' environment is also encouraged.

Acquisition of the Animals

The APA Ethics Code (2002) describes criteria in a separate section of the guidelines to outline how animals used in psychological research may be ethically obtained. Animals not bred by the researcher's institution must be obtained in a manner that follows USDA regulations and local ordinances. Researchers must ensure that proper care of the animals is maintained during transport to the facility. Animals taken from the wild must be obtained humanely and lawfully. Finally, rules regarding the use of endangered or threatened species must be followed.

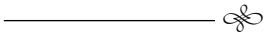
Procedures Used in the Study

Researchers must treat animals humanely during the study procedures. If the animals will experience pain, their discomfort should be minimized as much as possible. For example, animals must be given anesthesia during surgical procedures, and these procedures may be conducted only by trained researchers. As described above, greater risk of harm to the animals requires greater justification of the study. Studies that harm animal subjects must have

a greater potential to contribute important knowledge. Animals must be monitored during the study to look for unanticipated negative effects. For example, if food is withheld from the animal for a period of time during the study, the researchers must stop the study if the animal's body weight falls below a set criterion to ensure the health of the animal. Finally, animals cannot be released into the wild at the completion of the study, as it may be unsafe for the animals and the ecosystem into which they are released. Researchers conducting field studies in the wild must take care not to disturb the ecosystem in which they are observing.

Institutional Animal Care and Use Committee

The IRB equivalent for research with nonhuman animal subjects is the **Institutional Animal Care and Use Committee (IACUC)**. Just as IRBs oversee research conducted with human participants, IACUCs oversee research conducted with nonhuman animal subjects at an institution. Thus, IACUC members must have knowledge of the APA Ethics Code regarding animal subjects, federal guidelines regarding the care and treatment of animals, and research procedures used in past studies with animals. Research proposals must be reviewed and approved by the IACUC before research with animals may commence.



Institutional Animal Care and Use Committee (IACUC): committee of knowledgeable individuals that oversees the ethics of research with nonhuman animal subjects at an institution

For proposals of animal research, justification of the research is a particularly important issue. As discussed above, the risk-benefit analysis of research with human participants is important in justifying the need for the study and any risks the participants may experience as a result of the study. The benefit of the knowledge gained by the study must outweigh the risks to the participants. However, in the case of animal research this can be more difficult to determine. Human participants can refuse consent or choose to withdraw from a study if they wish. They can verbally indicate to the researcher if they are experiencing high levels of stress or pain during the study to alert the researcher to stop the study (as occurred in the Zimbardo, 1973, prison study). Animal subjects do not have the choice to participate in a study and cannot terminate their participation during the course of a study. Animals cannot verbalize their discomfort level to the researcher, and it may be unclear how much discomfort an animal is experiencing during a study. Finally, some studies require that the animal be sacrificed to more closely examine brain tissue or other physiological aspects of the animal. Thus, justification of a study with animal subjects is an extremely important part of the approval process. The issue of when discomfort to a few is worth a great benefit to the many, especially when the few have no choice but to endure the discomfort, is one that is debated by both psychologists and society at large.

An Example

As an example of ethical considerations for animals in psychological studies, consider a study reported by Nuseir, Heidenreich, and Proudfit (1999). Nuseir et al. were interested in the effects of an injection of a drug that reduces pain into a specific area of the brain to

determine if that area of the brain is involved in pain perception. Rats were used as subjects in the experiment. Each rat was immobilized, injected with the drug, and then subjected to a heat source applied to its tail. A control group received a saline solution instead of the drug as a comparison group. The time it took for the rat to flick its tail (indicating it felt the heat on its tail) was measured for the rats. If the rat did not flick its tail within 10 seconds, the heat source was terminated to prevent burning of the rat's tail. At the end of the experiment, the rats were anaesthetized and injected with a lethal drug before brain removal. Tissue samples of the rats' brains were then analyzed to map the exact site of drug injection. Results indicated that although the tail flick response time was slower for the drug group than the saline group initially, over time the responses were quicker, indicating that the drug had worn off. Thus, the area of the brain the researchers were interested in was involved in pain perception in the rats.

