Ethics in Research and Publication

11

Dr. Bell planned to use telephone interviews to gather data about the health history of older men and women from low socioeconomic positions. His rationale was that the phone typically offers greater privacy than face-to-face interviews, and research participants are likely to be more self-disclosing with the anonymity provided by this medium (Sieber, 1992). He had rejected using the Internet for gathering data because he concluded that this population would be less likely to be familiar with computers and his sampling would therefore be less representative.

He did not know that people from low socioeconomic groups usually do not live alone or have privacy from their families or caretakers when they use the phone (Sieber, 1992). He was also unaware that this population often keeps health secrets from their own family members and, therefore, would be less likely to freely disclose to a researcher information that they would not reveal to a family member who was within earshot. If he had conducted a pilot study or consulted an experienced investigator familiar with the characteristics of this group, he would have known that his methodology was flawed, and he could have made the necessary changes before proceeding.

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Essential Ethics for Psychologists: A Primer for Understanding and Mastering Core Issues, by T. F. Nagy

Introduction

Although the first American Psychological Association (APA) Ethics Code (1953a) devoted many more standards to clinical than research matters, it at least introduced the topic of conducting the science of psychology within an ethical framework. The research section consisted of three parts: (a) Maintaining Standards of Research, (b) Protecting Welfare of Research Subjects, and (c) Reporting Research Results. These parts addressed such topics as preserving privacy, informed consent, harmful aftereffects, suppressing data, and humane treatment of animals—all present in the 2002 Ethics Code.

The first Ethics Code also addressed publication matters, in a section titled Writing and Publishing. This included how to list coauthors when there are multiple investigators, a decision rule for identifying who should be listed as the lead author, and acknowledging published and unpublished material that has influenced the research or writing (i.e., not mentioning plagiarism per se but addressing the topic in a general way).

The current ethical regulations about research and publication incorporate all of these original concepts and more. They have matured into a comprehensive tutorial comprising more ethical standards than any other section in the entire code. In this chapter, I first examine seven ethical areas concerning research, beginning with institutional review boards, and then four areas addressing publication matters.

Institutional Review Boards

When contemplating research, psychologists must obtain approval from institutions where the research is conducted before proceeding (universities, schools, prisons, hospitals, the military, or any other setting). They must also submit their research proposal to the institutional review board (IRB) associated with their place of employment. In reviewing research proposals, the IRB considers institutional commitments and regulations, applicable laws, and standards of professional conduct and practice to safeguard the rights and welfare of people who volunteer to participate in the study.

According to federal rules, the IRB must include at least five members of varying backgrounds and diversity, including race, gender, and cultural matters, who are sensitive to community attitudes (Institutional Review Boards, 1991). Rules of membership are quite clear: include a diversity of professionals (e.g., psychologist, psychiatrist), at least one member whose primary concerns are in the scientific area, at least one member whose pri-

mary concerns are in nonscientific areas, at least one member who is not otherwise affiliated with the institution and is not related to a family member of a person affiliated with the institution, and no member who has a conflict of interest with any project under review. If the IRB reviews proposals involving vulnerable subjects, such as children, older people, hospitalized HIV patients, prisoners, pregnant women, or those who are mentally disabled (inpatients or outpatients), then the board must include someone who is knowledgeable about these populations.

Many investigators rely on federal grants for funding, and they must comply with federal rules and regulations, as articulated by the National Institutes of Health's Office of Research Integrity. For the most part these regulatory standards are clear and straightforward, and the investigator can learn which steps to take and what to avoid in protecting the welfare of research participants. These include such topics as minimizing risk to participants, providing thorough informed consent in advance, debriefing, and the like. If investigators are engaged in animal research, they must be well versed in the animal welfare principles as articulated by the federal rules and regulations, such as the Animal Welfare Act (2007), to be discussed in the section that follows.

Planning Research

Investigators are obligated to do research on topics with which they already have some familiarity so as to minimize the likelihood of harm to individuals. No matter how sophisticated investigators may be in their own specialty area, they may be relatively uninformed about a different area of study for a variety of reasons (e.g., type of population, the milieu, research design). If they are completely naive about a topic or a population, they must obtain some training or consult with others who are knowledgeable so as to optimize the research protocol and minimize the possibility of harm.

