

Hedgehogs, Foxes, and the Evolving Social Contract in Psychological Science: Ethical Challenges and Methodological Opportunities

Ralph L. Rosnow
Temple University

This article is addressed primarily to new researchers who feel burdened by an expanding body of ethical rules and regulations. Moral dilemmas proliferate as researchers try to strike a balance between ethical accountability and the technical demands of scientific practices. The challenge is to expand existing knowledge and abide by an evolving social contract that is responsive to current ethical sensitivities. This article illustrates dilemmas faced by researchers, examines some of the events leading up to the present situation, and shows how researchers might exploit this situation so that science and society can both benefit.

Investigators in even the most benign areas of psychological research must routinely overcome the hurdles of a variety of ethical strictures. It is impossible to ignore such dictates, or to focus on methodological and theoretical requirements dismissing possible ethical implications. Indeed, many seminal studies in psychology can no longer be replicated because of obstacles imposed by daunting arrays of ethical considerations, bureaucracies, formalities, and legalities that did not exist in their present form a generation or more ago (Bersoff, 1995; Fisher & Tryon, 1990; Kimmel, 1996; Koocher & Keith-Spiegel, 1990; Rosnow, Rotheram-Borus, Ceci, Blanck, & Koocher, 1993; Scott-Jones & Rosnow, in press; Sieber, 1982a, 1982b). Thinking back to the 1950s and 1960s, the heyday of experimental social psychology, it would be impossible to get some of those classic designs approved by a re-

view committee. Yet, society and our science have benefited from the accrued wisdom of those findings.

A further irony is that researchers are held to a higher standard of ethical accountability than that expected of many designated and self-appointed guardians of human rights. For example, ethical guidelines in psychology circumscribe the use of deception, and yet deception by omission (passive deception) and by commission (active deception) are common in our society. Lawyers manipulate the truth in court on behalf of their clients, and police investigators use entrapment procedures to gain the knowledge they seek (Bok, 1978, 1984). Saxe (1991) described how the CBS-TV investigative news program "60 Minutes" used deception to expose the deficiencies of the polygraph test. Ethical guidelines in psychology also instruct researchers to do beneficent research, an objective that can be obstructed by the very process of an ethical evaluation.

This article is primarily addressed to new researchers, who may feel lost in a maze of cumbersome rules and regulations that reflect the evolving social contract between science and society. Even experienced researchers often find themselves caught between the Scylla of methodological and theoretical requirements and the Charybdis of ethical dictates and moral sensitivities. To practice scientific calling in the years ahead, researchers need a forward-looking orientation that can anticipate ethical and technical conflicts, and a constructive, problem-solving approach when con-

This article is based on an invited presentation at the 103rd Annual Convention of the American Psychological Association, New York, August 11, 1995, in a symposium chaired by Randall Rule and sponsored by the Science Directorate of the APA. I thank Diane Scott-Jones, Bruce Overmier, and Robert Rosenthal for their instructive comments on an earlier draft, and I thank Temple University for the continuous support that I have received through the Thaddeus Bolton Professorship.

Correspondence concerning this article should be addressed to Ralph L. Rosnow, Department of Psychology, Temple University, Philadelphia, Pennsylvania 19122.

fronted with obstacles and dilemmas. I will touch on some of the events in psychology leading up to the present situation and sketch what I perceive to be a constantly changing montage of issues and dilemmas. Picking up a thread from previous work (e.g., Blanck, Bellack, Rosnow, Rotheram-Borus, & Schooler, 1992; Campbell, 1969; Lee, 1993; Melton, Levine, Koocher, Rosenthal, & Thompson, 1988; Rosenthal, 1994; Rosenthal & Rosnow, 1975; Rosnow, 1981; Stanley, Sieber, & Melton, 1987), I will suggest how one might exploit the emergence of ethical constraints not only to improve the ethical merits of our research but to increase knowledge. Thus the purpose of this article is not to imply that researchers try to circumvent review boards but instead to suggest that, insofar as possible, researchers respond to ethical directives as methodological challenges that might stimulate new ideas to help advance the cause of psychological science.

To illustrate, as stipulated by the Child Abuse Prevention and Treatment and Adoption Reform Act (1974) and its revisions and amendments (Pub. L. No. 102-295), each state must pass laws to require the reporting of child abuse and neglect. The nature and wording of the statutes is left to the discretion of the states, which have increasingly expanded the lists of individuals who are obligated to report suspected cases (Liss, 1994). As a consequence, developmental psychologists working in the area of intervention research are often pressed to report child abuse. Researchers who are actively investigating abuse may be torn between reporting a suspected culprit and losing a valuable subject in the prospective study (neither a happy nor an admirable thought), or they may feel they do not have the moral right to report a parent on the basis of the evidence they have (H. Sandler, personal communication, November 25, 1996). It is also possible that charges of abuse will not be proven, but this possibility does not excuse researchers from their legal responsibilities (Liss, 1994). If researchers lack the training and acumen to do this job, this situation can lead to the overreporting of suspected cases (Scott-Jones, 1994). These are obviously knotty problems, and they have stimulated ideas about the need for specialized training opportunities for researchers, new reporting methods in research protocols, the restructuring of ethical guidelines in populations at risk, and research to assess the predictive power and diagnostic validity of relevant assessment tools (e.g., Fisher, 1994; Scarr, 1994; Scott-Jones, 1994).

When Is Consent Informed?

The term *ethics*, as generally used in psychology, refers to the values by which the conduct of individual practitioners and investigators is morally evaluated. Applied to the research situation, ethical guidelines enable researchers to judge the morality of current scientific conduct regardless of the investigator as long as the research situation is similar. Researchers do not impose today's ethical sensitivities on research conducted in the past under a different set of ethical sensitivities. Ethical guidelines also cannot be expected to anticipate every possible case but rather provide a basis for evaluating, rectifying, and avoiding moral transgressions. Collectively, the ethical guidelines constitute an idealized, evolving "social contract" of do's and don'ts, to which each generation of psychological researchers is expected to subscribe as a moral prerequisite of conducting any empirical investigation. Broadly speaking, researchers' moral agreement in psychological science can be described as the responsibility not to do psychological or physical harm to the participants and to do beneficent research in a way that is likely to produce valid results.

