

Psychological Research and Public Policy:

Taking a Long, Hard Look before We Leap

Donn Byrne and Kathryn Kelley

State University of New York at Albany

When psychologists find themselves in the relatively unfamiliar position of being consulted as experts about important issues of public policy, two common --- though incompatible --- reactions are commonly observed. One possibility is to retreat rapidly to the laboratory behind a protective shield bearing the inscription MORE RESEARCH IS NEEDED. The opposite choice is based on the assumption that important decisions are going to be made with or without psychological input. If so, one may as well charge boldly forth armed with theory and data in an attempt to influence the decision-making process.

Though we find it easy enough to advance arguments to support either reaction, our basic message is to urge that caution be exercised. When major societal changes are being considered in the form of introducing new legislation, repealing existing legislation, or altering enforcement and regulatory practices with respect to current laws, a conservative stance has much to recommend it. Because any change involves countless unforeseen consequences, it is vital that the reason for such change be very well established. The same point is made more pithily in the saying, "If it ain't broke, don't fix it." That advice could be amended to suggest that even if you aren't sure "whether it's broke or not, don't rush to fix it."

With respect to the effects of pornography on behavior and the need to "fix it," the Attorney General's Commission on

Pornography has issued an introduction to its upcoming publication (Report: Pornography can lead to violence, 1986). In it is the conclusion that exposure to most pornography "bears some causal relationship to the level of sexual violence, sexual coercion or unwanted sexual aggression." As individuals who have conducted research in this field and who testified before the Commission in its Houston hearings, we are disturbed by this conclusion and by the policy recommendations to be made involving new federal laws dealing with obscenity, pandering, and labor practices as well as recommendations concerning the use of the powers of the Federal Communications Commission and the establishment of an obscenity task force in the Justice Department that will focus on prosecution. Such conclusions and recommendations may not have a firm data base, but they are consistent with studies of the perseverance of social theories (Anderson, 1982; Anderson, Lepper, & Ross, 1980). In fact, this perseverance bias is most pervasive when it is based on extremely weak data such as vivid case histories (Anderson, 1983).

Even before the formal report is issued and new laws considered, it is ominous to find that the 7-Eleven chain can be pressured to remove such erotically dull publications as Playboy and Penthouse from its shelves. The announcement of that decision was soon followed by the removal of American Photographer from magazine racks in Kansas because the distributor discovered a photograph of an unclothed female breast in one issue (Photo magazine censored in Kansas, 1986).

In view of such governmental recommendations and anticipatory reactions in portions of the business community, our

cautionary stance does not seem to be baseless. It is not based on timidity or professional modesty, but on the knowledge that judgments are routinely made on inadequate bases and that the utilization of sophisticated research methodology, statistics, and professional jargon can sometimes serve only to camouflage the inadequacies of the decision-making process rather than to correct them. Please note that these warnings are directed equally at psychologists and nonpsychologists alike. Sexuality seems to be especially vulnerable to this problem as when well meaning physicians at the end of the last century and beginning of this urged parents to take whatever steps were needed to eliminate childhood masturbation in order to prevent loss of memory and intelligence, depression, nymphomania, retarded growth, headache, sleeplessness, pain, weakness in the back and genital organs, cowardice, dry hair with split ends, heart pains, constipation, coughing, epilepsy, paralysis, premature old age, and death (Stout, 1885; Walling, 1904).

Before turning to the specific question of interpreting research on the effects of erotica, it may prove helpful to point out precisely why truly objective judgments are generally difficult or impossible to achieve and to remind ourselves of an embarrassing chapter in psychology's past with respect to our field's very effective influence on public policy.

Difficulties Encountered by Emotional Organisms

Trying to Make Rational Decisions

One paratheoretical dispute among behavioral scientists is the tendency to emphasize the rational versus the affective aspects of human behavior. Whether we each function as a

computer-like mechanism dealing with facts, probabilities, and cost-benefit ratios or as a wary mammal primarily motivated simply to avoid pain and achieve pleasure is a venerable issue and one that cannot readily be settled on an empirical basis (e.g., Mandler & Shebo, 1983; Zajonc, 1980).

We identify ourselves with the affective emphasis and propose that most human decision-making occurs on the basis of an emotion-based sequence of reactions (Byrne, 1971; Byrne, Rasche, & Kelley, 1974; Clore & Byrne, 1974). As an oversimplified version of this approach, it is proposed that stimulus events often elicit short-term affective responses that, in turn, form the basis for temporally stable evaluative responses such as attitudes. These attitudes, in turn, influence approach versus avoidance behavior. At the most rudimentary level, a child tastes ice cream for the first time, experiences positive affect, and concludes that he or she likes ice cream. Subsequently, that individual is inclined to desire ice cream, to ask for ice cream, to purchase ice cream, to eat ice cream when it is available, etc. On another occasion, the same child may taste cabbage, experience negative affect, and conclude that he or she dislikes cabbage. Subsequently, that individual is inclined to avoid contact with this vegetable, to refuse to eat it, etc. Because many stimulus events have mixed effects and elicit combinations of positive and negative affect (e.g., curiosity, fear, pleasure, guilt, and so forth), it has been necessary to specify the mathematical rule whereby discrete affective responses differing in magnitude and valence are combined to yield a simple evaluative response (Byrne, 1982, 1983). This conceptualization

involving stimulus events that elicit affect that forms the basis of stable evaluations that influence overt behavior has proven to be a useful one for predicting a variety of behaviors (e.g., Byrne, Clore, & Smeaton, in press; Byrne & Lamberth, 1971; Byrne & Murnen, in press; Fisher, Byrne, & White, 1983).