The psychologist who is researching alcoholism in an American Indian population but who has never directly observed the Indian culture should work with a coinvestigator or consultant who is familiar and skilled with this population. Likewise, an investigator using the Internet as a means of gathering data on patients with major depressive disorder would do well to consult with someone familiar with this medium first to better address informed consent, minimize potential harm to online participants who might be suicidal, and conduct long-term follow-up. By being familiar with the population and milieu, researchers will minimize invasiveness and be able to fine-tune protocols so as to choose procedures that might be more palatable to the research participants without compromising the study.

Informed Consent for Research Participants

Researchers must provide informed consent to individuals considering participating in research, disclosing information sufficient in scope and depth to help them formulate a decision about participating in the study.

VULNERABLE GROUPS

When recruiting minors, investigators must obtain informed consent from parents or legal guardians and must obtain *assent* from the children (i.e., their agreement, regardless of how much the child understands of the research); direct appeals should never be offered directly to a child (Scott-Jones, 2000). An IRB would expect extra measures to be taken when recruiting members of other vulnerable groups, such as American Indians, high school equivalency students, those lacking financial resources (e.g., the homeless), those living in institutions (e.g., prisoners, residents of assisted living settings), those experiencing social stigmas (e.g., due to ethnicity, race, sexual orientation, physical disability), those in poor health (e.g., hospitalized patients), or those with mental limitations (e.g., serious mental illnesses, developmental disabilities, or dementias; Knapp & VandeCreek, 2006).

An example of an extra measure might be assessing a candidate's mental competency to understand informed consent in a study involving experimental treatment by using an instrument such as the MacArthur Competence Assessment Tool for Treatment (Grisso & Appelbaum, 1998). Examples of potential risk to a vulnerable group are examining the ethicality of assigning someone with suicidal ideation to a placebo group or allowing a participant exhibiting the beginning symptoms of mania to continue as a member of the control group. Another example is recruiting someone with dementia for a study involving deception.

Although the rationale and general concepts of informed consent are discussed in Chapter 5, it is useful to examine the specific ethical requirements as they appear in the 2002 Ethics Code. Standard 8.02, Informed Consent to Research, requires psychologists to

> inform prospective participants about (1) the purpose of the research, expected duration, and procedures; (2) their right to decline to participate and to withdraw from the research once it has begun; (3) the foreseeable consequences of declining or withdrawing; (4) reasonably foreseeable factors that may be expected to influence their willingness to participate such as potential risks, discomfort, or adverse effects; (5) any prospective research benefits; (6) limits of confidentiality; (7) incentives for

> participation; and (8) whom to contact for questions about the research and research participants' rights.

They must also provide the opportunity for participants to ask questions and receive answers.

The Stanford Prison Experiment was conducted in 1971 by Phil Zimbardo for the purpose of examining the psychological effects of assuming the role of a prisoner or prison guard (Haney, Banks, & Zimbardo, 1973). It is an excellent example of psychological research going awry and what the investigator ultimately did to protect the participants. The investigators paid 24 college students $15 per day to participate in the research. The students were screened for mental disorders and history of criminal activity and randomized into two groups, prisoners and guards, in a carefully designed "prison" setting in the basement of a building at Stanford University. What was intended to be a 2-week study had to be ended prematurely after 6 days because of the mental deterioration of the participants; the "guards" became sadistic, and the "prisoners" showed signs of extreme stress.

The primary investigator acknowledged that he had become so engaged in his role that he initially failed to appreciate the harm that his experiment could have on the participants. However, to his credit, he subsequently used the experiment for teaching ethical concepts for decades following the research. His website contains interesting video clips of the original study and is narrated by the author himself (http://www.prisonexp.prg/).

Intervention research examines the use of experimental treatments and strategies with those experiencing clinical symptoms (e.g., obsessive–compulsive disorder, chemical dependency, or major depression), and psychologists must always proceed cautiously to protect patients and clients from harm. They must clarify the following to these prospective participants at the outset:

- the experimental nature of the treatment;
- the services that will or will not be available to the control group, if appropriate (i.e., if symptoms become worse during participation and a participant had been randomly assigned to a control group, what can that person expect by way of support or crisis intervention);
- the means by which assignment to treatment and control groups will be made;
- available treatment alternatives if one does not wish to participate in the research or decides to withdraw after the study has begun; and
- compensation for or monetary costs of participating, including whether third-party reimbursement will be sought (e.g., health insurance, Medicare).

