

Chapter 2. Ethical Principles of Research

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Historical Examples of Research With Ethical Concerns

Tuskegee Syphilis Study

On the afternoon of May 16, 1997, President Clinton made a formal apology to Mr. Shaw, Mr. Pollard, Mr. Howard, Mr. Simmons, Mr. Moss, Mr. Doner, Mr. Hendon, and Mr. Key. These eight African American men were the remaining survivors of a medical research study sponsored by the United States government. In the words of President Clinton, the rights of these citizens and 391 others were “neglected, ignored and betrayed.”

Syphilis is a venereal disease caused by the invasion of the body by a spirochete, *Treponema pallidum*. In its early stages, the infection is usually benign. A painless lesion develops at the site of the infection with secondary inflammatory lesions erupting elsewhere as the tissues react to the presence of the spirochetes. If untreated, an early syphilitic infection characteristically undergoes a secondary stage, during which lesions may develop in any organ or tissue throughout the body, although it shows a preference for the skin. Then, in many individuals, the disease goes underground, so to speak. During this latent phase, the spirochete may establish a foothold in an organ, bone, muscle, or any other part of the anatomy. It may be years later before the blight it has inflicted upon the individual becomes evident. If the spirochete settles in the heart, it leads to severe and debilitating cardiovascular disorders. In the spinal cord, it may destroy the ascending sensory neurons. An individual so affected literally loses touch with his or her own legs—all muscle sense is lost—and walking becomes possible only by watching the feet. When the cerebral cortex is attacked, the victim suffers impaired memory, fatigues easily, and undergoes profound and pervasive personality changes. Moreover, many symptoms mimic those of mental disorders.

In 1932, a group of researchers undertook a long-term evaluation of the effects of untreated syphilis. Known as the Tuskegee study on syphilis, it was sponsored by the Venereal Disease Division of the U.S. Public Health Service. The study involved 399 Blacks from Macon County, Alabama. All were 25 years of age or older and were selected because they had the venereal disease of syphilis and had not been treated. There were also two control groups. One consisted of 201 Blacks without syphilis and the other of 275 Blacks previously treated. At the time the study was begun, penicillin was unknown, but less effective treatment compounds were available. The interest in the study was in the natural progression of the disease if left untreated. Earlier observations suggested that some individuals left untreated apparently recovered from the disease spontaneously. Therefore, some physicians felt it might be better not to use drugs known to be hazardous. This was apparently the justification for the study. However, with the advent of penicillin in the early 1940s, an effective cure for syphilis had been found. This cure was withheld from the participants in order to complete the research findings. The public became aware of the study in a story printed by the *New York Times* on July 26, 1972. People were outraged. Four months later, the study was terminated.

Times change, and views are relative. Today scientists do not take pride in this study or those similar to it. They represent research inquiry gone awry. No matter how honorable the underlying motives, the plain truth is that the investigators forgot or ignored their obligation to their participants. Before describing some consequences that followed disclosure of the sort above, we want to describe two additional behavioral studies that have generated considerable controversy.

The Milgram and Zimbardo Studies

Social and behavioral scientists have also had their share of controversy concerning ethical issues in research. Two controversial ones, among others, are Stanley Milgram's studies regarding obedience to authority, and Philip Zimbardo's simulated prison experiment. These studies reveal that difficult to resolve ethical issues often emerge in research. Although important information may have been provided by these studies, the issues raised by them seem to involve a cost/benefit analysis. The studies also reveal that attitudes related to ethical concerns sometimes change. Both Milgram and Zimbardo are highly respected, ethical scientists, yet many individuals objected to the methods of their studies when they were published. We would guess that it is unlikely that either of these studies would be undertaken with today's ethical standards. In this context, it is interesting to note that shortly after his initial study was published (1963), Stanley Milgram received the American Association for the Advancement of Science award for social psychology. We will give a brief description of each study and some of the ethical issues raised by them.

Milgram Obedience Study. Milgram's study dealt with obedience to authority, and it was his belief that it would contribute to avoiding another holocaust similar to that which took place in Nazi Germany (Milgram, 1965). However, participants were not told the true purpose of the experiment until it was over. In essence, Milgram told volunteers that they were participating in a learning-memory task that required them (the teacher) to shock another individual (the learner) when the learner made an error. (The learner, a collaborator of the researcher, was out of view in another room.) Unknown to the participants was that no shock was ever presented, even though cries of pain were heard. Thirty switches identifying the level of supposed shock intensity were clearly marked and ranged from 15 to 450 volts (labels ranged from "Slight Shock" to "Danger: Severe Shock"). Participants were instructed to increase the shock intensity one step for each error made. The learner, according to the plan, was to provide periodic wrong answers and, as shock supposedly increased, was to demand that the experiment be stopped, cry out, or moan. The situation was convincing to participants; as shock intensity increased and cries from the adjoining room became louder, some participants wanted to quit the experiment. At this point the researcher simply instructed the participants that they were required to go on. The real purpose of the experiment was to determine how high a shock intensity participants would "deliver" to others on orders from the researcher.

Many participants continued in the experiment and “delivered” the highest shock intensity; others defied the experimenter’s order to continue. For some participants the experience was a very intense, emotional one, filled with conflict. It should be noted that Milgram took precautions to debrief each participant and to follow up on their well-being after the experiment was concluded. We will discuss the ethical issues below.