Actually, the description of behavior just outlined is consistent with the behavior of many organisms, including our two Golden Retrievers. That is, they show overt signs that appear to reflect pleasure in response to being fed, petted, or talked to, and they wag their tails, try to lick our faces, and run toward us --- whining, jumping, and rolling on their backs. They also show overt signs that appear to reflect to reflect anger and fear in response to being teased by small neighbor boys and bark ferociously when they appear, sometimes running toward them with menacing growls and sometimes running out of sight into their dog houses.

With human beings, analogous responses to positive and negative stimuli are somewhat more complex than those of these two not overly bright dogs. The cognitive capacity of our species is such that behavior can also be guided by rational considerations in addition to affective ones. If not, we would never visit a dentist or turn down a second helping of chocolate cake (Kelley et al., 1985). In addition, even when we respond to simple emotional determinants, we seem to feel constrained to supply logical, rational justifications for our decisions and our actions (Byrne, Fisher, Lamberth, & Mitchell, 1974). It is this need to justify many basically simple and primitive reactions that creates a great many problems.

To leap ahead to the pornography question, it is perfectly understandable that explicit depictions of nude men and women engaging in various sexually explicit activities make some individuals feel anxious, guilty, ashamed, angry, and/or nauseated while others respond with interest, curiosity, excitement, and joy. These differences would seem to be based on differences in socialization experiences, parental attitudes, cultural influences, and specific personal experiences (Fisher, Byrne, White, & Kelley, 1986). The consequence would seem to be simple --- those who respond negatively should avoid sexual explicitness and never be forced to encounter it; those who respond positively should come in contact with as much of this material as they wish and never be deprived of the opportunity (Kelley, 1979, 1985a, 1985b). This simple sequence of events rarely occurs, and the initial stumbling block is our human tendency to justify our own reactions. Long before there were research data of any kind dealing with the effects of exposure to sexual images, many argued strongly that this imagery was dangerous and debilitating to the individual and to society while others argued strongly that it was liberating and healthful to the individual and to society (Byrne & Kelley, 1984).

In a totally rational and ideal world, these contradictory propositions about the effects of sexually explicit presentations could be resolved by the objective application of the methods of behavioral science to confirm or disconfirm the conflicting claims and expectancies about the behavioral, emotional, and attitudinal effects of exposure. Such an assumption would seem to underlie the work of the first Commission on Obscenity and

Pornography, appointed in 1968 under President Johnson, At that time, almost nothing was known about the effects of explicit sexual material, and by 1970 when the Commission report was published and 1971 when the series of technical reports was published, one might have hoped that all of the controversies would have been settled once and for all.

That did not happen, of course, because (1) scientific questions are never settled once and for all and (2) scientists are human beings who are influenced by their own emotional responses and their need to justify their emotional responses. Perhaps the second of these assertions can best be illustrated by briefly examing an earlier example of behavioral research and public policy applications in an area far removed from sexuality.

The Fruitless Search for Objectivity

and the Pervasive Influence

of Emotions, Attitudes, Beliefs, and Values

From time to time one hears the assertion that certain activities such as judicial proceedings, news reporting and science are, or should be, objective and unbiased in their communications to the general public. At the risk of stating the obvious to some and the heretical to others, we are forced to conclude that objectivity is most often an impossible dream. We select, believe, remember, and conclude in large part on the basis of our existing emotions, attitudes, beliefs, and values. Alter (1986, p. 15) provided an interesting example of this process with various assertions in 1984 about what George Orwell's politics would have been had he lived until the year he made infamous. "Liberals and socialists tended to argue that

Orwell would be a liberal or a socialist today. Conservatives and neoconservatives tended to insist that he would be a conservative or neoconservative."

One place we clearly expect objectivity is the courtroom, but there are plentiful data dealing with jury selection, eyewitness testimony, attorney behavior, and juror bias to suggest the opposite (Baron & Byrne, in press). Research even indicates that judges unwittingly communicate their attitudes about a defendant by means of nonverbal cues such as tone of voice (Goleman, 1986). In this instance, the decisions of jurors are found to be affected by these affective judicial messages.