An example of how informed consent might apply in intervention research follows.

> A 24-year-old woman had been molested by a priest as a child and had agreed to participate in an experimental treatment for survivors of childhood sexual assault. In addition to being provided with the usual informed consent matters (e.g., description of the study, time involvement, confidentiality, risks and benefits), she was informed that the treatment was experimental in nature, was not evidence based, and had not yet been shown to be effective in reducing symptoms. She was also informed that she would be randomly assigned to a control or experimental group. If assigned to the control group, with no exposure to the experimental treatment, and she experienced a worsening of symptoms, she was told she could opt to consult with a therapist. However, if she chose this option, she would be dropped from the study. She was also informed that she would be compensated $125 for participating in the protocol for (a) completing baseline data and (b) attending 10 group meetings, with this amount to be payable on the last day, whether or not she attended all 10 of the meetings. Finally, she was informed that if she refused to participate or decided to withdraw after the study had begun, she would receive referrals to competent therapists accepting new patients, who were uninvolved with the research.

DISPENSING WITH INFORMED CONSENT

There are situations in which informed consent may be omitted, such as when the research would not be assumed to create distress or harm and confidentiality is protected. The following situations are described in Standard 8.05, Dispensing With Informed Consent for Research, of the 2002 Ethics Code as meeting the criteria for dispensing with informed consent: (a) studying normal educational practices, curricula, or classroom management methods conducted in educational settings; (b) anonymous questionnaires, naturalistic observations, or archival research (e.g., using anonymous patient data in hospitals) for which disclosure of responses would not place participants at risk of criminal or civil liability or damage their financial standing, employability, or reputation; and (c) the study of factors related to job or organization effectiveness conducted in organizational settings for which there is no risk to participants' employability.

The U.S. Department of Health and Human Services discusses the circumstances under which informed consent may be omitted in its *Code of Federal Regulations,* under Title 45, Public Welfare, Part 46, Protection of Human Subjects. It states that an IRB may rule to dispense with informed consent when (a) the research presents no more than minimal risk to participants and involves no procedures for which written consent is normally required outside of the research context and (b) the only record linking the subject and the research is the consent document itself, and

the principal risk would be potential harm resulting from a breach of confidentiality (Protection of Human Subjects, 1991, amended 2005). To satisfy the second condition, each subject would be asked whether he or she wants documentation linking him or her with the research, and these wishes would govern. The term *minimal risk* means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests (Protection of Human Subjects, 1991, amended 2005).

Researchers may dispense with informed consent when audio- and videotaping under two conditions: (a) if the research consists solely of naturalistic observations in public places, and it is not anticipated that the recording will be used in a way that could cause personal identification or harm or (b) the research design includes deception, and consent for the use of the recording is obtained during the debriefing stage, after the participant's involvement with the protocol has ended (i.e., the participant may choose to delete the recording at that point).

PROTECTING THE WELFARE OF SUBORDINATE RESEARCH PARTICIPANTS WHO DECLINE OR WITHDRAW

When conducting research with those in a subordinate relationship, such as patients or students, investigators must exercise additional caution to protect the prospective subjects' rights if they decline to participate or withdraw after data gathering has begun. If a patient or student refuses to participate in the study or withdraws after it has begun, he or she is entitled to receive referrals to competent therapists uninvolved with the research protocol who are able to accept new patients. The investigator must be neither coercive regarding participating at the outset nor punitive if the individual withdraws. And if students are required to participate in research as part of a course requirement or for extra credit, they must also be given the option of an equitable alternative if they decline to engage in the investigation.

Offering Inducements for Participating in Research

Investigators commonly offer incentives to prospective participants, such as money, medication, didactic experiences, or therapeutic interventions (e.g., meditation, hypnosis, individual or group therapy). These can be

powerful motivating factors for the vulnerable groups mentioned earlier (students, those who lack financial resources, and those who are stigmatized, institutionalized, or physically or mentally ill).