The problem is that, even when acting under the best moral intentions, researchers can inadvertently transgress. For example, researchers are all familiar with the ethical ideal known as informed consent—one of the "contractual" obligations when research is done with human participants. The principle of informed consent was predicated on the assumption that participants were entitled to know what they were getting into. However, as a consequence of increased scrutiny by regulatory committees, the disclosure procedure has become so detailed and cumbersome that it may defeat the purpose for which informed consent was intended (Imber et al., 1986). Mann (1994) discovered that many respondents mistakenly believed they had relinquished their legal right to sue the researcher for negligence by signing an informed consent agreement. But the right to sue is protected by federal regulations on the use of human participants (Department of Health and Human Services, 1983).

As Melton et al. (1988) counseled, it is essential that researchers go beyond the mere ritualized presentation of the consent form. But the question is how does one know when consent is "informed"? Investigators have begun to exploit the challenge to identify the limitations of informed consent, such as when respondents are incapacitated or too young to grasp the implications of disclosures. Research by Susman, Dorn, and Fletcher (1992; Dorn, Susman, & Fletcher,

1995) is illustrative of studies that have probed the circumstances in which prospective participants comprehend the implications of such disclosures. Susman et al. found that the respondent's age, anxiety, cognitive development, and life philosophy correlated with children's ability to understand the consent process and the role of a participant in pediatric research. Younger children, Susman et al. observed, struggled with abstract details and more easily grasped concrete facts about their participation in the research. Findings such as these have substantive as well as moral implications, because they can strengthen theoretical understanding and also help to build a science that is responsive to ethical sensitivities.

Ethics and Artifacts in Collision

The fact is, of course, that researchers always "tread on thin moral ice," as Atwell (1981, p. 89) once put it. Another perennial problem of widespread concern is that, even in the most innocent studies, complying with the disclosure requirement can present a dilemma for researchers concerned about demand characteristics (Orne, 1962, 1969) and possible artifacts (e.g., Adair, 1973; Campbell, 1969; Gardner, 1978; Gniech, 1976; Jung, 1971; Kimmel, 1996; Orne, 1962, 1969; Rosenthal & Rosnow, 1975; Rosnow, 1981; Schuler, 1980/1982; Silverman, 1977; Suls & Rosnow, 1981). Orne (1962) conceptualized demand characteristics as uncontrolled task-orienting cues that guide the participants' perceptions about the purpose of an experiment and what is expected of them. *Artifacts*, as I specifically use the term here, refer primarily to the biasing effects of uncontrolled aspects of the research situation that are due to the participants' responsiveness to demand characteristics (for broader definitions, see Rosenthal & Rosnow, 1969; Rosnow, 1971, 1977).

For example, a classic paper by Resnick and Schwartz (1973) raised the question of whether informed consent in some studies might unwittingly lead to certain reverse artifacts as a result of triggering "paranoid ideation in otherwise nonsuspicious subjects" (p. 137). Resnick and Schwartz used a traditional verbal conditioning procedure—the Taffel (1955) task—in an experiment in which they manipulated the ethical standard of informed consent. The participants were presented with a sequence of cards, one card at a time, each of which showed a specific verb and the pronouns *I*, *you*, *we*, *he*, *she*, *they*. The instructions were to use the verb shown on the card to

compose a sentence beginning with any of the pronouns. The idea was to reinforce the participants for choosing *I* or *we*; the experimenter uttered "good" or "okay" each time either *I* or *we* was selected by the participant. Before the study began, half of the prospective participants were told the nature of the conditioning procedure in strict adherence with proposed informed consent guidelines; the control participants were not given this information but were run in the way the study had been conducted before the era of informed consent.

The principal finding in this study was that the control participants conditioned as expected but the fully informed participants showed an unexpected reversal in their pattern of conditioning behavior. Using postexperimental questionnaires, Resnick and Schwartz (1973) discovered that many of the fully informed participants, after having been told so much about the study, carried on a train of thought in which they had questioned the experimenter's "true" hypothesis. One such participant stated that he "had wanted to play it cool; and to give the impression that the experimenter's reinforcements were having no effect" (p. 138). When told that his use of the two reinforced pronouns had decreased by more than half from the first 20 trials to the last 20, this person laughed and said, "I was afraid I would overdo it" (p. 138). Not only was it distressing to Resnick and Schwartz that their fully informed participants were distrustful, but it was unclear what was happening in, as these authors put it, "a room full of mirrors where objective reality and its perception blend, and thereby become metaphysical" (Resnick & Schwartz, 1973, p. 138; see also Rosenzweig, 1933; Stricker, 1967). The results seemed to imply that standard textbook principles of verbal learning would be backwards if all previous studies in this area had strictly adhered with fully informed consent.

This study raised a red flag signaling that full disclosure can sometimes be an impediment to the pursuit of knowledge. Another example is that in drug trials using double-blind placebo-control designs and complying with full disclosure would imply that the potential participants be told they could be in the condition that will be deprived of the possible benefits of the experimental medicine (Levine, 1987; Melton et al., 1988). Some participants might surreptitiously share doses in the hope that this would increase the likelihood that each of them would receive at least some access to the experimental medicine. Can researchers modify the design, not deprive the control

participants of needed treatment, and comply with the full disclosure rule? If there is an alternative treatment that is better than a placebo, researchers could give the control group this treatment rather than a placebo. Researchers avoid the ethical problem of depriving the control patients of any effective treatment, keep the design double-blind, and refocus on comparisons of both practical and scientific importance (e.g., efficacy, relative cost, and side effects). Incidentally, the conceptualization of the placebo as an “inactive” control in psychotherapy research is a subject of some controversy (Imber et al., 1986; Parloff, 1986).