In news reporting, the objective ideal is also invoked. Despite various accusations about the liberal bias of the networks, it has been found that the verbal content of the network news is surprisingly fair with respect to liberal versus conservative biases (Robinson, 1985). Undoubtedly a small army of writers and editors work very hard to achieve this goal. Even so, nonverbal emotional and attitudinal messages are conveyed, probably unconsciously, by way of smiles, frowns, and other facial indicators of the news person's own reactions (Mullen et al., in press). In the 1984 campaign, it was found that Peter Jennings on ABC showed a nonverbal bias in favor of President Reagan while Dan Rather and Tom Brokaw managed to respond nondifferentially to Reagan and Mondale. It was also found that ABC viewers were more likely to vote for Reagan than were viewers of CBS and NBC.

Though these findings could indicate the awesome power of television to influence the attitudes and behaviors of viewers,

it is more likely an indication of the tendency of viewers to expose themselves to and to believe that which matches their previously established biases. Whatever we tell ourselves about our openmindedness, there is a well established tendency to seek out that which fits whatever we already believe and to avoid that which does not. One documented example was the disinterest of pro-Nixon viewers in the Watergate hearings versus the continuing fascination of anti-Nixon viewers with every detail (Sweeney & Gruber, 1985).

Despite these various examples, surely science must be a totally different matter. Scientists seek empirical tests and rely on hard data to buttress or refute their hypotheses. This is true, of course, and it constitutes the major strength of this particular approach to acquiring knowledge about the world. It is nevertheless more difficult and time-consuming than it sounds to obtain a sufficient body of data to overcome pre-existing beliefs about anything whether the topic is planetary orbits, evolution, or the germ theory of disease. Even the seemingly least subjective aspects of a scientific quest are guided by one's beliefs about what will be found (Kelley, 1985c). Kuhn (1962, p. 59) suggested that, "The decision to employ a particular piece of apparatus and to use it in a particular way carries an assumption that only certain sorts of circumstances will arise."

Scientific bias is not necessarily this subtle, but even blatant abuses are easiest to spot when one is far removed in time and in cultural support from the incident. Gould (1981) has detailed the way in which prevailing racial, ethnic, and sexual biases in the first half of this century exerted a profound

effect on psychological research involving intelligence and on the conclusions drawn from the data that were obtained.

The belief in hierarchically ordered group differences based on genetic factors was widely accepted, and behavioral scientists were able to provide seemingly irrefutable data that supported such beliefs and served to affect public policy decisions in a direction consistent with the beliefs. At the clearly unethical extreme lies the falsification of data by those holding hereditarian views as when the photographs of Goddard's (1912) Kallikak family were retouched to make them look convincingly depraved, sinister, and diabolical (Gould, 1981) or when Sir Cyril Burt (e.g., 1966) fabricated investigators, subjects, and data to support his views as to the innateness and unchangeability of intelligence (Hearnshaw, 1979; Kamin, 1977).

Much less obvious bias can affect the work of otherwise objective investigations. For example, when H. H. Goddard (1913, 1917) assessed emigrants arriving in the U. S. at Ellis Island, he found that from 79% to 87% of the Jewish, Hungarian, Italian, and Russian arrivals were "feeble-minded." This apparent assault on the U. S. gene pool was soon alleviated by legal restrictions on who could be admitted to this country and by a rapid increase in the number of annual deportations on the basis of being classified as mentally defective. Any considerations of cultural, experiential, or linguistic barriers to valid intelligence testing were ignored.

On the other side of the continent, Lewis Terman's (1916) investigations with the Stanford-Binet led him to conclude that high grade defectives (i.e., the working class, especially

Spanish-Indians and Mexicans) should be identified, placed under society's surveillance, and curtailed from reproducing. His laudable goal was to eliminate crime, poverty, and industrial inefficiency.

The power of emotional-attitudinal bias is demonstrated by such examples, and the eventual power of the scientific method is shown by the fact that Goddard and Terman later changed their minds on the basis of additional data. The public policy caution must be repeated, however. Before these and other investigators were converted, a great many human beings had been refused entry to the U. S., deported from the U. S., and sterilized. In Great Britain, Burt's influence on the educational system --- early testing and rigid stratification --- is still being felt. Those who were unfairly treated on the basis of such policy decisions might find it more difficult than we do to respond sanguinely to the eventual corrective powers of the scientific enterprise.

How do these various points, issues, and examples apply to the question of pornography and its effects? The general difficulty in achieving objectivity should be clear, except that it should be underlined that emotional reactions to questions about sexuality are stronger and more pervasive than reactions to questions about politics, courtroom defendants, or intelligence. We will suggest a few of the most obvious specific problems encountered in conducting and interpreting research in this area and, most importantly, in using these research findings as justification for taking action against individuals, business concerns, goods, or services that have any relationship to sexually explicit words and pictures.

Sex Research as an Exemplar
of Individual and Cultural Biases

The task of identifying the effects of explicit sexual presentations on behavior is not conceptually an unusual or especially difficult one, but it becomes unusual and extremely difficult because of the affective aspects of anything having to do with sex. Thus, it would undoubtedly be much easier to think clearly, argue cogently, and act rationally if the topic were the effect of explicit presentations of dessert recipes on calorie intake.