> In an attempt to increase response rate, a researcher planned to offer elementary school children a decorative pencil as a reward for returning a signed parental permission form. The researcher devised this strategy because the school did not give permission to mail forms directly to parents; instead, the school requested that forms be sent home with the children. The researcher emphasized that all children who returned a signed form would receive the pencil, including those children whose parents declined to participate as well as those whose parents agreed. At its initial review, the IRB objected to the pencil as an inducement, asserting that such a reward was coercive. On appeal, however, the IRB reversed its decision, acknowledging that the magnitude of this reward was modest and was unlikely to be coercive. In addition, the reward was given to children for returning the signed permission form, regardless of parents' decision to agree or decline to participate (Scott-Jones, 2000).

If offering clinical services as an inducement, investigators must provide information about the nature of the services, risks and obligations, and limitations. For example, when offering individual psychotherapy to research participants, the investigator must clarify if there is an option to continue in treatment with the same therapist after the protocol has ended. Also, the investigator must clarify if there would be any cost for the treatment, either during the course of data gathering or afterward, and if there is a limit to the number of therapy sessions afterward.

Investigators must avoid taking advantage of prospective participants, exploiting, or coercing them in any way as a means of increasing their sample size. The investigator must carefully consider the value of an inducement with a particular vulnerable group within the local geographical area. Offering too great an inducement diminishes the participant's freedom of choice in weighing risks and benefits (Scott-Jones, 2000). Coercion can occur whenever an individual feels that he or she cannot afford to avoid participating in the investigation because there is so much to gain from the inducement that is offered. A homeless person, prisoner, or someone experiencing panic attacks might feel that the inducements of money, privileges, or clinical intervention would far outweigh any potential adverse experiences that might be inherent in the research. They may give a cursory glance at the risks section of the consent form and make a premature decision to join the study, regardless of personal inconvenience, time required, psychological stress, or other negative factors to be encountered as part of the study. When investigators have questions about the nature of an inducement to offer, they should consult with peers, their IRB overseeing the study, and stakeholders in the study. Even if they are not affiliated with an institution with an IRB,

they may seek a review of their protocol with another institution's IRB that is authorized to evaluate external research proposals.

Deception in Research

Deception in research consists of either providing false information to participants about the purpose or goals of an investigation at the outset or deliberately misrepresenting facts or information during the course of the experiment. It remains a controversial topic among psychologists even in this day and age. Questions (Eyde, 2000) to consider are as follows:

- What responsibilities does an investigator have when considering using deception in research?
- How might participants be harmed by the deceptive information about the nature of the experiment?
- Which populations are at the greatest risk of experiencing this harm?
- To what extent are self-reports of no adverse impact by the deception judged to be expected and desirable responses to the experimenter (at the debriefing session)?
- What might researchers do to counteract potential negative consequences of deception?

On deontological grounds it can be argued that it is inherently unethical and undesirable to ever deliberately deceive people. This is consistent with the Principle C: Integrity: "Psychologists seek to promote accuracy, honesty, and truthfulness in the science, teaching, and practice of psychology. In these activities psychologists do not steal, cheat, or engage in fraud, subterfuge, or *intentional misrepresentation of fact*" [italics added]. Principle B: Fidelity and Responsibility reminds psychologists that "psychologists establish relationships of trust with those with whom they work." Lying about the purpose of an experiment or providing erroneous data during its course would seem to violate this principle.

On teleological grounds it can be argued that acts of deception by researchers result in undesirable consequences for the research participant, individual investigator, the public perception of psychologists, and ultimately the science of psychology (Kimmel, 1998; Ortmann & Hertwig, 1997). It undermines individual's trust in psychologists, alters the behavior of future participants in the same experimental protocol (the *spillover effect* whereby future participants are contaminated by learning of past participants' experiences and expect to be deceived), thereby possibly affecting data collection and the ultimate findings of the investigation.

A commonly cited experiment, also mentioned in Chapter 8, was conducted by Stanley Milgram, who published his controversial investigation titled "Behavioral Study of Obedience" in 1963. Milgram studied *destructive obedience* by recruiting 40 participants ("teachers") to administer electric shocks to "learners" (confederates in another room pretending to suffer with each jolt) whenever they made an error. The primary dependent variable was the maximum shock (30 levels of intensity) that the teacher was willing to deliver before refusing to continue. Of the group, 26 participants obeyed all commands, administering the maximum intensity of shock even while hearing screams of anguish from learners; 14 participants broke off the experiment at some point after the victim protested and refused to provide further answers. The procedure created extreme levels of nervous tension in some teachers, including profuse sweating, trembling, stuttering, and nervous laughter. Extensive debriefing followed the experiment, whereby teachers and confederates were allowed to interact with each other, disclose the deception, and process their emotional reaction. Milgram argued that the social benefit of his study outweighed any adverse effects to the participants.