The “Ten Commandments” of the American Psychological Association (APA)

To put this latest crisis in psychology into historical perspective, we can go back to the 1960s. During that period the American public had been whipped into a frenzy of anxiety by published reports of domestic wiretapping and other clandestine activities by the federal government. Seemingly caught up in the temper of the times, leading psychologists voiced concerns about the status of human values in psychological research. For example, Jourard (1967, 1968) called for more humanistic research methodology, and Kelman (1967, 1968, 1972, 1977) expressed his disillusionment over the widespread and unquestioned exploitation of ostensibly powerless subjects with abusive deceptions. In Kelman’s (1968) words,

What concerns me most is not so much that deception is used, but precisely that it is used without question. . . . I sometimes feel that we are training a generation of students who do not know that there is any other way of doing experiments in our field, who feel that deception is as much *de rigueur* as significance at the .05 level. Too often deception is used not as a last resort, but as a matter of course. Our attitude seems to be that if you can deceive, why tell the truth? (p. 211)

It did, in fact, appear that the use and level of deception had escalated in personality and social psychology (e.g., Gross & Fleming, 1982; Menges, 1973; Rubin, 1974; Silverman, 1977). Going back to Asch’s seminal studies of conformity in the 1950s, confederates had been required to deceive the participants by keeping a straight face while making ridiculous perceptual judgments. A decade later, Milgram’s classic work on obedience became the lightning rod for a heated debate about the morality of deception (e.g., Baumrind, 1964; for retrospect, see also Milgram, 1975; Miller, 1986). In fact, Milgram was sensitive to

the safety and well-being of his participants, including showing that there were no lasting undue consequences for them. But the use of deception also raised metaphysical concerns: Brown (1965) noted, “The trouble with deception, morality aside, which it usually is, is that one cannot be sure who is being deceived” (p. 580). Interestingly, a subsequent survey implied that psychologists might be more concerned about irresponsible science than their typical participants were (Sullivan & Deiker, 1973).

Still, alleged abuses in psychology were quite tame compared with more shocking events elsewhere. In the area of biomedical research, flagrant abuses—some resulting in the death of human participants—were uncovered (Beecher, 1966, 1970). A notorious case involved a Public Health Service study, conducted from 1932 to 1972, of the course of syphilis in more than 400 low-income African American men in Tuskegee, Alabama (Jones, 1993). The participants were not informed they had syphilis, nor were they given penicillin when it was discovered in 1943. Although given free health care and a free annual medical examination, they were told they would be dropped from the study if they sought treatment elsewhere. As the disease progressed in its predictable course without treatment, they experienced damage to the skeletal, cardiovascular, and central nervous systems and, in some cases, death.

The details of the Tuskegee study were not made public until 1972. But already in the 1960s, there were demands for reforms as issues of scientific misconduct were discussed in newspapers, magazines, and congressional hearings (Kelman, 1968). For some time the APA, in its code of professional ethics, had addressed issues such as the confidentiality of research data. There was a call for the codification of ethical practices in research. In psychology, Smith (1967, 1969) argued that our science had become “big business” because of financial support from the federal government and researchers were therefore answerable to the public regarding the methods used in studying other people.

Spurred on by impassioned spokespersons, the APA in 1966 created a task force—called the Cook Commission, after Stuart W. Cook, its chair—which was assigned to write a code of ethics for human participant research. Out of these deliberations came a 1971 draft report (Cook et al., 1971), which is what had prompted Resnick and Schwartz (1973) to conduct their study described previously. A revised report appeared in 1972 (Cook et al., 1972), listing 10 prin-

ciples that became popularly known as the 10 commandments of psychological research. The complete code was formally adopted by the APA in 1972, re-issued in its present form a decade later (APA, 1982), and is in the process of being rewritten by a joint task force of the APA and the American Psychological Society.

The APA code of research ethics was formulated with the aim of instructing psychological researchers of their moral responsibilities in studies with human participants. It was also designed to help us decide what aspects of a proposed study might pose ethical risks, and how to choose an ethical strategy for addressing such problems. For example, the code did not prohibit deception in all research studies but implied when a deception might be permissible and noted the attendant ethical responsibilities of researchers who wanted to use a deception. In fact, by the time of the first adoption of the APA research code, a variety of deceptions had slipped into researchers' methodological arsenals (Arellano-Galdames, 1972; Gross & Fleming, 1982). Active deceptions included misrepresenting the purpose of the research or the identity of the researchers, falsely promising something to participants, misrepresenting the equipment or procedures, and using placebos, pseudo-subjects, and secret treatments. Passive deceptions included disguised experiments in natural settings, observing people in a public setting without telling them they were being studied, secretly recording potentially embarrassing behavior, and using projective tests and other measurement techniques without disclosing their purpose to the participants.

The APA code insisted that the decision to use a deception had to be fully justified and plausible alternatives ruled out. Seizing on the methodological opportunity of the ethical challenge, Suls and Rosnow (1981) borrowed an idea of Orne's (1962, 1969) to propose that prospective participants (called quasi-controls by Orne) help us decide what level of deception to use, if any. *Quasi-controls*, as defined by Orne, were individuals who reflected on the research and speculated on ways in which it might influence their own and research participants' behavior. Suls and Rosnow proposed presenting quasi-controls with the simulation of a less deceptive treatment and asking how they would react to it versus the simulation of a more deceptive treatment. (The piloting is an "experiment" in itself and would require prior approval by an ethics committee.) Presumably, if no differences were revealed between the "treatments," it would imply

that the less deceptive design could be effectively used with the actual participants. This methodological fillip would elevate the role of the prospective participant to that of a co-investigator in the search for knowledge (see also Fisher & Fyrberg, 1994).

The APA ethics code also required researchers to debrief the participants once the study was over. The purpose of debriefing was to remove misconceptions and anxieties that participants may have had about the research and to leave them with a sense of dignity, knowledge, and a perception of time not wasted (Harris, 1988). Debriefing can also provide an opportunity to deepen an understanding of what transpired in the study. Researchers can, as Jones and Gerard (1967) suggested, explore what each participant thought about being in the study, thereby providing phenomenological context in which to interpret the results and possible leads for further investigation. In recent years, this postexperimental detective work has been used in clinical trials to confirm the experimental outcome (Blanck et al., 1992).

Expanding on this idea, Gurman (1994) argued that researchers should not only debrief people who participated in the research, but should also brief those people not accepted for participation for whatever reasons and "are left to ponder the significance of their rejection and the implications of the issues raised" (p. 139). New researchers who already feel burdened by the demands of ethical accountability may find Gurman's idea unsettling. However, it affords an opportunity to expand one's understanding of the expectations role of prospective participants.