Zimbardo Prison Study. Philip Zimbardo was interested in the psychological effects of imprisonment (Zimbardo, 1969). He conducted his research with college students in a setting designed to achieve psychological effects similar to those found in prisons. Newspaper ads were placed asking students to volunteer for a two-week study of prison life at \$15 a day. Only emotionally stable volunteers were chosen, and they were randomly assigned to a role of guard or prisoner. The basement of the Stanford University psychology building served as the prison where three small rooms were converted to prison cells with three beds and barred doors. The experiment began without warning when the students were picked up in a surprise mass arrest one Sunday by real police with sirens screeching. They were charged with a felony, searched, handcuffed, given their constitutional rights, and then taken to the police station for booking and fingerprinting. After this they were blindfolded and taken to the Stanford basement prison, where they were stripped, searched again, and given uniforms, bedding, and so on. For purposes of group identity, prisoners wore a white smock, a nylon stocking cap, and a chain around one ankle. Guards wore khaki uniforms, sunglasses with silver reflectors, and carried clubs, whistles, and handcuffs. The reaction to this simulated environment by both prisoners and guards was very strong. In a short time a distorted relationship developed, with the prisoners becoming passive and the guards aggressive, abusive, and authoritarian. The experiment had to be stopped much earlier than planned because of the intensity of the behavior and the consequences that followed. According to Zimbardo, the first of the nine prisoners had to be released by the second day because of crying, fits of rage, and severe depression. Three others developed similar symptoms on the third and fourth days, and a fifth prisoner had to be released because of a rash over his entire body.

Were ethical issues involved in the Milgram and Zimbardo studies? Many researchers feel that there were. Some deceit was involved in both studies, and participants were not fully informed. There was also the possibility of psychological or physical harm to the participants. Behavioral scientists have expressed concern about the possible negative psychological effects that may have resulted as participants learned that they were capable of inhumane behavior toward others. However, we might note in passing that there is no evidence of negative aftereffects in either study and also that a sizable number of Milgram’s participants believed that they had benefited from their participation.

Largely as a result of disclosures of the preceding sort, federal and state governments as well as a number of scientific and professional societies have taken a long, hard look at the ethics of research.

Included in their scrutiny are such issues as the professional behavior of the researcher, the treatment of human participants, research with children, and research using nonhuman participants. We shall be examining each of these issues in this chapter and attempt to summarize policies that have evolved to date. Before doing so, we want to note that many ethical questions arise in the course of doing research for which answers are not readily available. In this chapter we deliberately stress the rights of participants, but keep in mind that researchers are obligated to push forward the frontiers of science and to provide new knowledge for the citizens of the world. Therefore, while we justifiably show increasing concern for human and animal welfare, the ethical questions are more a risk (cost)/benefit dilemma; that is, the risk (cost) of research in terms of side effects, money, time, inconvenience, and the like, versus the benefits to humankind in the long run. It is appropriate to note at this point that the quality of research in itself can be an ethical issue. Poorly designed and poorly conducted studies do not permit unambiguous conclusions to be drawn. Thus, such studies are also unlikely to provide any benefits. If benefits cannot be derived from the research, then only risk remains in the risk/benefit ratio. It would surely be unethical to ask participants to participate in a study where risk existed without possible benefits.

Research With Human Participants: Ethical Guidelines

Ethical Principles and Code of Conduct

Studies such as those described above have sensitized researchers and their professional organizations to the need for guidelines regarding the ethics of research with human participants. Although these studies raised clear ethical issues, more subtle concerns are raised every day in behavioral research. Issues such as the use of deception, the induction of anxiety, or minor manipulations that may affect the participant's self-esteem can all create ethical concerns. The American Psychological Association (APA) has been a leader in the establishment of such guidelines. Today, no investigator should undertake research with human participants without intimate familiarity with these guidelines. It should be noted that writing guidelines is a difficult task. They must be written in a manner that places limits or restrictions on certain research activities without stifling the activities. Moreover, they are not fixed and immutable. In fact, they continue to change and evolve, reflecting the current views and experiences of laypersons and professional organizations regarding the freedom to obtain knowledge and the rights of participants.

For psychologists, guidelines can be found in the APA publication *Ethical Principles of Psychologists and Code of Conduct 2002*. These guidelines are readily available at the APA Web site on the Internet (<http://www.apa.org/ethics/code/index.aspx>) and consist of a preamble, five general principles, and ten ethical standards. The preamble states:

Psychologists are committed to increasing scientific and professional knowledge of behavior and people's understanding of themselves and others and to the use of such knowledge to improve the condition of individuals, organizations, and society. Psychologists respect and protect civil and human rights and the central importance of freedom of inquiry and expression in research, teaching, and publication. They strive to help the public in developing informed judgments and choices concerning human behavior. In doing so, they perform many roles, such as researcher, educator, diagnostician, therapist, supervisor, consultant, administrator, social interventionist, and expert witness. This Ethics Code provides a common set of principles and standards upon which psychologists build their professional and scientific work.

This Ethics Code is intended to provide specific standards to cover most situations encountered by psychologists. It has as its goals the welfare and protection of the individuals and groups with whom psychologists work and the education of members, students, and the public regarding ethical standards of the discipline.

The development of a dynamic set of ethical standards for psychologists' work-related conduct requires a personal commitment and lifelong effort to act ethically; to encourage ethical behavior by students, supervisees, employees, and colleagues; and to consult with others concerning ethical problems.