What should the researchers consider in this study to ensure that their study meet ethical guidelines for research with animals? Did you notice any aspects of the study in the description above that shows the researchers included methodological details to make their study more ethical? You may have noticed, for example, that the researchers terminated the heat source after 10 seconds when the rats did not flick their tail to prevent harming them. They also anaesthetized the rats before removing their brains so that they would not feel any pain. In fact, the published report of the study contains a section titled "Animal Care and Use" that indicates that the study adhered to ethical guidelines for animal research and that efforts were made to reduce the rats' suffering (such as the procedures described above). What would need to change in the above study in order to include human participants? Would the same knowledge be gained if human participants were used instead? Why not? Should there be similar ethical guidelines for human and animal subjects? Why or why not? These are ethical issues that psychologists continue to ask themselves as research is designed to answer important societal questions.

ETHICS IN REPORTING RESEARCH

In addition to the treatment of participants/subjects in a study, the APA Ethics Code (2002) contains sections outlining ethical guidelines for reporting research in an ethical manner. Two primary issues are addressed in these sections: (1) errors in the data that are reported (either intended or unintended) and (2) **plagiarism**. These issues are just as important to the scientific process as the treatment of participants/subjects.

Plagiarism: claiming another's work or ideas as one's own

As you have seen, the scientific method relies on reports of previous studies for hypothesis development, designing valid methods, and anticipating negative consequences of study procedures on participants. Thus, the reports of psychological research must be accurate, or future research will decrease in validity, an effect that can ripple through the literature for many years. Researchers are ethically bound to report data accurately. If an error is discovered in their report, the researcher must correct the error or make it known if correction is not possible.

Credit must also be given for information contained in the reports of research. Thus, researchers must properly cite the source of information they give in research reports. This includes both word-for-word reports from others (your university likely has a student code of conduct that forbids and punishes this type of plagiarism) and summarized representation of another's ideas. You have seen such citations throughout this text that provide sources for the information it contains. Research reports (even those that may not be published) must always cite sources for theories, methods, data, and other topics an author describes that came from another source.

Violation of either of the above ethical guidelines (data errors or plagiarism) can seriously damage one's career. There have been several famous examples of such violations that damaged the standing of researchers in the scientific community. One such recent example was reported in 2006, when Woo Suk Hwang, a well-known cloning researcher in South Korea, reported false research on the cloning of human stem cells (Bhattacharya, 2006). Hwang reported being the first scientist to clone human stem cells, an important accomplishment given the utility of stem cells in the treatment of medical problems and the difficulty researchers face in obtaining stem cells. Hwang reported his research in the prestigious journal *Science* (Hwang, Rho, et al., 2005; Hwang, Ryu, et al., 2004). However, Hwang and his research team were actually not successful in cloning stem cells as they reported, a discovery made by a probe of his work. He is now facing criminal charges in South Korea and has irreparably damaged his scientific career. From this example, you can see that false data reports can have very serious consequences. You are probably more likely, however, to be concerned about the second issue discussed here: plagiarism. Plagiarism can be intentional or unintentional; however, both are serious ethical violations, as they both involve taking credit for someone's work or ideas. Students should exercise caution when writing about psychological research in their own reports to ensure that their own words are used and that information is properly cited. If you have any doubts about your own writing, it is always a good idea to check with your instructor to make sure your writing does not contain plagiarism.

CHAPTER SUMMARY

Reconsider the questions from the beginning of the chapter:

- Why do we need ethical guidelines for research? As described in this chapter, ethical guidelines are needed to define the appropriate treatment of subjects in psychological research.
- How were ethical guidelines for psychological research developed? Current ethical guidelines were derived over the years as the original Nuremberg Code was revised and adopted by the American Psychological Association (APA) and the U.S. Government in the Belmont Report.
- Were the Milgram (1963) and Zimbardo (1974) studies ethical? Why or why not? Due to the level of deception and stress caused by the situation participants experienced in the Milgram study and the level of stress experienced by the "prisoners" in the Zimbardo study, many researchers believe that these studies were not ethical.

