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# Altruism and Society: A Social Learning Perspective\*

*J. Philippe Rushton*

## INTRODUCTION: ALTRUISM AS A UNIVERSAL VALUE

An influential and perhaps dominant view of ourselves as a species focuses more on the aggressive and destructive sides of our nature than on the more positive ones. This is probably a legacy from Freud and the popular ethologists such as Konrad Lorenz and Desmond Morris and also the result of the antisocial behaviors that we *do* see or hear about. I suggest that the resulting perception of ourselves is wrong. Rather, human beings might better be characterized as helpful, cooperative, empathic, loving, kind, and considerate. It is not for this reason that acts of violence and destruction result so readily in moral outrage and behavior?

Altruism—concern for others—is a virtually universal value in all human societies and forms the basic tenet of most of the world's great religious, social reformist, and revolutionist movements. From Christianity we have “do unto others as you would have them do unto you” and “greater love hath no man than this, that a man lay down his life for his friend.” From Article 73 of the United Nations Charter we have “members of the United Nations which have or assume responsibility for . . . territories whose people have not yet attained a full measure of self-government . . . accept as a sacred trust the obligation to promote to the utmost . . . the well being of the inhabitants of the territories.” Thus it is recognized that even a state can be under a moral obligation to help not only other states but also communities that are hardly nation-states at all.

Before attempting to define altruism formally, let us consider several examples of what we might wish to include under its rubric. One inclusion would be highly noteworthy acts of rescue behavior. In 1904 the Carnegie Hero Fund Commission was established to award medals for “outstanding acts of selfless heroism performed in the United States and Canada.” The requirements for receiving a Carnegie Medal are that (1) the act is voluntary, (2) the actor has to risk his or her own life to an extraordinary degree, (3) the actor must not be directly related to the

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victim, and (4) the actor must not be in an occupational role in which duty would have required the act to have been performed (such as the police or lifeguards). In 1977 the commission awarded fifty-six medals for acts of outstanding heroism. One example from the commission's 1977 annual report will illustrate.

*Bronze Medal awarded to Billie Joe McCullough, who helped to save Bradley T. VanDamme from burning, Fulton, Ill., October 10, 1975.* In a one-car accident at night, VanDamme, aged 19, unconscious from injuries received, was in the right front seat of a station wagon on which flames burned across the rear and along the passenger side. McCullough, aged 22, laborer, and another man ran to the vehicle, where the driver's door had been torn off. Flames had spread into the front seat area. Kneeling on the seat, McCullough and the other man with some difficulty freed VanDamme, who was afire, and removed him from the vehicle, which soon afterward was engulfed in flames. VanDamme was hospitalized for injuries and extensive burns. He recovered.<sup>1</sup>

Wartime, too, often provides occasions for altruistic behavior. The most extreme kind is giving one's own life in order to save others. There is considerable evidence that this occurs. The highest award in the United States Army is the Congressional Medal of Honor. This has been awarded posthumously on several occasions for such actions as throwing one's body on a live hand grenade and muffling the explosion, thus saving the lives of comrades who otherwise would have been hit by the blast. The Japanese *kamikaze* pilot who flew his plane into an American vessel during World War II provides another example.

Organ transplants also allow for acts of altruistic donation. For example, hundreds of people live with only one kidney, having donated the other to someone who would have died without the transplant. Many kidney donors have been studied. Among the findings is that the decision to give was made almost instantaneously. The donor did not have to ponder the merits and costs or the worthiness of the potential recipient. It was a clear and obvious choice for them to give, they "couldn't refuse."<sup>2</sup> A less extreme form of medical donation is the thousands of individuals who habitually donate their blood at some cost and inconvenience to themselves so that others may benefit.

Much altruistic behavior goes on in quite everyday circumstances, most of which is taken for granted. A number of published studies allow us to assess the amount of this kind of altruism. For example, the overwhelming majority of passersby will give the time, directions, and even

1. Carnegie Hero Fund Commission, Annual Report, 1977. Address: 1932 Oliver Building, Pittsburgh, Pennsylvania 15227.

2. C. H. Fellner and J. R. Marshall, "Twelve Kidney Donors," *Journal of the American Medical Association* 206 (1968): 2703-7.

money to people who request it.<sup>3</sup> Even on the New York subway people are altruistic; in one study, the investigator fell to the ground pretending to have a knee injury. When this happened, 83 percent of the people in the subway car offered their help.<sup>4</sup> Three- to five-year-old children also engage in altruistic behavior toward both peers and teachers. In one study of twenty-six preschoolers, over thirty hours of free-play activity were observed. It was found that each child engaged in an act of cooperation, sharing, helping, or comforting on average fifteen and one-half times per hour.<sup>5</sup> Altruistic behavior is a very human activity, it occurs at a very high rate and is ubiquitous.