As you can see, the preamble represents the broad themes of ethical conduct. It is important to notice, and will become increasingly clear, that ethical conduct is not limited to the interactions with research participants in the laboratory. Ethical conduct applies to all professional activity of the psychologist. A summary of the five principles makes this clear:

Principle A: Beneficence and Nonmaleficence. Psychologists seek to contribute to the welfare of those with whom they interact professionally, including patients, clients, students, supervisees, human research participants, and animal research participants.

Principle B: Fidelity and Responsibility. Psychologists are professionals who uphold standards of conduct, clarify their professional roles and obligations, accept responsibility for their behavior, adapt their methods to the needs of different populations, and concern themselves with the ethical conduct of their colleagues. Psychologists are aware of their responsibility to make public their knowledge of psychology in order to contribute to human welfare.

Principle C: Integrity. Psychologists are honest, fair, and respectful of others. Any use of deception involves the careful analysis of the potential benefits versus the potential harm.

Principle D: Justice. Psychologists understand that everyone should have access to the benefits of psychological practice and research. Psychologists recognize that there are limits to their competence and expertise. They should not go beyond these limits in their teaching, service, or research.

Principle E: Respect for People's Rights and Dignity. Psychologists respect the fundamental rights, dignity, and worth of all people. They respect privacy, confidentiality, self-determination, and are aware of cultural, individual, and role differences.

The specific guidelines are contained in the ten ethical standards. Together, these standards discuss guidelines in 90 specific areas of professional activity. The categories represented by the ten standards are:

1. Resolving Ethical Issues
2. Competence
3. Human Relations

4. Privacy and Confidentiality
5. Advertising and Other Public Statements
6. Record Keeping and Fees
7. Education and Training
8. Research and Publication
9. Assessment
10. Therapy

Sections under Standard 8 are most relevant to those beginning to conduct behavioral research.

Although these guidelines attempt to safeguard the rights of research participants, the participants must still often rely on the judgments of the researcher. Researchers must remain vigilant and concerned about human rights, the invasion of privacy, and the possibility of physiological and psychological damage.

There is one further legal matter of which you should be aware. Unlike physicians, lawyers, and members of the clergy, researchers are not protected by laws concerning privileged communications. Though highly unlikely, it is possible that participants' admitting to crimes (stealing, using or selling controlled substances) on questionnaires could result in arrest and prosecution. Consequently, it would be a risk for participants to admit to a researcher that they have participated in a crime. When questionnaires are used and such information is required to achieve the goals of the study, it would be wise to avoid the problem completely by omitting all forms of identification from the questionnaire. When mailed questionnaires are used, you can keep track of which participants have participated and still maintain their anonymity by having each one mail in a separate card indicating that the questionnaire has been completed.

Informed Consent: The Right to Know

The ethical principles make it clear that **informed consent** is fundamental (sections 3.10 and 8.02). Participants must be informed of the nature of the experiment, the degree of detail depending upon potentially harmful effects. Participants should never be informed that there are no risks. At a minimum, there are no *anticipated* risks. When the potential for harmful effects is high (such as in drug research when undesirable side effects may occur), the participant is entitled to a particularly detailed assessment of the risks.

Sample Consent Form for a Student Research Project

**University of Central Arkansas
Informed Consent Agreement
Research: Eye-tracking in Infants**

You are being asked to participate in a research study. You are eligible to participate as long as you are at least 18 years of age. You were recruited because your psychology instructor permitted us to inform you of this opportunity. Before you give your consent to volunteer, it is important that you read the following information and ask all questions you need answered to be sure you understand what you will be asked to do.

Investigators

The investigators in this study are students in PSYC 3340 – Research Methods Lab. The investigators are affiliated with the Psychology Department at the University of Central Arkansas. The faculty advisor is Dr. Bill Lammers. He can be reached by phone at (501) 450-XXXX or in Mashburn 257.

Purpose of the Research

This research study is designed to investigate how infants track objects with their eyes. The study will also provide experience to students in the Research Methods Laboratory course.

Procedures

If you volunteer to participate in this study, you will be asked to move a stuffed animal in front of the face of an infant. The procedure will take approximately 20 minutes of your time. Some information about the study is being withheld. A full explanation will be provided immediately after testing.

Potential Risks or Discomforts

There are no foreseeable risks associated with this study.

Potential Benefits of the Research

No direct benefits are anticipated with your participation. Your participation will count toward the Enrichment Activities requirement of the General Psychology course.

Confidentiality and Data Storage

The responses you provide will not be associated with your identity in any way. The data collected from this study will be stored in Dr. Lammers' office in Mashburn 257 for three years. Only student researchers and their faculty advisor will have access to the data.

Participation and Withdrawal

Your participation in this research is voluntary. You may refuse to participate without penalty. If you decide to participate, you are free to withdraw at any time without penalty. To withdraw from the study, simply raise your hand and you will be assisted by one of the researchers. However, since the data is not associated with your name, your data may not be withdrawn from the study after it has been collected.

Questions about the Research

If you have any questions about the research, please ask now. If you have questions later, you may contact Dr. Lammers, by phone at (501) 450-XXXX or in Mashburn 257.

This project has been reviewed and approved by the Institutional Review Board for the Protection of Human Subjects at the University of Central Arkansas. If you believe there is any infringement upon your rights as a research subject, you may contact the Research Compliance Coordinator at (501) 450-XXXX.

Participant Agreement:

I have read the information provided above. My signature below indicates my voluntary agreement to participate in this research study. Please return one copy of this consent form and keep one copy for your records.