- What are the current ethical guidelines for human participants? Current ethical guidelines for psychological research are summarized in Table 5.1.
- What is an institutional review board (IRB), and what purpose does it serve? The IRB oversees research conducted at each institution. In cases where the researchers may not be the most objective judge of the ethics of their study, the IRB provides a more objective review of the ethics of psychological research.
- What are the current ethical guidelines for animal subjects? Current ethical guidelines for animal subjects are also summarized in Table 5.1.
- How do ethics influence the way we report research? Ethical guidelines for reporting research necessitate accurate reports of results and proper citation of sources.

THINKING ABOUT RESEARCH

A summary of a research study in psychology is given below. As you read the summary, think about the following questions:

1. What are some ethical issues for this study regarding informed consent?
2. What steps do you think the researchers of this study would have taken to obtain informed consent from the research participant in order to conduct an ethical study?
3. What steps should the researchers take to protect the confidentiality of the participant in this study?
4. Do you think it would be ethically appropriate for the researchers in this study to administer the reinforcements themselves? Why or why not?
5. How can the researchers reduce possible harm to the participants in this study?
6. If you were an IRB member reviewing this study, what information would you ask the researchers to provide to allow you to determine the risk-benefit analysis for this study?

Study Reference

Baker, J. C., Hanley, G. P., & Mathews, R. M. (2006). Staff-administered functional analysis and treatment of aggression by an elder with dementia. *Journal of Applied Behavior Analysis, 39,* 469–474.

Purpose of the Study. A behavior analysis study was conducted to examine the use of noncontingent reinforcement (i.e., reinforcement that does not depend on performance of a specific behavior) as a means of reducing aggressive behavior in elderly persons with dementia to prevent injury to the elderly persons or to the care staff. The noncontingent reinforcement in this study involved allowing the participant to have a break from the prompting of a hygiene routine that the participant disliked as reinforcement for ending aggressive behavior during the routine. In one condition of the reinforcement phase of the study, the reinforcement was not contingent on the participant's behavior, because the breaks occurred on a timed schedule in this condition, regardless of when aggressive behavior occurred. This condition was compared with a second condition that involved reinforcement contingent on the participant's behavior (i.e., negative reinforcement): A break was provided whenever the participant was aggressive during the hygiene routine after aggressive behavior had ceased.

Method of the Study. A 96-year-old woman with dementia due to Alzheimer's disease was the only participant in the study. The participant had a history of severe aggressive behavior toward care staff at her residence. The participant was observed before or after mealtimes while she was not being restrained. Observation sessions occurred in the participant's bathroom and lasted 3 to 5 minutes each. The dependent variable was aggressive hitting operationally defined as "forceful contact with a closed or open fist with a staff member" (p. 470). Hitting behaviors were measured within each 10-s interval of each of the observation sessions. Interrater reliability ranged from 96% to 100%. The independent variable was the condition under which the aggressive behavior was measured: during the noncontingent reinforcement treatment or in a contingent reinforcement condition. In the contingent reinforcement condition, the care staff member involved in the study allowed a 10-s break from the bathroom routine each time aggressive hitting occurred and had ceased. In the noncontingent reinforcement condition, a 10-s break was given from the bathroom routine every 20 s regardless of the participant's behavior. The participant completed several sessions in the noncontingent reinforcement condition first. Once aggressive behavior was reduced to low levels, she completed several sessions in the contingent reinforcement condition as a comparison. Then, several sessions of the noncontingent reinforcement condition were conducted again.

Results of the Study. Low levels of hitting were observed in the first set of noncontingent reinforcement condition sessions (mean percentage of intervals where hitting occurred was 9%). Levels of hitting were shown to decline across sessions in this condition. Hitting increased when the comparison contingent reinforcement condition was introduced ($M = 46\%$) but decreased again when the noncontingent reinforcement condition was reintroduced ($M = 9\%$) with hitting reduced to 0 for the last few sessions of the study.

Conclusions of the Study. This study showed that noncontingent reinforcement can be used to reduce aggressive behavior in elderly persons with dementia, thus reducing the possibility of harm to the elderly persons and their care staff.

COMMON PITFALLS AND HOW TO AVOID THEM

Problem: Confusing deception with full information—there can be confusion about what qualifies as deception in psychological research.