For the present discussion, we will narrow the focus to a specific question about sexual imagery. Does exposure to explicit sexual material on a short-term or long-term basis have an effect on coercive sexual behavior? While there is considerable disagreement as to the desirability of other effects of exposure to erotica (e.g., an attitude shift toward increasing permissiveness), almost everyone can agree that sexual coercion is unacceptable --- there are few proponents of sexual harassment, rape, and child abuse. Since the initial hearings of the first Commission in the late 1960s, a great deal of research has been conducted by behavioral scientists in both laboratory and field studies. Over the last decade, the rapid development of appropriate measuring instruments and research methodologies, the growth in the amount of available empirical data, and the development of relevant theoretical formulations have been phenomenal. Despite the progress that has been made, it is difficult to conclude that we know enough to take steps that directly affect the rights of our fellow citizens.

in science, controversy and uncertainty are an integral part of the game. The fact that scientists attempt to be open to new data and new ideas and hence to a revision of previously held beliefs is the basic strength of this approach to knowledge. In the everyday world of legislation and law enforcement, controversy, uncertainty, and shifting conclusions are disastrous. Let us now take a brief look at some of the detailed reasons for being cautious about moving from sex research to making policy.

Examining Imperfect Substitutes
for the Dependent Variables

An unavoidable weakness in the study of coercive sex is sometimes ignored. We are unable directly to investigate the behavior in question. There are few fields of inquiry in which the prime dependent variable is excluded from the research process. As difficult as it has been to study any form of sexual responding, the development of measuring devices that assess male and female genital arousal (Kelley & Byrne, 1983) and the creation of a laboratory setting in which autosexual, heterosexual, and homosexual acts are observed and physiologically recorded (Masters & Johnson, 1966, 1979) has brought much of human sexuality within the realm of ordinary scientific procedures.

Analogous advances in the study of coercive sexuality cannot ethically be undertaken. As a result, it is necessary to rely on other variables that may or may not be directly relevant. So, we ask subjects what they have done in the past and what they hypothetically might do in the future. Analogues can be created

as when the pressing of a button supposedly causing pain to another person is roughly equated with interpersonal aggression. Emotional responses to verbal and/or auditory depictions of rape, torture, or child abuse can be used as rough samples of how an individual might respond to similar scenes in everyday life. Finally, archival data such as public statistics of reported crimes can be correlated with other societal variables in the hope of identifying causal links (Kelley, 1985c).

There is no intention here of disparaging the creativity of those who developed such methodologies or of dismissing the resultant findings as irrelevant. One might, nevertheless, hesitate to assume perfect correspondence between these behavioral measures and genuinely coercive acts.

Case Histories:

For Instance Isn't Proof

The careful gathering of case history material has played and can continue to play a valuable role in psychology as a source of data and hypotheses about human sexual behavior (Byrne & Kelley, 1984b).

In contrast, when case histories are treated as the final step in validating or disconfirming a predicted relationship, they are not only useless but frequently dangerous. Even without the dramatic trappings of anonymous victims and sincere police officers testifying before the Pornography Commission, we have each read newspapers and magazine accounts that present many versions of a scenario in which a convicted rapist is found to possess pornographic magazines, books, or movies. Even with multiple instances of such discoveries, this type of "evidence"

for the dangers of erotica would be clearly ludicrous were it not for the widespread acceptance of such data.

Without belaboring the obvious, the general problem of selecting some small aspect of the total array of data and the need for a control group can perhaps be illustrated by a comparison. How convincing would it be to read that police officers discovered homogenized milk in the refrigerator of a convicted rapist? Without knowing whether this activity differentiated rapists from a matched sample of non-rapists, few of us would be inclined to propose laws banning dairies, forbidding milk distribution, and removing this product from refrigerated grocery shelves.

Existing Beliefs Guide

Research and Its Interpretation

The leap from isolated case history data to a conclusion about cause and effect occurs in part because of preexisting and widely held beliefs. Such beliefs have a more general influence as well.

For example, a link between sexual and aggressive impulses has long been assumed, and biological explanations have been offered (MacLean, 1965). It was said that the brain's limbic system provided the link between the arousal of these two motivational processes. The basic assumption was that an expression of aggressive behavior facilitates sexual arousal. The everyday analogy is that spouses may argue and then lovingly make up their differences. There is even the observation that a physical assault on one's spouse is mutually energizing to subsequent sexual interactions (Kelley, 1985c).

Whatever ultimate conclusions we draw about the validity of the general proposition, one line of research was undertaken that indicated that anger increased sexual arousal as measured by sexual imagery created by subjects in response to TAT-like stimuli (Barclay, 1969, 1970; Barclay & Haber, 1965). Those TAT pictures involved males and females in dominant and submissive roles, and subsequent research in our laboratory provides evidence that it is the degree of depicted dominance that determines whether sexual imagery is expressed in the stories. Neither anger nor the opportunity to aggress was found to have any effect on sexual arousal (Kelley, Miller, Byrne, & Bell, 1983).