Participant's Signature

Date

Researcher's Signature

Date

As you can see in the Sample Consent Form for a Student Research Project, participants agree to participate in an experiment on the basis of a verbal description, but are clearly informed that they may terminate their participation at any time. Then, if the experiment is different from what the participant expected, consent is revoked by merely withdrawing from the experiment. The consent form also informs participants regarding the nature of the study, who is conducting the research, why they were selected, what risks may be involved, what time commitment is required, and whom to contact with questions.

On the Use of Deception

The Sample Consent Form for a Student Research Project does not state the true purpose of the study. The potential participants are being deceived into believing that the purpose of the study is to track eye movements in infants. In actuality, the student researchers were interested in observing whether there would be a gender bias in the type of toy that the participants selected (an infant was never actually used in the study!). Specifically, participants were told that the baby was either a boy or a girl, or were not informed as to the sex of the baby. They were asked to select one of three toys: a female doll (feminine), a truck (masculine), or a duck (neutral). Was this type of deception ethical?

The APA guidelines make clear that researchers must assume personal responsibility for assuring the moral acceptability of their research. Providing this assurance can create a conflict situation for the experimenter, particularly as it relates to informed consent. Fully informing a participant about the nature of the research may alter the kind of findings a researcher obtains. In some cases, participants who are fully informed of the nature of the experiment, the procedure, and the hypothesis may try either to help or to hinder the research. In other cases, realism can only be achieved by misinforming or misleading the participant. Under these circumstances, the behavioral scientist may be faced with a dilemma. The researcher wants to be open and honest, but to do so may reduce the accuracy of the findings. Some psychologists have resolved this dilemma by misinforming or misleading their participants about the true purposes of the research. This is usually what is meant by the term **deception**. Participants are fully

informed of the true purposes only *after* the experiment is completed, in a statement called a **debriefing**. A major problem with this procedure is that it deprives the individuals of information that could influence their decision to participate in the research (that is, the individuals are not fully informed). The use of deception is a very controversial issue, and we will not resolve it here. However, few psychologists believe that deception can be entirely eliminated. The kind and the degree of deception vary greatly across experiments. Some forms of deception are completely harmless (withholding certain information regarding words to be recalled in a memory task) while other forms are potentially harmful (failure to specify the risks of participation when potential risks exist). It is usually the latter that pose significant problems. The researcher must decide when the potentially harmful effects of the experiment are worth the potentially beneficial effects of the knowledge to be gained. Under these circumstances, researchers often consult with those less personally involved (such as colleagues) to evaluate the merits of the research.

Satisfying solutions to the ethical problems created by the use of deception are not yet available, but it is important to express concern about its use. Deception was once routinely accepted—unfortunately, in some cases, even when it was unneeded. Today it is still used, but with greater concern and always accompanied by elaborate justification and careful debriefing. Alternatives to deception have been tried. One is referred to as role playing. With this procedure, participants are fully informed about the nature of the experiment and then asked to play a role. That is, they are instructed to act as if they were actually a participant under the conditions described. In other instances, an experiment is simulated. Participants are asked to imagine certain conditions and then specify how they would perform. For some experiments these techniques have been successful, but for others they have not. Many psychologists believe that these alternatives to deception are too limited to be useful. Others have tried to avoid some of the ethical issues by abandoning laboratory research in favor of research in natural settings. However, as we describe in this chapter, disguised research in a natural setting has its own problems. As we noted earlier, although satisfying solutions to deception are not yet available, efforts to seek them should continue, and a major effort to reduce the use of deception should be made.

Field Research and Ethics

For a variety of reasons that we will examine later, some researchers have become disenchanted with laboratory experiments. Not least among these reasons are the stringent requirements necessary to achieve and maintain ethical standards. Field experimentation is a possible alternative to laboratory methods. Individuals are observed in a natural setting, experimental variables are manipulated, and behavior is recorded without the participant's knowledge. In fact, individuals are not aware that they are serving as participants.

For example, there have been several incidents of college students being hit by cars on the crosswalks near campus. One possible intervention would be to post signs that read “Crosswalk Ahead – Please Slow Down.” Field research could be conducted to assess the effectiveness of this intervention. A researcher with a radar gun could record the speed of automobiles at a crosswalk at various times when the sign is posted and at various times when the sign is removed and then make a comparison. Notice that the behavior of individuals is observed in a natural setting, an experimental variable is manipulated (sign or no sign), and participants are unaware of their participation in the research.

The behavioral measures recorded during field research are referred to as **nonreactive**, or unobtrusive, **measures**. Those who use nonreactive measures believe that the behavior is more natural or representative than when **reactive measures** are used. With reactive measurement, participants are aware that they are being observed and that their behavior is recorded. Some researchers have expressed concern that the very act of observation changes that which is being observed. Instead of behaving as they normally would, individuals may behave in ways considered more socially desirable.

Because most field experiments fall within the public domain (the observations made by the experimenter can be made by anyone, experimenter or not), it has been argued that permission of the participants is not required. Nevertheless, in some instances, there may be considerable intrusions into the private lives of some individuals. Although the many ethical issues involved in field research have yet to be resolved, it would appear undeniable that the public’s attitudes toward this research must be taken into account.