Not a Cannon but a Popgun

Previously, I mentioned the survey that showed psychologists to be more concerned about ethical sensitivities than were their typical participants (Sullivan & Deiker, 1973). However not every psychologist felt the urgent need to codify such sensitivities. Responding to the draft code, Resnick and Schwartz (1973) called for "more understanding of its ramifications concerning the nature of the knowledge it permits us" (p. 138) and advised caution rather than pronouncements. Gergen (1973) conceded that there were isolated problems, but warned of the possibility of a dangerous trade-off of scientific advances for excessive ethical constraints:

Most of us have encountered studies that arouse moral indignation. We do not wish to see such research carried out in the profession. However, the important question is

whether the principles we establish to prevent these few experiments from being conducted may not obviate the vast majority of contemporary research. We may be mounting a very dangerous cannon to shoot a mouse. (p. 908)

What Gergen (1973) characterized as a "dangerous cannon" has come to seem more like a popgun, particularly in light of the APA's lack of enforcement tools. A dramatic change occurred when the review process was set in motion in 1974 by the National Research Act (Pub. L. No. 93-348), which also created the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. By a series of federal directives (e.g., Department of Health, Education, and Welfare, 1978), institutions applying for grant support were legally required to create institutional review boards (IRBs) to evaluate grant submissions. If a study were classified by the IRB as "at risk," then it required the use of specific safeguards. These safeguards included giving the participants an adequate explanation of the procedures to be used, informing them of the potential discomforts and other risks, allowing them to ask the researcher any questions they wished, and making sure they understood their prerogative to withdraw from the study at any time without penalty. The federal dictates were not much different from the guidelines formulated by the APA's Cook Commission, except that they were now enforceable.

Only a few years after they were created, IRBs had already become a source of consternation to many researchers, who felt their research "had been impeded in a way that was not balanced by the benefits of the review process" (Gray & Cook, 1980, p. 40). In recent years, the sphere of responsibility of IRBs has expanded as a result of a proliferation of self-imposed safeguards, legally mandated constraints, pressures by advocacy groups, and methodological innovations (Rosnow et al., 1993). The responsibility of IRBs is no longer limited to the evaluation of grant submissions but can encompass any proposed study in an institution that receives federal funding. Studies at "minimal risk" (i.e., acceptable risk) are authorized for an expedited review, but even the most innocent study can touch a nerve in some designated regulatory body. Not many years ago, IRBs were seen as the guardians of informed consent, confidentiality, and the safety and autonomy of the research participants. Today, some IRBs, particularly in medical schools, routinely evaluate technical and statistical aspects of the research (Rosnow et al., 1993).

As if the pursuit of psychological science were not already complicated, there are also state laws that limit the type of information and degree of acceptable risk to the participants, implying that some IRBs are legally bound to impose stricter standards (Rosnow et al., 1993). It is apparently not uncommon that a research protocol approved without alterations at one institution will be substantially modified or even rejected by an IRB at another participating institution (Ceci, Peters, & Plotkin, 1985; Williams, 1984).

This problem of variability in decision making is compounded by the subjectivity of an ethical review and the sensitivities of IRB members. As Ceci et al. (1985) noted, getting a socially sensitive proposal approved can sometimes be a matter of the luck of drawing a particular group of IRB members whose values just happen to be congruent with the values of the researchers. Kimmel (1991) has argued that "ethical decisions, in part, may be linked to identifiable background characteristics of the individual(s) who must make the decisions" (p. 786), which only reinforces our suspicion that different IRBs may be predictably biased. People's sensitivities can also change. I have heard of cases for expedited review in which the review committee was maddeningly slow to approve a replication of a minimal risk study that had been conducted without incident and originally approved by the same committee.

Forewarned is Forearmed

How can researchers forearm themselves against a capricious or overly cautious ethical review? There is no easy answer at this time, but it is clear that we need to sharpen our understanding of the review process, including problems associated with ethical cost-benefit decisions (e.g., Brooks-Gunn & Rotheram-Borus, 1994; Diener & Crandall, 1978; Kimmel, 1996; Rosnow et al., 1993; Wilcox & Gardner, 1993). Figure 1 shows a decision-plane model described by Rosenthal and Rosnow (1984) to represent the cost-benefit process. In theory, studies falling at A will not be approved because the costs are high and the benefits are low; studies falling at D will be approved because the costs are low and the benefits are high. Some proposals cannot be easily decided because the costs and benefits are in equal opposition (B-C axis). In the case of low-risk, low-benefit research, an IRB might be reluctant to approve a study that is harmless but is likely to yield little benefit. The model underscores the importance of honestly maximizing the benefits and minimizing the costs in our protocols.

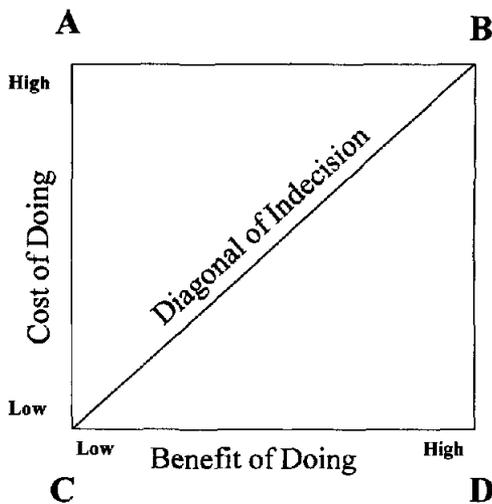


Figure 1. A decision-plane model representing the costs and benefits of research studies.

However, as many researchers know from personal experience, the review process often ignores benefits and merely uses the *Y* axis value for the criterion. Even when benefits are considered, the model is insufficient because it ignores the costs of research not done. By focusing only on the act of doing research and ignoring the act of not doing research, IRBs seemingly hold a less rigorous standard of accountability than that required of researchers (Haywood, 1976; Rosenthal & Rosnow, 1984). Researchers often complain of their frustration at having research with plausible societal benefits impeded by the review process or by political interference (Brooks-Gunn & Rotheram-Borus, 1994). A recent case involved a sexual survey of adolescents; the research was terminated prematurely on the grounds that it violated community norms, depriving the community of essential data to address health problems of general concern (Wilcox & Gardner, 1993). Another example would be sending back a proposal for research that could conceivably find a way of preventing AIDS, on the grounds that its methodology did not ensure the privacy of the participants. Similarly, rejecting a socio-psychological investigation that might help to reduce violence or prejudice, but involved a disguised experiment in a natural setting (i.e., a deception), would not solve the ethical problem but has only traded one moral issue for another.