To be sure, Milgram's notorious investigation revealed useful data about the willingness of people to comply with authority, as did Zimbardo's Stanford prison experiment 8 years later. However, neither of these investigations would likely be approved by an IRB by today's standards because the risk of harm to participants would be considered too great, and the use of nondeceptive techniques or lower risk designs might be able to be substituted to attain the same results (e.g., virtual reality settings created on the computer).

There is a fundamental rule against deceiving participants in a research experiment: If the same research can be carried out without deception, then it should be. However, if the prospective value of the research necessitates having some degree of deception in the course of the study, then this is acceptable as long as adequate debriefing occurs so that participants do not feel duped, manipulated, betrayed, or otherwise harmed. Standard 8.07, Deception in Research, of the 2002 Ethics Code sums up the four criteria to be met before an investigator may use deception: (a) Deceptive techniques must be justified by the study's significant prospective scientific, educational, or applied value and only if nondeceptive strategies are not feasible; (b) there must be no deception about the infliction of physical pain or severe emotional distress; (c) the deception must be revealed and participants debriefed as early as feasible—preferably at the end of their participation, but no later than at the end of data collection; and (d) participants must be permitted to withdraw their data after being debriefed. The last three criteria are straightforward and could unambiguously be met by an investigator; however, the first one can be a major hurdle to overcome because

it consists of the investigator's personal judgment about the prospective value of the study and is therefore subject to bias.

The *prospective scientific value* of an investigation consists of its significance as a contribution to the knowledge base. The *prospective educational value* of an investigation refers to its benefit to individuals or to society. And the *prospective applied value* refers to industrial and organizational settings, environmental psychology, or direct implications for the ways in which psychologists intervene in the lives of others (Nagy, 2005). Before the investigator proceeds, it is his or her ethical duty to make an objective appraisal of the prospective value of the research using available resources, such as consulting with peers who have addressed similar hypotheses in their research, review of the scientific literature, and seeking advice from the local IRB. The investigator should consider deception to be a last resort, an acceptable choice only after exploring all reasonable options for testing the hypotheses without using deception.

Debriefing

Investigators must provide a prompt opportunity for participants to learn about the nature, results, and conclusions of the research as well as correct any misconceptions that participants may have concerning the investigation. They may delay or withhold this feedback if scientific or humane values justify such a step. For example, as mentioned, it may be important to avoid contaminating the subject pool of future participants by delaying debriefing, and in research with participants with diminished capacity or who are moribund and unable to comprehend the debriefing, it may be more humane to withhold it (Canter et al., 1994).

Debriefing can mollify the effects of research using deception or creating aversive reactions. Certainly the creative measures taken by Milgram, allowing participant and confederate to interact at the conclusion of the study and revealing the true nature of the research, and Zimbardo, ending the experiment after only 6 days and evaluating the participants, helped reverse any long-term negative effects. If investigators discover that being involved in research has harmed a participant, they must take steps to minimize the harm at the end of data collection.

> In a study designed to test the effect of negative emotions on memory, participants were asked to take a psychological test to measure anxiety and depression and then randomized into two groups. One group was given true feedback about test results, and one was given exaggerated false negative feedback results intended to elevate anxiety in the participants. Participants were then asked to memorize a list of paired words, given a distraction cognitive task, and then tested on their memory for the paired-words list.

> Immediately following the data collection the experimenter provided an open-ended, extensive debriefing to those who were deceived by having an individual face-to-face meeting. The experimenter explained that participants were given false results and apologized for misleading them. The experimenter asserted a preference for conducting the study without deception but stated that it was essential to create cognitive dissonance in one group by providing falsely elevated anxiety and depression scores and then noting how their performance differed from the other group. The experimenter then showed the participants a bell-shaped curve and explained, in lay terms, what the participants' true scores were on depression and anxiety controlled for age and gender. She monitored the participants' emotional reactions during the debriefing session and encouraged participants to ask questions and seek clarification in an unhurried manner.
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> The experimenter explained that there still was a possibility that the effects of negative feedback might persist and that people sometimes have a tendency to discount information that is presented during debriefing that is inconsistent with the deceptive negative feedback received during the experiment (Ross, Lepper, & Hubbard, 1975). Simply being aware of this possibility helps dispel the effect. The experimenter assured the participants that pilot testing had been done to ascertain that the deception was believable and that participants were not gullible and should not feel shameful or foolish. The experimenter again apologized for the subterfuge, and on closing the interview, provided a name, telephone number, and e-mail address for any questions or concerns that might surface later. The experimenter asked permission to telephone participants for follow-up after 1 week to check on their frame of mind and make sure that they were feeling all right about the experiment (Eyde, 2000).