A quite different line of research indicates that sexual arousal in response to aggressive cues may occur but only for a small subset of the male population (Abel, Barlow, Blanchard, & Guild, 1977; Greendlinger, 1985; Kelley, 1985d; Malamuth, Check, & Briere, 1986). An even smaller group in a sample of sex criminals enjoys mentally transforming mutually consenting sexual stories into tailor made fantasies of rape and violence (Marshall, 1985).

It can be seen that the assumption of an aggression-sex link at first led to confirmatory results. Second, the attempt to clarify the relationship yielded new information about the role of dominance. Third, the original proposition may be valid but only for certain identifiable individuals. Though the original assumption may not be totally accurate as stated, belief in its validity has served as a road map to suggest what research questions to ask and what findings to expect.

The Importance of Content:
Do We Want to Prevent the Modeling
of All Sexual Activity?

The literature on modeling provides strong support for the proposition that those who are exposed to sexually explicit images would show an increased tendency to imitate whatever sexual activity had been presented. Existing evidence indicates that individuals so exposed express the desire to imitate the depicted acts (Bryant, 1985), report their intention to engage in such an act (Wishnoff, 1978), and increase the frequency with which they perform the behavior (Heiby & Becker, 1980).

The fact that erotic presentations are not always followed by imitative behavior can be explained by the fact that negative emotional responses to the depiction do not lead to the desire or intention to engage in the activity and that inhibiting factors may intervene ---anxiety, guilt, moral beliefs, legal restrictions, expectancies of unpleasant consequences, and the nonavailability of a suitable or willing partner or partners (Kelley, 1985e).

How we as individuals or as a society evaluate the desirability of the depicted behavior and its possible imitation goes beyond what scientific inquiry can appropriately answer. We noted earlier that coercive sex is generally disapproved, and we suspect that loving, procreational sex in the context of marriage is generally approved. Between those two extremes lie a vast number of possible activities, the acceptability of which is open to honest disagreement. We know that sexually dysfunctional individuals can learn from certain depictions how to initiate

sexual intercourse with a spouse, to engage in lengthy foreplay, and to reach orgasm (Nemetz, Craig, & Reith, 1978) and that in the context of sex education students can learn about the use of contraceptives and the prevention of sexually transmitted diseases (Kelley, Byrne, Greendlinger, & Przybyla, 1985). Are those instances of modeling acceptable? How do we react to the depiction of promiscuity, adultery, or homosexuality?

It seems to us that any statements about the effects of erotica miss the point. Whether or not individuals are depicted as clothed or unclothed and using or not using their genitalia seem much less relevant to anything than the emotional, attitudinal, and moral context in which the behavior occurs. These considerations necessarily extend beyond erotica to a consideration of sexist television commercials, reckless car chases on TV, slasher films, and much else besides.

Some Additional

Research Problems

Sampling bias. In any studies of human behavior, sampling is an everpresent problem. In much that we do, psychologists utilize admittedly inadequate samples of the total population and fervently hope that the findings have generalizability. With studies of sex, we know that any informed volunteers differ from the general population. Subjects in sex studies are found to be more sexually permissive and more sexually experienced than non-volunteers. Though such sampling biases by definition affect the results of survey research, we know very little about their effect on experimental investigations. That knowledge is crucial to permit us to generalize with any confidence from the behavior

of volunteer subjects to the behavior of the population at large and hence to policy decisions.

Correlational data. The elementary fact that correlation does not indicate causation hardly seems worth mentioning except for the fact that when the topic is sex, basic knowledge sometimes is forgotten. A case in point is Baron's (1985) very interesting and widely quoted finding that there is a correlation across states between the circulation of sexually oriented magazines and the incidence of rape. Despite the author's warning about the correlational nature of his data, on two occasions at public forums we have heard that finding used to "document" the probable dangers of soft core publications as the instigators of sex crimes. It should be noted that other variables in that study such as the number of divorced males, economic disparity, and urbanization were more strongly related to rape incidence than were the sales of sexual magazines. Further, rape is also found to be related to the circulation of masculine publications such as Field and Stream and Guns and Ammo (Scott, 1986).

On the opposite side, there are correlational data indicating that in societies in which pornography laws are made less restrictive, the rate of coercive sexual acts decreases or is unaffected (Abramson & Hayashi, 1984; Green, 1985; Kutchinsky, 1985). In a similar way, the self-reported pornographic exposure of convicted sex criminals is found to be less than that of non-sex criminals (Goldstein, Kant, & Hartman, 1974). Once again, correlations do not necessarily indicate that cause and effect relationships have been identified.

Individual differences. Whatever the general effect of

explicit material on behavior, there is abundant evidence that the such effects are not universal but are mediated by dispositional variables such as erotophobia, sex guilt, authoritarianism, and hypermasculinity (Fisher & Byrne, 1978; Kelley & Musialowski, in press; Mosher & Anderson, 1986; Mosher & Sirkin, 1984; Smeaton & Byrne, 1986).