An opportunistic mindset encourages researchers to look for ways to educate IRBs. In a parting statement before it was terminated in a cost-cutting campaign, the APA's Committee on Standards in Research pro-

posed the development of a strategy for sensitizing IRBs to the costs of impeding important but socially sensitive and ethically ambiguous studies (Rosnow et al., 1993). Atwell (1981), the philosopher who spoke of treading on "thin moral ice," also wrote that "researchers are constantly in danger of violating someone's basic rights, if only the right of privacy" (p. 89). It is a point that IRBs do not always seem to grasp, and they need to be so educated if our destiny as a science is to be fulfilled. Borrowing a role-play strategy developed to teach students the complexities of ethical accountability (Rosnow, 1990; Strohmets & Skleder, 1992), we might develop a similar strategy to instruct IRBs about the costs of sensitive research not done, and the costs to science and society of not replicating experiments that have generated important findings. We must also raise the consciousness of IRB members about what statistical significance does and does not tell us (cf. Cohen, 1990, 1994; Kirk, 1996; Loftus, 1996; Rosnow & Rosenthal, 1989; Schmidt, 1996). Ceci et al. (1985) and Scott-Jones (1994) have argued that we also need speedy access to appeals when IRBs are subject to political pressures that restricted their judgments.

Opportunity Knocks More Than Once

My point is that we might begin to perceive a multitude of opportunities in the present situation. For example, ethical codes for psychological research in the United States and Europe specify some variation of the following principles: (a) avoid physical harm, (b) avoid psychological harm, and (c) keep the data confidential (Kimmel, 1996; Schuler, 1980/1982). Principles 1 and 2 were derived from the Nuremberg Code of 1946–1949, developed in conjunction with expert testimony against Nazi doctors at the Nuremberg Military Tribunal after World War II (Beecher, 1970). Principle 3 is justified on the basis of three claims: (a) as professionals we have a right to keep disclosures secret; (b) fairness requires respect for privacy; and (c) more credible or valid disclosures are apt to result when researchers promise to keep disclosures confidential (Bok, 1978).

Confidentiality in research is an issue that cries out for further empirical, meta-analytic, and legal examination. For example, confidentiality has not been tested in the courts, and the "duty to protect" needs legal clarification (Appelbaum & Rosenbaum, 1989). We also need clarification of the limitations of certificates of confidentiality that are intended to provide

researchers with immunity from legally compelled disclosures of research records (Blanck et al., 1992; Hoagwood, 1994). There is meta-analytic support for the assumption that confidentiality can encourage more open or honest disclosures (Singer, von Thurn, & Miller, 1995), but we need to learn more about the moderator variables involved.

Another illustration of the multiple benefits that ethical opportunities can accrue to research practices has been implied by Rosenthal (1994). He examined a number of technical issues that had not been previously viewed within the context of ethics, and urged a kind of "waste not, want not" ethos. In particular, he took the position that participants are precious resources and should not be squandered in poorly designed or weakly analyzed studies. Waste occurs when researchers let go of their hypotheses without ever realizing it, such as when they do not have a clear understanding of what they predicted, or they conclude there was "no effect" because they found $p > .05$, or they use omnibus significance tests even though a focused test would be appropriate and more informative (Rosnow & Rosenthal, 1996b). Cohen (1994) wisely advised that we consult confidence intervals rather than make razor's edge decisions on the basis of some arbitrary p value. Rosenthal and Rubin (1994) devised a handy statistic—the counternull value of the effect size—for assessing the possibility of mistakenly accepted null hypotheses. Rosenthal and I have described simple reclamation tools for analyzing the reported data in journal articles and reaching beyond people's published conclusions (Rosnow & Rosenthal, 1996a); industrious graduate students using these methods will find our journal archives to be a Davy Jones's locker of opportunities lost because of the use of diffuse and low power statistical tools.

Another example of the opportunistic mindset harks back to our extensive investigation, over 20 years ago, of the nature and circumstances of volunteering for research participation (Rosenthal & Rosnow, 1975). Thirty years earlier, McNemar (1946) had cautioned that the existing science of human behavior was largely predicated on the behavior of college students in introductory classes—a situation, incidentally, that apparently has not changed much in recent years (e.g., Sears, 1986; Sieber & Saks, 1989). One of our concerns when we began to study the volunteer subject was that ethical sensitivities seemed to be propelling psychological science into becoming a science only of fully informed volunteers. More recently, Trice and Bailey (1986) argued that with-

drawal-without-prejudice clauses contained in consent forms may increase the number of "no-shows" and make us a science of only volunteers who show up. In an early meta-analysis, it was found that the median rate of no-shows in a sample of available studies was approximately a third of those who had volunteered (Rosenthal & Rosnow, 1975); a similar value was reported by Aditya (1996) on the basis of an updated analysis. The methodological insight is that if researchers are counting on a specific number of volunteers to satisfy a particular criterion of statistical power, they should increase the number recruited by perhaps one half (because about a third of verbal volunteers are estimated to be no-shows).

A final illustration of the opportunistic mindset concerns another aspect of the same body of work. Reviewing the research literature, Rosenthal and Rosnow (1975) identified a number of recruitment strategies to coax more people into the sampling pool. One approach was simply to tell the potential participants about anticipated benefits of the research, which had been shown to be a way of encouraging people to volunteer for research participation. Such a strategy makes the ethical nature of the research more sound because potential participants are treated as another "granting agency"—which, in fact, they are, granting us precious time, attention, and cooperation. Of course, researchers are obligated not to exaggerate the expected benefits merely to lure people into their study on false pretenses. The strategy also has the potential to make us more thoughtful about the value of research, and perhaps to make the volunteers who participate more representative of their cohort (e.g., Powell & Whitla, 1994).