Regulation of Human Research

So who decides whether a particular research study is ethical? As it turns out, this decision is often made at several levels. First, the researcher, guided by the ethical principles, must thoughtfully design the study, often after consulting with colleagues. At many universities, a departmental ethics committee then evaluates the research design. At most institutions (research, educational, hospitals, prisons), the research design is evaluated by an **Institutional Review Board (IRB)** that includes faculty from the sciences, faculty from the nonsciences, administrators, and at least one person not affiliated with the institution. Some ethical issues rise to the level of national concern. For behavioral researchers, the American Psychological Association has an Ethics Committee to continually review the ethical guidelines and monitor adherence to them.

Research With Children and Mentally Challenged: Ethical Guidelines

What if you wanted to conduct research on the effect of television violence on aggressive behavior in children by presenting different types of TV shows to children and observing their behavior? Our examples so far have considered ethical issues when human adults are used as research participants. However, the ethical principles were designed to apply to all research participants, including children and those who are mentally challenged. Although most of the ethical principles are easily applied to these special populations, the issue of informed consent may present an interesting dilemma.

How do you obtain informed consent when the individual may not yet have acquired language ability? Even if the individual is capable of language, how can we be sure that he or she understands the purpose of the study? Will participants understand their right to withdraw from the study at any time? What about occasions when children are unaware of the fact that they are participants, as in research done in nursery school settings when observations are made under natural conditions?

Clearly, special provisions must be made to protect the interests of children and the mentally challenged. The solution is found in the section of ethical standard 3.10 that states, “For persons who are legally incapable of giving informed consent, psychologists nevertheless (1) provide an appropriate explanation, (2) seek the individual’s assent (agreement), (3) consider such persons’ preferences and best interests, and (4) obtain appropriate permission from a legally authorized person, if such substitute consent is permitted or required by law. When consent by a legally authorized person is not permitted or required by law, psychologists take reasonable steps to protect the individual’s rights and welfare.” Therefore, it is important that the researcher carefully and fully inform the parent or guardian of the nature of the research—including information about deception if it is to be used.

Although investigators must be concerned with the health and welfare of all research participants, they must be especially concerned and cautious when using children as participants. Only mild forms of arousal or stimulation should be used. Obviously, the experiment should be terminated if signs of distress become apparent. When using children as participants, careful observations of the children must occur at all times.

The box “Thinking Critically About Everyday Information” reviews some of the concepts presented so far.

Thinking Critically About Everyday Information: Ethics of Human Research

In 2002, the *Washington Post* newspaper published an article titled “Study Links a Gene to Impact of Child Abuse.” Portions of that article are reprinted below:

Scientists have discovered a gene that appears to help explain why some boys who are abused or mistreated are more likely than others to grow up to be aggressive, antisocial or violent. . . . The finding, which for the first time links a gene and an upbringing to a specific behavior, could help shed light on why some children who suffer trauma never seem to recover, while others are resilient. By showing that a particular environment can have devastating consequences for children with certain genes, the new research might one day identify children at greatest risk and help direct services to them. . . . While the implications for social policy could be profound, researchers warned against assuming that genes alone determine behavior, and said that any effort to peg certain children as potentially violent was simplistic and unethical. Indeed, in the interplay between this particular gene and the environment, researchers found the environment played a dominant role. Absent abuse, the gene, which is involved in regulating brain chemicals, did not help predict whether a boy would grow up to be violent or aggressive. And some boys without the genetic variation became aggressive if they grew up in an abusive setting. . . . The study, published in today’s issue of the journal *Science*, was based on 442 boys in New Zealand who were tracked from birth to age 26. The scientists correlated statistics about abuse and mistreatment among the children with variations of a gene that coded for an enzyme called monoamine oxidase A, or MAOA. The enzyme helps regulate the level of chemicals called neurotransmitters, which carry signals in the brain. Moffitt said that variations in the gene had previously been linked to aggression in mice, and a small 1993 study had showed a rare mutation in the gene across three generations of one family in the Netherlands was linked to violence and mental retardation. Variations in the MAOA gene may give some people certain advantages, even as it causes them risks in the presence of trauma or abuse. This could be similar to African populations, for instance, who have a genetic variation that increases the risk of anemia but protects against malaria.

Shankar Vedantam, *Washington Post* Staff Writer
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Research Issues

This study raises several interesting issues, but let’s focus on a few ethical issues that arise from the statement in the article about “442 boys in New Zealand who were tracked from birth to age 26. The scientists correlated statistics about abuse and mistreatment among the children with variations of a gene that coded for an enzyme called monoamine oxidase A, or MAOA.” Consider the following questions:

- When and from whom should have consent or assent been obtained?
- What aspects of the study involve the issue of confidentiality?
- Obviously, some of the research participants were abused during the course of the study. Do you believe that the researcher had an obligation to report such abuse to authorities when it happened, or would this interfere too much with the goals of the research?

Research With Nonhumans: Ethical Guidelines

Most people are surprised to learn that only 7–8% of psychological research consists of animal research and that 90% of the animals used are rodents and birds. Even so, psychologists do make use of such diverse organisms as worms, snakes, fish, cockroaches, birds, bees, mice, rats, dogs, cats, sheep, horses, elephants, pigs, and an assortment of nonhuman primates, to name a few. The reasons for selecting nonhuman organisms are as diverse as the organisms selected. Suffice it for the moment to note that we have greater control over nonhuman participants; they are generally available 24 hours a day over days, weeks, months, or years. Moreover, we may subject them to conditions that would be clearly unethical with human participants. Yet these experiments ultimately are important in promoting human welfare. Experiments of this nature must be carefully assessed and evaluated, even though nonhuman animals are used. Important ethical questions are clearly involved.