Not only do individuals with different personality characteristics respond differently, they often are found to respond in opposite ways (Kelley, 1985f). Thus, an erotic depiction that has a positive effect on some viewers can have a negative effect on other viewers (White, 1979). It seems that attempts to enact general restrictive laws are analogous to banning the sale of peanut butter because some individuals have severe allergic reactions to this substance.

Restricted response alternatives. In any experimental setting, the response alternatives available to subjects are limited. This limitation is a valid and purposeful one. The major difficulty is that initial assumptions can determine the experimenter's selection of alternatives to be provided and thus create an unrepresentative view of behavioral effects (Kelley, 1985c).

For example, if one sets out to study the effects of sexually explicit films on aggression, the response possibilities tend to consist of degrees of aggression. The fact that these same stimuli may evoke positive responses such as altruism could not be known unless subjects were given the opportunity to behave in a prosocial way following exposure to erotica (Kelley, in press; Przybyla, 1985).

Limited exposure versus massive exposure. The problem of attempting to establish a laboratory equivalent of real-life experiences is never a simple one. Most often, we have access to human subjects only for a very limited period of time. With research on sexual imagery, there is often a very brief exposure followed by the assessment of immediate or relatively short-term effects. Much of the research conducted for the original Pornography Commission was of this type. Such brief contact may be quite different from prolonged contact. As a result, an investigator may be inclined to conclude erroneously that there is little or no effect. An analogy would be to investigate addictive drugs by examining what happens when individuals have one ingestion experience.

Given the temporal limitations of subject access and the possibility that measureable effects might require years of exposure (Byrne, 1977), a different strategy is to employ massive doses of erotica (e.g., Zillmann & Bryant, 1984). Though this procedure might well represent a speeded-up simulation of what ordinarily takes place over a much longer time span, it also may distort such effects. An analogy would be the laboratory studies of the health effects of diet soda that concentrate longterm consumption patterns in a limited time segment. It seems likely that the effects of drinking one soda per day for five years may not be precisely the same as the effects of consuming 73 bottles per day for 25 days.

Conclusions

The foregoing discussion of the multiple reasons for caution in applying what we know in ways that affect society can easily

be misinterpreted to mean that behavioral research is worthless and that we might do as well or better consulting our grandmothers rather than psychologists.

Our clarion call for inaction should not be taken to mean that action is never appropriate. Though each individual investigation may present problems of interpretation, the accumulation of consistent findings in multiple investigations by different investigators holding different biases, using different methodologies, across quite varied samples, measuring a variety of behaviors in a variety of ways, can eventually lead to a widely accepted conclusion that may warrant societal action. The gradual accumulation of data about the effects of cigarette smoking has led over a period of decades to increasing agreement (even among smokers) about the dangers and a slowly accelerating series of steps to prevent or discourage smoking and to protect passive as well as active inhalers of tobacco fumes.

There is no magic moment at which the accumulated knowledge suddenly is "enough" to achieve consensus, but there is surely no reason to think that such a moment is upon us with respect to the effects of erotica.

Finally, let us suggest that if errors of judgment are to be made in this realm (and they are likely to be), it is preferable to err by waiting a few years too long to act than by rushing to act a few years too early. Procrastination that helps us avoid harmful decisions may represent the wisest course of action.

References

- Abel, G. G., Barlow, D. H., Blanchard, E., & Guild, D. (1977). The components of rapists' sexual arousal. Archives of General Psychiatry, 34, 895-903.
- Abramson, P. R., & Hayashi, H. (1984). Pornography in Japan: Cross-cultural and theoretical considerations. In N. M. Malamuth & E. Donnerstein (Eds.), Pornography and sexual aggression (pp. 173-183). New York: Academic Press.
- Alter, J. (1986). The myth of Scoop Jackson. The New Republic, 194(19), 15-18.
- Anderson, C. A. (1982). Inoculation and counter-explanation: Debiasing techniques in the perseverance of social theories. Social Cognition, 1, 126-139.
- Anderson, C. A. (1983). Abstract and concrete data in the perseverance of social theories: When weak data lead to unshakeable beliefs. Journal of Experimental Social Psychology, 19, 93-108.
- Anderston, C. A., Lepper, M. R., & Ross, L. (1980). Perseverance of social theories: The role of explanation in the persistence of discredited information. Journal of Personality and Social Psychology, 39, 1037-1049.
- Barclay, A. M. (1969). The effect of hostility on physiological and fantasy responses. Journal of Personality, 37, 551-567.
- Barclay, A. M. (1970). The effect of female aggressiveness on aggressive and sexual fantasies. Journal of Projective Techniques and Personality Assessment, 34, 19-26.
- Barclay, A. M., & Haber, R. N. (1965). The relation of aggressive to sexual motivation. Journal of Personality, 33, 462-475.