The importance of debriefing and removing misconceptions cannot be overemphasized. In a marketing study, participants had been told that a fast-food chain had been rumored to be using red-worm meat in its hamburgers. At the conclusion of the study, one group of participants received a conventional debriefing but continued to hold significantly less positive attitude toward the fast-food chain. The other group received explicit debriefing and did not hold a statistically different attitude toward the chain than the control group, which had not been told of the red-worm rumor (Misra, 1992). Misconceptions can linger for an indefinite period of time, possibly forever, and affect former participants in a variety of ways, even without conscious awareness.

Animal Research

More than 90% of animal research involves the use of rodents (rats and mice) or birds (usually pigeons); use of dogs and cats by experimenters is rare (Knapp & VandeCreek, 2006). Supporters of animal research argue

that humans benefit from animal experimentation and that animals do not experience discomfort or restriction of freedom in the same way as humans. Detractors argue that there is limited generalizability from animal research to humans, that animals do experience pain and suffering, that they have rights that should be protected, and that investigators have a duty to protect those rights (Beauchamp, 1997).

Although the first Ethics Code (1953a) contained no specific standards on animal welfare, it referred readers to a separate document, *Rules Regarding Animals*, that was published by the APA Committee on Precautions in Animal Experimentation (1949). The 2002 Ethics Code presents seven standards for the humane care and use of animals: (a) investigators must comply with federal, state, and local laws when acquiring, caring for, maintaining, using, and disposing of animals; (b) investigators must be trained in research methods and supervise all procedures, ensuring comfort, health, and humane treatment; (c) investigators must ensure adequate instruction to those under their supervision in the proper maintenance and handling of the species being used; (d) investigators must minimize discomfort, infection, illness, and pain; (e) investigators must never use a procedure subjecting animals to pain, stress, or privation unless there are no alternative procedures that address the same hypothesis and the goal is justified by its prospective scientific, educational, or applied value (see previous standards); (f) when performing surgical procedures, investigators must always use appropriate anesthesia and follow procedures to avoid infection and minimize pain during and after surgery; and (g) when terminating an animal's life, investigators must proceed rapidly, attempting to minimize pain, in accordance with accepted procedures. The APA Board of Scientific Affairs' Committee on Animal Research and Ethics has also produced videos and other educational materials, among them *Guidelines for Ethical Conduct in the Care and Use of Animals* (1996) (http://www.apa.org/science/leadership/care/guidelines.aspx). Institutions that support animal research have an institutional animal care and use committee that oversees the conduct of all researchers and assistants who maintain, use, and care for the animals.

Federal laws constitute another resource for animal experimenters. Regulations of the U.S. Department of Agriculture were signed into law as The Animal Welfare Act in 1966, with the most recent amendment in 2007, and this law describes specific responsibilities and obligations of researchers for the humane treatment of the animals they use (Animal Welfare Act, 1996, amended 2007). And the Institute of Laboratory Animal Resources, Commission on Life Sciences, and the National Research Council, under the auspices of the National Academy of Sciences, published the *Guide for the Care and Use of Laboratory Animals* (1996). In addition, there is a private nonprofit organization, the American Association for the Accreditation of Laboratory Animal Care, that educates researchers about the minimum legal requirements and provides advice to researchers when needed (http://www.aaalac.org/about/index.cfm).