To address these ethical concerns, guidelines have been established. The APA code of ethics section 8.09 describes the general principles for the care and use of animals in research. These principles include the use of trained supervisors and research assistants, minimization of pain and discomfort, use of pain and discomfort only when it is necessary for research or applied purposes, use of anesthesia during surgery, and use of rapid procedures to terminate life with minimal pain. The Animal Welfare Act also provides for unannounced inspections and requires that every institution conducting animal research have an Institutional Animal Care and Use Committee (IACUC) to review each research proposal. Further guidelines for the care and use of animals are provided by the [Association for the Assessment and Accreditation of Laboratory Animal Care](#) (AAALAC).

Even with extensive ethical standards for the use of nonhumans in research, the topic has been and will continue to be controversial. Many people have very strong feelings regarding animal research. These feelings exist on a continuum. Some believe that we should stop all animal research, some believe that the ethical standards should be more stringent, many believe that the current ethical standards are appropriate, and some believe that the ethical standards are too stringent. Let's examine some of the arguments on each side of the issue.

Arguments Against Animal Research. Some individuals hold the philosophical position that nonhuman animals are “equal” to humans and, therefore, humans do not have the right to use them in animal research. After all, nonhuman animals cannot provide informed consent. These people argue that there are viable alternatives such as research on plants, tissue cultures, and computer simulations. Although many of these individuals agree that the pace of scientific progress would slow, they believe that it is a fair price to pay for the elimination of animal research. Some of these people belong to animal rights organizations such as [PETA](#) (People for the Ethical Treatment of Animals), and [PAWS](#) (Progressive Animal Welfare Society). Actually, most of the efforts of these organizations are not

directed toward psychological research. Rather, they have a very broad agenda that includes medical research, cosmetic research, pet ownership, circus animals, fishing and whaling practices, trade in exotic animals, and the fur industry.

Arguments for More Stringent Standards. Some individuals and groups argue for more stringent standards. Many make the same arguments as those opposed to all animal research, but are not willing to eliminate animal research. Many are interested in curtailing animal research that they define as unnecessary. This type of research might include the testing of cosmetic products, studies that attempt to replicate previous findings, research that does not have an immediate application, and research with “higher” animals such as dogs, cats, and primates. The greatest problems are drawing the lines and defining what is unnecessary.

Arguments for Current Ethical Standards. Many researchers and nonresearchers believe that the current standards provide the most appropriate definitions. The current guidelines have evolved from less stringent guidelines and represent the culmination of much discussion and debate. They are extensive, and researchers who use animals in research are held accountable for their treatment. Researchers are also keenly aware of the many benefits that animal research has provided for both humans and nonhumans. They also argue that alternatives (plants, tissue cultures, computer simulations) are often not capable of answering the research questions.

Arguments for Less Stringent Ethical Standards. There may be some persons who believe that the ethical standards for using nonhuman animals in research are too stringent. However, there has been no organized effort in this direction.

There can be no right answer when it comes to the use of animals in research. However, there must be a national policy. This policy has been, and will continue to be, shaped by national debate on the issue. Everyone should be aware of the arguments on all sides in order to participate in an informed and intelligent discussion.

Professional Behavior of the Investigator

For students relatively new to the area of behavioral research, several issues related to ethical conduct should be emphasized.

Testing Participants

What is wrong with the following scenario?

Fred M. and Margot T. are engaged in a joint research project. Prior to collecting data, they spent many hours together designing the study, gathering and installing the appropriate apparatus, and

preparing forms for consent, debriefing, data collection, and IRB approval. In order to familiarize themselves with the experimental procedures, they tested each other as participants. Based on their preliminary findings, they estimated it would take approximately 25 minutes to test each participant. Accordingly, they scheduled their participants to arrive every 30 minutes. Reasoning that some participants might have difficulty remembering their appointment times, they scheduled each participant on the hour and the half-hour.

On the day they were to begin testing participants, they misjudged the time it would take to get from class to their experimental laboratory. Consequently, they arrived 5 minutes late. After apologizing for their tardiness, they proceeded to conduct the experiment. The first participant was somewhat slower than expected. She finished 35 minutes later. As she prepared to leave, she turned to Margot and asked, "Could you tell me what the experiment was about? I found the task very interesting. Did it tell you anything about me?"

Margot noticed that the next participant was already getting a little impatient. He had arrived a few minutes early and had been waiting almost 15 minutes. She turned to her first participant and said, "I'm sorry, there isn't enough time to explain things right now. The next participant is already here, we are running behind, and I'm afraid we may get backlogged. Why don't you look up Fred or me in a week or two?"

Things did not get better. During the briefing period prior to testing, the second participant asked many questions. He wanted to know how the apparatus worked, whether there was any possible danger, what the experimenters hoped to find out, and whether his performance would be kept confidential. He emerged from the laboratory 50 minutes later. By now the waiting room was beginning to look like a medical doctor's office. One participant was visibly upset. "I thought you told me it would only take a half-hour at the most. I've been here that long already. I'm sorry but I've got a class in 30 minutes." With this he turned and departed abruptly.

Many aspects of Fred and Margot's preparation are commendable. They designed this study in advance, prepared data collection forms, checked out the apparatus, and made an effort to estimate how long the experimental sessions would last.