- Baron, R. A., & Byrne, D. (in press). Social psychology: Understanding human interaction (5th ed.). Boston: Allyn and Bacon.
- Bryant, J. (1985, September). Testimony on the effects of pornography: Research findings. Paper presented at the U. S. Justice Department Hearings, Houston.
- Burt, C. (1966). The genetic determination of differences in intelligence: A study of monozygotic twins reared together and apart. British Journal of Psychology, 57, 137-153.
- Byrne, D. (1971). The attraction paradigm. New York: Academic Press.
- Byrne, D. (1982). Predicting human sexual behavior. In A. G. Kraut (Ed.), The G. Stanley Hall lecture series (Vol. 2, pp. 207-254). Washington, DC: American Psychological Association.
- Byrne, D. (1983). The antecedents, correlates, and consequents of erotophobia-erotophilia. In C. M. Davis (Ed.), Challenges in sexual science (pp. 53-75). Philadelphia: Society for the Scientific Study of Sex.
- Byrne, D., Clore, G. L., & Smeaton, G. (in press). The attraction hypothesis: Do similar attitudes affect anything? Journal of Personality and Social Psychology.
- Byrne, D., Fisher, J. D., Lamberth, J., & Mitchell, H. E. (1974). Evaluations of erotica: Facts or feelings? Journal of Personality and Social Psychology, 29, 111-116.
- Byrne, D., & Kelley, K. (1984a). Pornography and sex research. In N. M. Malamuth & E. Donnerstein (Eds.), Pornography and sexual aggression (pp. 1-15). New York: Academic Press.

- Byrne, D., & Kelley, K. (1984b). The role of case histories in psychosexology. In P. R. Abramson, Sarah: A sexual biography (pp. 1-12). Albany, NY: SUNY Press.
- Byrne, D., & Lamberth, J. (1971). Cognitive and reinforcement theories as complementary approaches to the study of attraction. In B. I. Murstein (Ed.), Theories of attraction and love (pp. 59-84). New York: Springer.
- Byrne, D., & Murnen, S. (in press). Maintaining loving relationships. In R. J. Sternberg & M. L. Barnes (Eds.), The anatomy of love. New Haven, CT: Yale University Press.
- Byrne, D., Rasche, L., & Kelley, K. (1974). When "I like you" indicates disagreement: An experimental differentiation of information and affect. Journal of Research in Personality, 8, 207-217.
- Clore, G. L., & Byrne, D. (1974). A reinforcement-affect model of attraction. In T. L. Huston (Ed.), Foundations of interpersonal attraction (pp. 143-170). New York: Academic Press.
- Fisher, W. A., & Byrne, D. (1978). Individual differences in affective, evaluative, and behavioral responses to an erotic film. Journal of Applied Social Psychology, 8, 355-365.
- Fisher, W. A., Byrne, D., & White, L. A. (1983). Emotional barriers to contraception. In D. Byrne & W. A. Fisher (Eds.), Adolescents, sex, and contraception (pp. 207-239). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Fisher, W. A., Byrne, D., White, L. A., & Kelley, K. (1986). Erotophobia-erotophilia as a dimension of personality. Manuscript submitted for publication.

- Goddard, H. H. (1912). The Kallikak family, a study in the heredity of feeble-mindedness. New York: Macmillan.
- Goddard, H. H. (1913). The Binet tests in relation to immigration. Journal of Psycho-Asthenics, 18, 105-107.
- Goddard, H. H. (1917). Mental tests and the immigrant. Journal of Delinquency, 2, 243-277.
- Goldstein, M. J., Kant, H. S., & Hartman, J. J. (1974). Pornography and sexual deviance. Berkeley: University of California Press.
- Goleman, D. (1986, April 8). Studies point to power of nonverbal signals. New York Times, C-1, C-6.
- Gould, S. J. (1981). The mismeasure of man. New York: W. W. Norton.
- Green, R. (1985, September). Exposure to explicit sexual materials and sexual assault: A review of behavioral and social science research. Paper presented at the U. S. Justice Department Hearings, Houston.
- Greendlinger, V. (1985). Dispositional and situational variables as predictors of rape proclivity in college men. Unpublished doctoral dissertation, State University of New York at Albany.
- Hearnshaw, L. S. (1979). Cyril Burt, psychologist. Ithaca, NY: Cornell University Press.
- Heiby, E., & Becker, J. D. (1980). Effect of filmed modeling on the self-reported frequency of masturbation. Archives of Sexual Behavior, 9, 115-121.
- Kamin, L. J. (1977). Burt's IQ data. Science, 195, 246-248.