Reporting Research Results

Fair and accurate reporting of scientific research has been an ethical duty since the very first Ethics Code in 1953, which required psychologists interpreting the science of psychology to do so "fairly and accurately," without "exaggeration, sensationalism, superficiality, and premature reporting of new developments." Since then a number of ethical rules have been developed to guide investigators reporting on their research in individual or collaborative efforts. Original research is generally reported first in professional journals and later released to the media—Internet, radio or television, newspapers, and popular magazines—as journalists become aware of innovative studies.[1] The primary directive in reporting research results is to do so accurately, avoiding deceptive or false statements. Psychologists must never fabricate data—that is, they must never change the reported sample sizes, delete data that did not support the research hypothesis, misrepresent the nature of the independent variables, falsify participants' ratings or reactions, lie about the characteristics of the participants, make false claims about the methodology of the investigation (report on interventions that never occurred, claim that randomized trials occurred when in fact they did not), alter statistical findings (levels of statistical significance, correlation coefficients, analysis of variance findings, chi square results), or misrepresent or distort any aspect of the protocol design or implementation. Also, if they discover significant errors in their published results, they must take reasonable steps to correct them, generally in the form of a printed correction, retraction, erratum, or other means.

One safeguard for preserving the integrity of authors is the peer-monitoring system whereby investigators are obliged to release their research data for verification by others. Researchers must release their data after the results have been published to any competent professional who wishes to verify the substantive claims by reanalyzing the data. However, they may not then use the data for research of their own unless consent is secured from the original investigator.

The Office of Research Integrity (ORI), a branch of the U.S. Department of Health and Human Services (http://ori.hhs.gov), publishes a quarterly newsletter reporting on scientific misconduct at institutions where federally funded research has occurred. Examples from this publication follow; they are taken from the 2006 ORI Annual Report:

> Based on the report of an investigation conducted by the University of Wisconsin-Madison (UWM) and additional analysis conducted

[1]Research reports and abstracts of upcoming journal articles may be periodically released to the Internet as a part of publicity for upcoming journals, prior to actual publication of the article (A. Barabasz, personal communication, August 3, 2009).

> by the Office of Research Integrity in its oversight review, PHS found that Ms. _____, former graduate student, UWM, engaged in research misconduct by fabricating data in thirty-nine (39) questionnaires of sibling human subjects associated with an autism study. The research was supported by National Institute on Aging (NIA), National Institutes of Health (HIN), grant# _____.

It is particularly sad when a graduate student begins a career in psychology by falsifying research for her doctoral degree, as in the following case.

> Based on an investigation conducted by the University of California at Los Angeles (UCLA) and additional analysis conducted by the Office of Research Integrity (ORI) in its oversight review, ORI found that Ms. _____, former graduate student, Department of Psychology, UCLA, engaged in research misconduct by falsifying or fabricating data and statistical results for up to nine pilot studies on the impact of vulnerability on decision-making from the fall 2000 to winter 2002 as a basis for her doctoral thesis research. The falsified or fabricated data were included in a manuscript submitted to *Psychological Science,* in National Institutes of Mental Health (NIMH), National Institutes of Health (NIH), grant application #_____, and in NIMH, NIH, pre-doctoral training grant #_____.

It is noteworthy that even students and researchers carrying out studies at excellent academic institutions still commit research fraud, sometimes falling prey to publication pressures that are a common aspect of academia, as in this excerpt from a 1999 ORI Newsletter.

> ORI found that Ms. _____, a former research assistant, Department of Psychiatry at the UIC [University of Illinois at Chicago], engaged in scientific misconduct in clinical research supported by a grant from NIMH by fabricating data in the records of 41 patients, including dates on which she claimed to have conducted interviews in certain clinics, fabricating patient consent forms and questionnaires from patients participating in the project; and submitting false information in "Study Daily Logs" that recorded each day's events. For 3 years beginning December 7, 1998, Ms. _____ is prohibited from serving in any advisory capacity to the PHS, and her participation any PHS-funded research is subject to supervision requirements.

Students are not the only ones who can run afoul of the rules. In 2000, a promising young psychology professor from Harvard University published a research paper in the *Personality and Social Psychology Bulletin* that was based on data that she had fabricated. The fraud was revealed when a colleague asked to see her original data, and she admitted to having used invalid data. The professor's lamentable actions resulted in, among other things, being excluded from U.S. government agency grants,

contracts, and cooperative agreements for 5 years (http://grants.nih.gov/grants/guide/notice-files/NOT-OD-02-020.html).