However, they made two big mistakes. They failed to take into account the convenience and comfort of the participants and to schedule sufficient time for the debriefing period at the end of the experiment. It was correct to test each other as experimental participants because it gave them a participant's view of the proceedings, but they should have recognized that they were not typical participants. Presumably they knew what was going on. They were not entering an unfamiliar situation, a cause of apprehension in many participants. Some fear the possibility of physical discomfort (such as electric shock), and others experience threats to their self-esteem (not measuring up to the performance standards of other

participants). Because anxiety and tension frequently provoke an outpouring of questions, it may take considerable time to get some participants underway. Moreover, the completion of the experimental session often opens a floodgate of questions. Therefore, it is important to build into the experiment sufficient time for a debriefing period. Such a period is essential to relieve anxiety, for giving as full an account of the purposes of the experiment as permissible, and for answering questions. What was the experiment all about? How did I do? Are you going to publish the results?

If you are conducting a research study, you should schedule adequate time for each participant so that you are not forced to give him or her the bum's rush after each session. Inform the participants as much as possible about the nature of the experiment without compromising it. In some instances, of course, it will not be possible to provide much information until all participants have been tested. If this is the case, participants should be told this, and a mechanism should be set up to provide detailed information at a later date. After you have set up this mechanism, it is imperative that you follow through. Perhaps you could send the participants a preliminary report, a preprint of a publication, or an abstract of the research. Your efforts should be directed to making participation a pleasant educational experience. Research psychologists want to establish a reputation of trust. When this is not achieved, rumors and folklore develop, particularly on college campuses, which tend to establish local reputations of various departments. After such reputations are established, deserved or undeserved, there is a considerable inertia, making it difficult to change them.

Certain behaviors distinguish between an amateur and a professional or between an incompetent and a competent investigator. Competent investigators show up on time, are well prepared, and have checked the equipment beforehand to be sure it is working well. Moreover, they are familiar with the apparatus, with the procedure, and with the instructions. All the necessary secondary equipment is at hand, such as data sheets with names, dates, conditions, experiment number, and biographical sketch. A checklist of necessary steps and equipment should be used if the experiment is complex. By being well prepared and competent, you inspire confidence on the part of participants.

Keep in mind our earlier observation that participants are often nervous or anxious about participating in psychological experiments. Do not forget the amenities—be thoughtful and courteous. Bluntly telling participants to do something may appear as though you are ordering them to do it. They may regard the order as a threat to their personal freedom, and may then assert their freedom by becoming negative or uncooperative. However, a request coupled with words like *please*, *thank you*, and *you're welcome* is less likely to arouse negative reactions.

One final word is in order. The experimental setting should be used strictly for research purposes. It should not be a hangout for friends or a place for bull sessions. More than one experiment has been compromised by distractions arising from various activities in the waiting room. In closing this section,

we should note that how we conduct ourselves as experimenters can influence the participant in significant ways and can introduce unwanted bias into the experiment.

Integrity of the Data

Remember that data gathered in an experiment are confidential. Individuals are sometimes very sensitive about their performance in experimental tasks. It is imperative that you, as the experimenter, refrain from discussing the performance of individual participants with anyone. Where possible, code the data sheets to preserve the anonymity of participants. If follow-up information is not needed, you may be able to eliminate the participant's name entirely from the data sheet.

For most studies, the raw data will be entered into a data file on a computer so that statistical analyses can be performed. At this stage of the research process, you should realize that the data sheets represent the answer to your research question. Therefore, the data should be handled carefully. Data sheets should be kept together in a secure place, and data files on the computer should be saved in several locations.

During data collection or during data input and analysis, it is common for the researcher to question the validity of some data. For example, you may have noticed that a particular participant did not seem to take the experiment seriously. You may notice that a data sheet is suspicious because the participant answered "C" to all 30 multiple-choice questions on your survey. You may notice a data value that is so far out of range that it does not seem realistic. What is the ethical approach to these situations? Can you simply throw out data? The answer is that you can only do so under certain conditions. These conditions require that you have a valid reason for doing so and you report your reasons for doing so in any published report. Before doing so, it is often wise to consult with colleagues who do not have an inherent interest in the research project and can provide an unbiased opinion.

Because the data that are entered into a computer file are often already manipulated in some way, it is very important to retain the original data if there is the possibility that the data will be published in the future. Many investigations into possible ethical violations have been resolved by examining the original data. Remember that your published research findings, which may be read by scientists for years to come, are rooted in the original data.

Plagiarism and Publication

Plagiarism is a serious violation of ethical principles. It can be defined as taking the ideas or words of someone else and representing them as yours. For example, if you are writing a research paper and express an idea that came from another author, you are required to cite that author. Also, you should express the idea in your own words—not the exact words of the author. In rare situations, you may quote,

word for word, the statement of another author. When doing so, you are required to cite that author (including the page number) and to place the statement in quotation marks. Under no circumstances should you simply change some of the words from statements made by another author, even if you cite that author.

Let's examine a few examples of appropriate and inappropriate citations by considering the actual text in a student research article (Sheets, 1999):

“The interview is a crucial part of the selection process for employees and graduate students. Employers use interviews to form an impression about possible employees and to determine whether they would be positive additions to their companies. Written applications can reveal only a limited amount about a person; they do not show the personality or character of a person.” (p. 7)

The following is the most obvious example of plagiarism because it includes a direct quote without any citation:

There are many factors that affect impressions during an interview. Employers use interviews to form an impression about possible employees and to determine whether they would be positive additions to their companies.

The following is an example of plagiarism because it includes a direct quote without a page citation:

There are many factors that affect impressions during an interview. Employers use interviews to form an impression about possible employees and to determine whether they would be positive additions to their companies (Sheets, 1999).