Solution: Holding back some information about the study does not usually qualify as deception. In many cases, researchers do not fully inform participants about the purpose of the study to prevent demand characteristics. Deception typically involves a more direct manipulation of the participants' understanding of the study.

Problem: Failure to identify risks—researchers often fail to see the possible risks to the participants in their own study.

Solution: Assume that there are always risks to the participants in a study. Sometimes these risks are minimal, such as boredom or fatigue. You should also think carefully about the different elements of the ethical guidelines (confidentiality, deception, informed consent, etc.) to attempt to identify situations where these elements could cause possible harm to the participants.

Problem: Inadequate debriefing—sometimes students designing a research study do not properly debrief participants at the end of a study.

Solution: Be sure to include a thorough debriefing for your study. It is your responsibility to ensure that participants do not have a negative experience in your study, and the debriefing is your opportunity to ensure that participants leave with as positive a view of the study as possible. Be sure to explain why the study was conducted to enrich the participants' understanding of psychological research. Also include information about where they can have further questions answered or learn about the final results if they wish.

TEST YOURSELF

1. Suppose you wanted to replicate the Milgram (1963) study to adhere to ethical guidelines currently in place for psychological research. What changes would you need to make to the procedure (described in this chapter) in order to conduct the study ethically?
2. Given what is described in this chapter regarding the informed consent process, make a list of information about your modified Milgram (1963) study (see Question 1) that should be provided on a consent form for participants.
3. Why is the debriefing process especially important in studies that involve deception?
4. Write a debriefing statement that you think might be appropriate for the Middlemast et al. (1976) study on male urination described in the chapter.
5. Which of the following is part of the ethical guidelines for research with human participants?
   (a) No identifying information may be collected from the participants during the study.
   (b) Participants can withdraw from the study at any point before the study begins, but not after that point.
   (c) Participants must be informed about the study's procedures before they are asked to give consent for their participation.
   (d) All of the above.
6. Which of the following is part of the ethical guidelines for research with animal subjects?
   (a) Only trained personnel may be involved with the research.
   (b) Discomfort of the animals must be minimized as much as possible.
   (c) Use of animals and the particular species of animal used must be strongly justified for the study.
   (d) All of the above.
7. The _____ provides a set of ethical guidelines provided by the U.S. Government that must be adhered to by all researchers conducting studies with human participants.
   (a) Nuremberg Code
   (b) APA Ethical Code
   (c) Belmont Report
   (d) IACUC

8. At the conclusion of a study with animal subjects, the researcher
   (a) must provide for the care of the animals for the rest of their lives
   (b) may release the animals into the wild to live the rest of their lives
   (c) must use those animals for additional research studies before any new animals can be obtained
   (d) (a) and (c) only

Answers: 1. As mentioned in the chapter, Burger (2009) conducted a modified replication of this study in conjunction with ABC News' *Primetime* show. To make the study ethical (and have it approved by his IRB), he made the following changes: (a) shock labels only went to 150 volts, at which point the confederate first objected verbally to the shocks, (b) participants were prescreened to rule out individuals who might be more greatly affected by the stressful conditions of the study, (c) right to withdraw from the study was emphasized (once verbally and twice in writing) to make this right more salient to participants, and (d) the experimenter was a clinical psychologist who immediately stopped the study at the first sign of excessive stress from the participant. 2. The consent form should include the following: a statement that the participant is being asked to volunteer for research, that his or her participation is voluntary and he or she has the right to withdraw at any time without penalty, the purpose and the procedures of the study, the risks (including possible stress) and benefits of the study, and information about whom the participants can contact if they have questions or concerns about the study. 3. The debriefing process is especially important for research that involves deception because the goal is that participants leave a study with as positive an impression of the research as possible. In addition, participants have the right to a thorough explanation of the study. Explaining why the deception was necessary is important in achieving these goals. 4. Answers will vary, but debriefing for this study should explain that the purpose of the study was to investigate natural physiological responses that occur to most individuals due to an invasion of personal space. It should also include information that the participant's data will be kept completely confidential, that the participant has the right to withdraw from the study at any time (especially if an informed consent process did not take place before the study), and information about whom the participants may contact if they have further questions or are feeling uncomfortable about participating in the study. 5. c, 6. d, 7. c, 8. a.