Hedgehogs and Foxes

McGuire (1969) once described three stages in the life of an artifact as denying, coping, and exploiting; they also reflect three stages in response to the challenges of ethical demands in psychological research. There can be no denial that ethical sensitivities must be taken seriously, and in coping with these sensitivities it looks as if the Belmont report's principles of beneficence, respect for autonomy, and justice may become the watchwords of future guidelines (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Beneficence implies that any potential harm to the participants must be minimized and any benefits maximized. Respect for autonomy implies that we must protect

the rights, freedom, and dignity of our participants. Justice implies that the benefits of research should accrue equitably, and the risks of research be borne equitably, across different segments of society. As I have tried to show, researchers can uncover methodological opportunities in these ethical challenges.

Clearly, psychological research has come a long way from the moral neutrality illusion of the "see no evil, hear no evil" era of positivistic science (Rosnow, 1981; Rosnow & Georgoudi, 1986). Much is at stake when researchers are caught in a struggle with reciprocal, sometimes conflicting, demands and values. Berlin (1953) once quoted a line from the Greek poet Archilochus: "The fox knows many things, but the hedgehog knows one big thing." Not long ago, researchers were like scientific hedgehogs with a single, central vision of human research as an "endless frontier" unencumbered by tough moral dilemmas (Holton, 1978). The social contract handed to this and each future generation will be based on a constantly evolving "ideology of limits" (Holton, 1978)—laid down in self-imposed constraints and legally mandated statutes, overseen by IRBs peering over our shoulders. If the science is to prosper and grow, it must attract those researchers who can pursue different ends that are often contradictory, and work on ethical, substantive, and methodological levels at the same time. The development of psychological science took root in the dreams and efforts of scientific hedgehogs, but it appears the future of our science will belong to the foxes.

References

- Adair, J. G. (1973). *The human subject: The social psychology of the psychological experiment*. Boston: Little, Brown.
- Aditya, R. N. (1996). *The not-so-good subject: Extent and correlates of pseudovolunteering in research*. Unpublished master's thesis, Temple University, Department of Psychology, Philadelphia, PA.
- American Psychological Association. (1982). *Ethical principles in the conduct of research with human participants*. Washington, DC: Author.
- Appelbaum, P. S., & Rosenbaum, A. (1989). Tarasoff and the researcher: Does the duty to protect apply in the research setting? *American Psychologist*, *44*, 885–894.
- Arellano-Galdames, F. J. (1972). *Some ethical problems in research on human subjects*. Unpublished doctoral dissertation, University of New Mexico, Albuquerque.
- Atwell, J. E. (1981). Human rights in human subjects research. In A. J. Kimmel (Ed.), *Ethics of human subject research* (pp. 81–90). San Francisco: Jossey-Bass.
- Baumrind, D. (1964). Some thoughts on ethics of research: After reading Milgram's "Behavioral study of obedience." *American Psychologist*, *19*, 421–423.
- Beecher, H. K. (1966, July 2). Documenting the abuses. *Saturday Review*, pp. 45–46.
- Beecher, H. K. (1970). *Research and the individual: Human studies*. Boston: Little, Brown.
- Berlin, I. (1953). *The hedgehog and the fox: An essay on Tolstoy's view of history*. New York: Simon & Schuster.
- Bersoff, D. (1995). *Ethical conflict in psychology*. Washington, DC: American Psychological Association.
- Blanck, P. D., Bellack, A. S., Rosnow, R. L., Rotheram-Borus, M. J., & Schooler, N. R. (1992). Scientific rewards and conflicts of ethical choices in human subjects research. *American Psychologist*, *47*, 959–965.
- Bok, S. (1978). *Lying: Moral choice in public and private life*. New York: Pantheon.
- Bok, S. (1984). *Secrets: On the ethics of concealment and revelation*. New York: Vintage Books.
- Brooks-Gunn, J., & Rotheram-Borus, M. J. (1994). Rights to privacy in research: Adolescents versus parents. *Ethics and Behavior*, *4*, 109–121.
- Brown, R. (1965). *Social psychology*. New York: Free Press.
- Campbell, D. T. (1969). Prospective: Artifact and control. In R. Rosenthal & R. L. Rosnow (Eds.), *Artifact in behavioral research* (pp. 351–382). New York: Academic Press.
- Ceci, S. J., Peters, D., & Plotkin, J. (1985). Human subjects review, personal values, and the regulation of social science research. *American Psychologist*, *40*, 994–1002.
- Child Abuse Prevention and Treatment and Adoption Reform Act, 42 U.S.C.A. 5101 *et seq.*, Pub. L. No. 102-295 (West 1992).
- Cohen, J. (1990). Things I have learned (so far). *American Psychologist*, *45*, 1304–1312.
- Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist*, *49*, 997–1003.
- Cook, S. W., Hicks, L. H., Kimble, G. A., McGuire, W. J., Schoggen, P. H., & Smith, M. B. (1972, May). Ethical standards for research with human subjects. *APA Monitor*, I–XIX.
- Cook, S. W., Kimble, G. A., Hicks, L. H., McGuire, W. J., Schoggen, P. H., & Smith, M. B. (1971, July). Ethical standards for psychological research: Proposed ethical principles submitted to the APA membership for criticism and modification (by the) ad hoc Committee on Ethical Standards in Psychological Research. *APA Monitor*, 9–28.