The following is an example of plagiarism because it includes wording that is too similar to the original source:

There are many factors that affect impressions during an interview. Interviews are used by employers to form an impression about potential workers and to determine whether they would be positive additions to the workplace (Sheets, 1999).

The following is not plagiarism, but is an example of an unnecessary direct quote:

There are many factors that affect impressions during an interview. “Employers use interviews to form an impression about possible employees and to determine whether they would be positive additions to their companies” (Sheets, 1999, p. 7).

The following is not plagiarism and is a good example of the appropriate use of another author's idea with a proper citation:

There are many factors that affect impressions during an interview and the interview is often a critical component of the hiring process (Sheets, 1999).

The process of conducting research to answer questions is an endeavor undertaken by the community of scientists around the world. Research ideas do not come from a vacuum. As you consider a

potential research project with hypotheses and methods, those ideas may come from your own personal experience, something you read in a psychology textbook, something you read in a scientific journal, and/or something one of your professors said. Therefore, those sources of information are valuable and should be recognized by you as you develop your own research proposals and report research results.

It is important to realize that research is a public enterprise. One has not completed the scientific process until the results are made public. Other scientists review research reports before a presentation is accepted at a scientific conference, before an article is published in a journal, or before a book chapter is published in a book. Even the research of an undergraduate student is, at the very least, reviewed by the professor. All of these reviewers are knowledgeable in the field and aware of ethical principles. As such, they are very adept at detecting violations.

Case Analysis

Janet is a senior psychology major interested in conducting a study to examine the effects of TV violence on behavior in children. A friend of Janet's is the director of a day-care facility in town, and Janet decides that this would be a convenient place to make observations. Janet devises a methodology whereby she will assign the children to two groups. All of the children will watch television programs for two hours each day for a total of three weeks. During the programs and for one hour afterward, Janet will record the number of aggressive acts by each child. One group will watch violent programs, and the other group will watch nonviolent programs.

Janet describes the study to her friend, the director of the day-care center. Her friend agrees that Janet can conduct the study. So Janet develops videotapes that have either violent or nonviolent programs and develops data sheets with space for each child's name, group assignment, and number of aggressive acts. She begins the study. After one week, it has become clear that the children watching the violent programs are engaging in very aggressive behaviors and that some of the children in this group are becoming fearful. To protect the integrity of her research design, Janet continues the study for the remaining two weeks. Janet is pleased that the results clearly support her hypothesis that the children who watched the violent TV programs would show more aggressive behavior. She plans to present her findings at a regional psychology conference.

Critical Thinking Questions

1. Which of the five ethical principles has (have) been violated?
2. Within ethics standard 8, which areas have been violated?
3. What should have been done to make this study ethical?

General Summary

Ethical conduct, for which there are now guidelines, is of primary importance in conducting behavioral research. Had guidelines been in place earlier, research such as the Milgram obedience study and the Zimbardo prison study might not have been conducted. However, specific ethical standards have evolved over the years, and all behavioral research must now be reviewed for compliance to ethical standards. These ethical principles and standards are clearly articulated by the American Psychological Association and include all areas of professional behavior. Issues particularly important for researchers include informed consent, the use of deception, the use of animals in research, treatment of research participants, integrity of data, and reporting results. The scientific methods described in the remainder of this book are only useful if they are used ethically. In the next chapter, we will explore what it means for behavioral research to be scientific.

Detailed Summary

1. The Tuskegee syphilis study is an example of unethical research in which participants were not fully informed about the research and effective treatments were withheld.
2. The Milgram obedience studies and the Stanford prison study are examples of social psychology research in which participants experienced anxiety and discomfort at levels that would not be permitted under current ethical standards.
3. The American Psychological Association maintains a set of ethical guidelines for both human and animal research that currently includes five general principles and ten ethical standards.
4. Informed consent is required in most research with human participants. It includes a description of the study, potential risks, the freedom to withdraw, and whom to contact with questions.
5. For children and the mentally challenged, informed consent is obtained from a legal guardian.
6. Providing false information to (or withholding information from) participants constitutes deception. Its use is sometimes necessary to answer the research question, but its use should also be carefully weighed against the potential for harm.
7. Informed consent may not be necessary in field research that involves the recording of public behavior.
8. The Institutional Review Board reviews research to determine whether ethical guidelines for human research are being followed.
9. Ethical guidelines for animal research are provided by the American Psychological Association, the Animal Welfare Act, and the Association for the Assessment and Accreditation of Laboratory Animal Care.

10. The use of animals in research is a controversial topic with arguments on both sides of the debate.
11. All researchers, including student researchers, should strive to be competent, courteous, and professional.
12. All researchers, including student researchers, should maintain integrity during the analysis of research data and the presentation of research results.

Key Terms

debriefing

deception

informed consent

Institutional Review Board (IRB)

nonreactive measures

plagiarism

reactive measures

Review Questions / Exercises

1. We mentioned several studies that involved questionable ethics. Another one is the Willowbrook Hepatitis Project. Conduct an Internet search to learn more about this study, and identify the ethical principles that were violated.
2. Why is the procedure of deception needed in some research? How is the ethical appropriateness of deception determined?
3. In your own words, summarize in just a few sentences what it means to be an ethical psychologist.
4. In terms of ethical procedures, what is the primary difference between research with adult participants and research with children (or the mentally challenged)?
5. The chapter outlined four positions on the use of animals in research. Which position do you take, and why?