- Kelley, K. (1979). Socialization factors in contraceptive attitudes: Roles of affective responses, parental attitudes, and sexual experience. Journal of Sex Research, 15, 6-20.
- Kelley, K. (1985a). Sex, sex guilt, and authoritarianism: Differences in responses to explicit heterosexual and masturbatory slides. Journal of Sex Research, 21, 68-85.
- Kelley, K. (1985b). Sexuality and hostility of authoritarians. The High School Journal, 68, 173-176.
- Kelley, K. (1985c, September). Testimony presented to the U. S. Attorney General's Commission on Pornography. Paper presented at the U. S. Justice Department Hearings, Houston.
- Kelley, K. (1985d). The effects of sexual and/or aggressive film exposure on helping, hostility, and attitudes about the sexes. Journal of Research in Personality, 19, 472-483.
- Kelley, K. (1985e). Sexual fantasy and attitudes as functions of sex of subject and content of erotica. Imagination, Cognition, and Personality, 4, 339-347.
- Kelley, K. (1985f). Sexual attitudes as determinants of the motivational properties of exposure to erotica. Personality and Individual Differences, 6, 391-393.
- Kelley, K., & Byrne, D. (1983). Assessment of sexual responding: Arousal, affect, and behavior. In J. Cacioppo & R. Petty (Eds.), Social psychophysiology (pp. 467-490). New York: Guilford.
- Kelley, K., Byrne, D., Greendlinger, V., & Przybyla, D. P. J. (1986). Informational versus imaginal stimulus presentations as determinants of acquisition. Manuscript submitted for publication.

- Kelley, K., Byrne, D., Przybyla, D. P. J., Eberly, C. C., Eberly, B. W., Greendlinger, V., Wan, C. K., & Gorsky, J. (1985). Chronic self-destructiveness: Conceptualization, measurement, and initial validation of the construct. Motivation and Emotion, 9, 135-151.
- Kelley, K., & Musialowski, D. (in press). Repeated exposure to sexually explicit stimuli: Novelty, sex, and sexual attitudes. Archives of Sexual Behavior.
- Kuhn, T. S. (1962). The structure of scientific revolutions. Chicago: University of Chicago Press.
- Kutchinsky, B. (1985). Pornography and its effects in Denmark and the United States. Comparative Social Research, 8.
- MacLean, P. D. (1965). New findings relevant to the evolution of psychosexual functions of the brain. In J. Money (Ed.), Sex research: New developments. New York: Holt, Rinehart, and Winston.
- Malamuth, N. M., Check, J. V. P., & Briere, J. (1986). Sexual arousal in response to aggression: Ideological, aggressive, and sexual correlates. Journal of Personality and Social Psychology, 50, 330-340.
- Mandler, G., & Shebo, B. J. (1983). Knowing and liking. Motivation and Emotion, 7, 125-144.
- Marshall, W. L. (1985, September). The use of pornography by sex offenders. Paper presented at the U. S. Justice Department Hearings, Houston.
- Masters, W. H., & Johnson, V. E. (1966). Human sexual response. Boston: Little, Brown.

- Masters, W. H., & Johnson, V. E. (1979). Homosexuality in perspective. Boston: Little, Brown.
- Mosher, D., & Anderson, R. D. (1986). Macho personality, sexual aggression, and reactions to guided imagery of realistic rape. Journal of Research in Personality, 20, 77-94.
- Mosher, D. L., & Sirkin, M. (1984). Measuring a macho personality constellation. Journal of Research in Personality, 18, 150-163.
- Mullen, B., Futrell, D., Stairs, D., Tice, D., Baumeister, R., Dawson, K., Riordan, C., Radloff, C., Kennedy, J., & Rosenfeld, P. (in press). Newscasters' facial expressions and voting behavior of viewers: Can a smile elect a president? Journal of Personality and Social Psychology.
- Nemetz, G. H., Craig, K. D., & Reith, G. (1978). Treatment of female sexual dysfunction through symbolic modeling. Journal of Consulting and Clinical Psychology, 46, 72-73.
- Photo magazine censored in Kansas. (1986, May 19). New York, pp. 9-10.
- Przybyla, D. P. J. (1985). The facilitating effects of exposure to erotica on male prosocial behavior. Unpublished doctoral dissertation, State University of New York at Albany.
- Report: Pornography can lead to violence. (1986, May 14). New York Times.
- Robinson, M. (1985). Jesse Helms, take stock: Study shows Rather bears no liberal bias. Washington Journalism Review, 7, 14-17.

- Smeaton, G., & Byrne, D. (1986). The effects of "R"-rated violence and erotica, individual differences, and victim characteristics on acquaintance rape proclivity. Manuscript submitted for publication.
- Stout, H. R. (1885). Our family physician. Peoria, IL: Henderson and Smith.
- Sweeney, P. D., & Gruder, K. L. (1984). Selective exposure: Voter information preferences and the Watergate affair. Journal of Personality and Social Psychology, 46, 1208-1221.
- Terman, L. M. (1916). The measurement of intelligence. Boston: Houghton Mifflin.
- Walling, W. H. (1904). Sexology. Philadelphia: Puritan.
- White, L. A. (1979). Erotica and aggression: The influence of sexual arousal, positive affect, and negative affect on aggressive behavior. Journal of Personality and Social Psychology, 37, 591-601.
- Wishnoff, R. (1978). Modeling effects of explicit and nonexplicit sexual stimuli on the sexual activity and behavior of women. Archives of Sexual Behavior, 7, 455-461.
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. American Psychologist, 35, 151-175.
- Zillmann, D., & Bryant, J. (1984). Effects of massive exposure to pornography. In N. M. Malamuth & E. Donnerstein (Eds.), Pornography and sexual aggression (pp. 115-138). New York: Academic Press.