- Department of Health and Human Services (1983). Protection of human subjects. *Code of Federal Regulations*, 45, Section 46–115.
- Department of Health, Education, and Welfare (1978). Protection of human subjects; institutional review board; report and recommendation of National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. *Federal Register*, 43, 56174–56198.
- Diener, E., & Crandall, R. (1978). *Ethics in social and behavioral research*. Chicago: University of Chicago Press.
- Dorn, L. D., Susman, E. J., & Fletcher, J. C. (1995). Informed consent in children and adolescents: Age, maturation and psychological state. *Journal of Adolescent Health*, 16, 185–190.
- Fisher, C. B. (1994). Reporting and referral research participants: Ethical challenges for investigators studying children and youth. *Ethics and Behavior*, 4, 87–95.
- Fisher, C. B., & Fyrberg, D. (1994). Participant partners: College students weigh the costs and benefits of deceptive research. *American Psychologist*, 49, 417–427.
- Fisher, C. B., & Tryon, W. W. (Eds.) (1990). *Ethics in applied developmental psychology: Emerging issues in an emerging field*. Norwood, NJ: Ablex.
- Gardner, G. T. (1978). Effects of federal human subject regulations on data obtained in environmental stressor research. *Journal of Personality and Social Psychology*, 36, 628–634.
- Gergen, K. J. (1973). Codification of research ethics: Views of a doubting Thomas. *American Psychologist*, 28, 907–912.
- Gniech, G. (1976). *Störeffekte in psychologischen Experimenten*. Stuttgart, Germany: Verlag W. Kohlhammer.
- Gray, B. H., & Cook, R. A. (1980). The impact of IRBs on research. *Hastings Center Report*, 10, 36–41.
- Gross, A. E., & Fleming, I. (1982). Twenty years of deception in social psychology. *Personality and Social Psychology Bulletin*, 8, 402–408.
- Gurman, E. B. (1994). Debriefing for all concerned: Ethical treatment of human subjects. *Psychological Science*, 5, 139.
- Harris, B. (1988). Key words: A history of debriefing in social psychology. In J. Morawski (Ed.), *The rise of experimentation in American psychology* (pp. 188–212). New York: Oxford University Press.
- Haywood, H. C. (1976). The ethics of doing research . . . and of not doing it. *American Journal of Mental Deficiency*, 81, 311–317.
- Hoagwood, K. (1994). The certificate of confidentiality at the National Institute of Mental Health: Discretionary considerations in its applicability in research on child and adolescent mental disorders. *Ethics and Behavior*, 4, 123–131.
- Holton, G. (1978). From the endless frontier to the ideology of limits. In G. Holton & R. S. Morison (Eds.), *Limits of scientific inquiry* (pp. 227–241). New York: Norton.
- Imber, S. D., Glanz, L. M., Elkin, I., Sotsky, S. M., Boyer, J. L., & Leber, W. R. (1986). Ethical issues in psychotherapy research: Problems in a collaborative clinical trials study. *American Psychologist*, 41, 137–146.
- Jones, E. E., & Gerard, H. B. (1967). *Foundations of social psychology*. New York: Wiley.
- Jones, J. H. (1993). *Bad blood: The Tuskegee syphilis experiment* (rev. ed.). New York: Free Press.
- Jourard, S. M. (1967). Experimenter-subject dialogue: A paradigm for a humanistic science of psychology. In J. F. T. Bugental (Ed.), *Challenges of humanistic psychology* (pp. 109–133). New York: McGraw-Hill.
- Jourard, S. M. (1968). *Disclosing man to himself*. New York: Van Nostrand Reinhold.
- Jung, J. (1971). *The experimenter's dilemma*. New York: Harper & Row.
- Kelman, H. C. (1967). Human use of human subjects: The problem of deception in social psychological experiments. *Psychological Bulletin*, 67, 1–11.
- Kelman, H. C. (1968). *A time to speak: On human values and social research*. San Francisco: Jossey-Bass.
- Kelman, H. C. (1972). The rights of the subject in social research: An analysis in terms of relative power and legitimacy. *American Psychologist*, 27, 989–1016.
- Kelman, H. C. (1977). Privacy and research with human beings. *Journal of Social Issues*, 33, 169–195.
- Kimmel, A. J. (1991). Predictable biases in the ethical decision making of American psychologists. *American Psychologist*, 46, 786–788.
- Kimmel, A. J. (1996). *Ethical issues in behavioral research A survey*. Cambridge, MA: Blackwell.
- Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement*, 5, 746–759.
- Koocher, G. P., & Keith-Spiegel, P. C. (1990). *Children, ethics, and the law*. Lincoln: University of Nebraska Press.
- Lee, R. M. (1993). *Doing research on sensitive topics*. London: Sage.
- Levine, R. J. (1987). The apparent incompatibility between informed consent and placebo-controlled clinical trials. *Clinical Pharmacology and Therapeutics*, 42, 247–249.
- Liss, M. B. (1994). Child abuse: Is there a mandate for researchers to report? *Ethics and Behavior*, 4, 133–146.
- Loftus, G. R. (1996). Psychology will be a much better