PLAGIARISM AND DUPLICATE PUBLICATION OF DATA

Psychologists must never present portions of another's work or data as their own. Whether using a verbatim quote or paraphrasing another, whether published or unpublished, authors must always acknowledge their sources, including personal communications such as discussions, correspondence, e-mail, or other significant contributing bases for their remarks. Even plagiarizing from oneself is considered unethical. This occurs if an author publishes his original data as seminal research on more than one occasion, such as publishing one's research about using positron emission tomography technology in developing a treatment protocol for those with Tourette's disorder in a psychological journal in 2009 and then again in a psychiatry or neurology journal in 2010 without citing the original publication.

Plagiarism is not restricted to those doing research. Clinicians who do psychological assessment may send a personality test such as the Millon Clinical Multiaxial Inventory-III to a computerized scoring service and receive a narrative report in return. It may be common practice for a psychologist performing an evaluation to include the results of the scoring and even copy complete sentences or paragraphs of the computerized printout for use in the psychological report; however the psychologist must still cite the source, such as Consulting Psychologists Press or Psychological Assessment Resources. These materials are clearly labeled "copyrighted," and plagiarizing them is not only unethical but also illegal under federal law and extending to citizens in most countries of the world.[2]

A relatively recent form of plagiarism involves academic fraud, a student's use of online resources, or "paper mills" for meeting course requirements. Obviously these sources would never be cited, and additional ethical rules beyond avoiding plagiarizing would also be involved.

PUBLICATION CREDIT: A GRAY AREA

Attributing authorship in a joint venture is usually decided in advance and based on the relative scientific or professional contributions of the individuals involved, regardless of their status (e.g., professor, graduate student). Minor contributions to the research or writing are acknowledged in other ways, such as in footnotes or an introductory section.

[2]Common answers to copyright questions are available online at http://www.copyright.gov/help/faq/.

Usually a student is listed as the primary author in a multiple-authored article if it is substantially based on the student's doctoral dissertation.

However, ambiguities sometimes present themselves, such as when a friendly, informal discussion between professionals about psychological topics results in one of the parties deciding to proceed with developing a research hypothesis and designing a protocol for examining the question. Should the colleague in the original discussion then be cited, footnoted, or recognized in some other way when the article is published in a professional journal? Remedies for this sort of dilemma can usually be rectified by consulting with the colleague early on and seeking his or her input on resolving it. Problems can also occur when an initial agreement for collaborative work is not honored and disputes for principal authorship result.

> Dr. Banner, the chairman of a psychology department, and Dr. Finnish agreed to principal and junior authorship in collaborating on a study examining the effects of a specific group intervention at a veterans hospital for young women whose husbands had been lost in action in Iraq and Afghanistan. After initially devoting much time to designing the protocol, Dr. Banner became involved in other departmental administrative and teaching tasks and could not contribute to the project in the way he had hoped. Dr. Finnish followed through by training three group facilitators, hiring a clerical worker to help with the logistics, and training raters to evaluate participants' journal entries.
>
> At the end of the data collection, Dr. Banner found time to help with the statistical analysis of the data and to write the review of the literature section also. He still expected that he would be listed as the senior author and was surprised when Dr. Finnish asserted that because he had done far more work on virtually every phase of the project, he felt that he deserved principal authorship. The two had never discussed the change in their respective roles during the previous year, and each held a private assumption that proved to be unshared by the other.

When changes in work responsibilities or functional rules develop in the course of a collaborative effort, which can readily happen, it is important for all parties to be open-minded about reevaluating authorship credit and discuss suitable alternatives before the conclusion of the project is reached.

Confidentiality in Peer Review

Psychologists who review material that is submitted for presentation, publication, grant, or research proposal review must preserve the confidentiality and proprietary rights of the author. They must not only

treat as confidential the substance and content of material but also refrain from using it in any way. Discussing or revealing the contents with anyone not specifically involved with the review process is prohibited, as is using or discussing the information with colleagues, students, the media, over the Internet, or in any other personal or professional forum.

It is fair to say that the science of psychology and most of what psychologists do in delivering their services to consumers rests solidly on research that ultimately is published in peer-reviewed professional journals and books. And that very research serves the profession and humanity well when it is carried out in an unhurried, well-planned manner that is consistent with professional, ethical, and legal guidelines for the benefit of all. Students, trainees, and their teachers and mentors depend on the integrity of those doing research in learning and teaching applied psychology. How ethical awareness of teachers and trainers impacts on students of all ages, interns and residents, and even senior clinicians is discussed in Chapter 12.