- science when we change the way we analyze data. *Current Directions in Psychological Science*, 5, 161–171.
- Mann, T. (1994). Informed consent for psychological research: Do subjects comprehend consent forms and understand their legal rights? *Psychological Science*, 5, 140–143.
- McGuire, W. J. (1969). Suspiciousness of experimenter's intent. In R. Rosenthal & R. L. Rosnow (Eds.), *Artifact in behavioral research* (pp. 13–57). New York: Academic Press.
- McNemar, Q. (1946). Opinion-attitude methodology. *Psychological Bulletin*, 43, 289–374.
- Melton, G. B., Levine, R. J., Koocher, G. P., Rosenthal, R., & Thompson, W. C. (1988). Community consultation in socially sensitive research: Lessons from clinical trials of treatments for AIDS. *American Psychologist*, 43, 573–581.
- Menges, R. J. (1973). Openness and honesty versus coercion and deception in psychological research. *American Psychologist*, 28, 1030–1034.
- Milgram, S. (1975). *Obedience to authority*. New York: Harper Colophon.
- Miller, A. G. (1986). *The obedience experiments: A case study of controversy in social science*. New York: Praeger.
- National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1979). *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research*. Washington, DC: US Government Printing Office.
- Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist*, 17, 776–783.
- Orne, M. T. (1969). Demand characteristics and the concept of quasi-controls. In R. Rosenthal & R. L. Rosnow (Eds.), *Artifact in behavioral research* (pp. 143–179). New York: Academic Press.
- Parloff, M. B. (1986). Placebo controls in psychotherapy research: A sine qua non or a placebo for research problems? *Journal of Consulting and Clinical Psychology*, 54, 79–87.
- Powell, D. H., & Whitla, D. K. (1994). *Profiles in cognitive aging*. Cambridge, MA: Harvard University Press.
- Resnick, J. H., & Schwartz, T. (1973). Ethical standards as an independent variable in psychological research. *American Psychologist*, 28, 134–139.
- Rosenthal, R. (1994). Science and ethics in conducting, analyzing, and reporting psychological research. *Psychological Science*, 5, 127–134.
- Rosenthal, R., & Rosnow, R. L. (Eds.) (1969). *Artifact in behavioral research*. New York: Academic Press.
- Rosenthal, R., & Rosnow, R. L. (1975). *The volunteer subject*. New York: Wiley.
- Rosenthal, R., & Rosnow, R. L. (1984). Applying Hamlet's question to the ethical conduct of research: A conceptual addendum. *American Psychologist*, 39, 561–563.
- Rosenthal, R., & Rubin, D. B. (1994). The counternull value of an effect size: A new statistic. *Psychological Science*, 5, 329–334.
- Rosenzweig, S. (1933). The experimental situation as a psychological problem. *Psychological Review*, 40, 337–354.
- Rosnow, R. L. (1971). Experimental artifact. In L. Deighton (Ed.), *The encyclopedia of education* (Vol. 3, pp. 483–488). New York: Free Press and Macmillan.
- Rosnow, R. L. (1977). Social research: Artifacts. In B. B. Wolman (Ed.), *International encyclopedia of psychiatry, psychology, psychoanalysis, and neurology* (Vol. 10, pp. 328–331). New York: Van Nostrand Reinhold.
- Rosnow, R. L. (1981). *Paradigms in transition: The methodology of social inquiry*. New York: Oxford University Press.
- Rosnow, R. L. (1990). Teaching research ethics through role-play and discussion. *Teaching of Psychology*, 17, 179–181.
- Rosnow, R. L., & Georgoudi, M. (Eds.) (1986). *Contextualism and understanding in behavioral science: Implications for research and theory*. New York: Praeger.
- Rosnow, R. L., & Rosenthal, R. (1989). Statistical procedures and the justification of knowledge in psychological science. *American Psychologist*, 44, 1276–1284.
- Rosnow, R. L., & Rosenthal, R. (1996a). Computing contrasts, effect sizes, and counternulls on other people's published data: General procedures for research consumers. *Psychological Methods*, 1, 331–340.
- Rosnow, R. L., & Rosenthal, R. (1996b). Contrasts and interactions redux: Five easy pieces. *Psychological Science*, 7, 253–257.
- Rosnow, R. L., Rotheram-Borus, M. J., Ceci, S. J., Blanck, P. D., & Koocher, G. P. (1993). The institutional review board as a mirror of scientific and ethical standards. *American Psychologist*, 48, 821–826.
- Rubin, Z. (1974). Jokers wild in the lab. In J. B. Maas (Ed.), *Readings in psychology today* (pp. 25–27). Del Mar, CA: CRM Books.
- Saxe, L. (1991). Lying: Thoughts of an applied social psychologist. *American Psychologist*, 46, 409–415.
- Scarr, S. (1994). Ethical problems in research on risky behaviors and risky populations. *Ethics and Behavior*, 4, 147–155.
- Schmidt, F. L. (1996). Statistical significance testing and

- cumulative knowledge in psychology: Implications for training of researchers. *Psychological Methods*, 1, 115–129.
- Schuler, H. (1982). *Ethical problems in psychological research* (M. S. Woodruff & R. A. Wicklund, Trans.). New York: Academic Press. (Original work published 1980)
- Scott-Jones, D. (1994). Ethical issues in reporting and referring in research with low-income minority children. *Ethics and Behavior*, 42, 97–108.
- Scott-Jones, D., & Rosnow, R. L. (in press). Ethics and mental health research. In H. S. Freedman (Ed.), *Encyclopedia of mental health*. San Diego, CA: Academic Press.
- Sears, D. O. (1986). College sophomores in the laboratory: Influences of a narrow data base on social psychology's view of human nature. *Journal of Personality and Social Psychology*, 51, 515–530.
- Sieber, J. E. (Ed.) (1982a). *The ethics of social research: Fieldwork, regulation, and publication*. New York: Springer-Verlag.
- Sieber, J. E. (Ed.) (1982b). *The ethics of social research: Surveys and experiments*. New York: Springer-Verlag.
- Sieber, J. E., & Saks, M. J. (1989). A census of subject pool characteristics and policies. *American Psychologist*, 44, 1053–1061.
- Silverman, I. (1977). *The human subject in the psychological laboratory*. New York: Pergamon.
- Singer, E., von Thurn, D. R., & Miller, E. R. (1995). Confidentiality assurances and responses: A quantitative review of the experimental literature. *Public Opinion Quarterly*, 59, 66–77.
- Smith, M. B. (1967). Conflicting values affecting behavioral research with children. *Children*, 14, 53–58.
- Smith, M. B. (1969). *Social psychology and human values*. Chicago: Aldine.
- Stanley, B., Sieber, J. E., & Melton, G. B. (1987). Empirical studies of ethical issues in research: A research agenda. *American Psychologist*, 7, 735–741.
- Stricker, L. J. (1967). The true deceiver. *Psychological Bulletin*, 68, 13–20.
- Strohmetz, D. B., & Skleder, A. A. (1992). The use of role-play in teaching research ethics: A validation study. *Teaching of Psychology*, 19, 106–108.
- Sullivan, D. S., & Deiker, T. E. (1973). Subject-experimenter perceptions of ethical issues in human research. *American Psychologist*, 28, 587–591.
- Suls, J. M., & Rosnow, R. L. (1981). The delicate balance between ethics and artifacts in behavioral research. In A. J. Kimmel (Ed.), *Ethics of human subject research* (pp. 55–67). San Francisco: Jossey-Bass.
- Susman, E. J., Dorn, L. D., & Fletcher, J. C. (1992). *Journal of Pediatrics*, 121, 547–552.
- Taffel, C. (1955). Anxiety and the conditioning of verbal behavior. *Journal of Abnormal and Social Psychology*, 51, 496–501.
- Trice, A. D., & Bailey, B. H. (1986). Informed consent: II. Withdrawal-without-prejudice clauses may increase no-shows. *Journal of General Psychology*, 113, 285–287.
- Wilcox, B., & Gardner, D. (1993). Political intervention in scientific peer review: Research on adolescent sexual behavior. *American Psychologist*, 48, 972–983.
- Williams, P. C. (1984). Success in spite of failure: Why IRBs falter in reviewing risks and benefits. *IRB: A Review of Human Subjects Research*, 6(3), 1–4.

Received June 14, 1996

Revision received December 16, 1996

Accepted December 24, 1996 ■