## THE DEFINITION OF ALTRUISM

What do all these acts of rescue, sacrifice, donation, and helping have in common to warrant their inclusion in the superordinate category of altruism? One common characteristic is that they are all behaviors that benefit another. One formal definition proposed by two psychologists is "behavior carried out to benefit another without anticipation of rewards from external sources."<sup>6</sup> This defines altruism in terms of both intention and behavior and is probably a typical definition among psychologists. Not all behavioral scientists would accept this, however. Sociobiologists, for example, define altruism only in terms of behavior: in other words, if an organism's acts increase the survival of another organism at the expense of the altruist, then that act is by definition altruistic. There are no intentions involved. In this way even plants could be altruistic. (Plants would be altruistic if, for example, they suppressed their own growth in favor of that of another plant.)<sup>7</sup> Still other behavioral scientists have stipulated that altruism is not a property of *behavior* at all but rests entirely on the *intentions* behind the action. Indeed, some have required that the intention rest on the particular motivational state of empathy before it can be called "true" altruism.<sup>8</sup>

The definition that I personally find most useful is "social behavior carried out to achieve positive outcomes for another rather than for the

3. B. Latané and J. M. Darley, *The Unresponsive Bystander: Why Doesn't He Help?* (New York: Appleton-Century-Crofts, Inc., 1970); J. P. Rushton, "Urban Density and Altruism: Helping Strangers in a Canadian City, Suburb, and Small Town," *Psychological Reports* 43 (1978): 987-90.

4. I. M. Piliavin, J. Rodin, and J. A. Piliavin, "Good Samaritanism: An Underground Phenomenon?" *Journal of Personality and Social Psychology* 13 (1969): 289-99.

5. F. F. Strayer, S. Wareing, and J. P. Rushton, "Social Constraints on Naturally Occurring Preschool Altruism," *Ethology and Sociobiology* 1 (1979): 3-11.

6. J. Macaulay and L. Berkowitz, eds., *Altruism and Helping Behavior* (New York: Academic Press, 1970), p. 3.

7. M. Ridley and R. Dawkins, "The Natural Selection of Altruism," in *Altruism and Helping Behavior*, ed. J. P. Rushton and R. M. Sorrentino (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1981).

8. J. Aronfreed, *Conduct and Conscience* (New York: Academic Press, 1980).

self." In this formulation, egoism is at the opposite end of the continuum from altruism and is defined as "social behavior carried out to achieve positive outcomes for the self rather than for another."<sup>9</sup> Such a definition certainly will not satisfy everybody, and particularly not those who prefer to define altruism in terms of particular forms of intention. However, keeping to a definition in primarily objective, behavioral terms certainly does not preclude a search for the possible psychological motivations that activate the behavior. Indeed two such postulated internal mechanisms will be discussed shortly. For the present, however, let us note that there is a class of behaviors which are carried out that benefit others, that most people consider such behavior by their peers a virtue, and that it is useful to have a word for such behavior, and "altruism" is the one designated. To the behavioral scientist as well as to the social engineer, such behaviors are of great interest. Indeed, complex societies cannot exist without a large degree of concern for others on the part of the populace. This article will specify some of the means by which society influences the degree of altruism in existence.

### THE SOCIOBIOLOGY OF ALTRUISM

The behavioral emphasis in the definition of altruism becomes particularly advantageous when we consider altruism in other animal species that, like our own, live in social groups. These vary from the social insects such as ants, bees, and wasps, through to birds, dogs, dolphins, and chimps. All these species engage in considerable amounts of behavior we would call altruistic if they were engaged in by humans. Examples include parental care, mutual defense, rescue behavior, cooperative hunting, and sharing food. It is the social insects such as the ants that are the most altruistic. If nest walls are broken open, soldier ants pour out and engage in combat with foraging ants from other nests. Meanwhile, behind them, worker ants repair the broken walls. Many of the soldier and worker ants will die in combat, sacrificing their lives in order to save their nest mates.

Altruism in animals presents a problem for theories of evolution. Darwin's theory, for example, stresses natural selection and survival of the "fittest" individuals. How then do behaviors arise, such as altruism, that appear to diminish the personal fitness of individual's engaging in them? The final solution to this paradox is of only recent origin and involves the concept of *kin selection*. Genes survive and are passed on in offspring. If an animal sacrifices its own life for its sibling's offspring, it ensures the survival of common genes, for it shares 50 percent of its genes with its sibling and 25 percent with its nephew or niece. The percentage of genes shared therefore should be an important influence on the amount of altruism displayed. The case of the social ants makes this clear. Female worker ants tend to be sterile for most of their lives and engage in much altruistic self-sacrifice for their sisters. As mentioned before, they are the most altruistic species so far discovered. They also share three-fourths of their genes

9. Rushton, *Altruism*, p. 8.

with their sisters. By devoting their entire existence to the needs of others and sacrificing their lives if need be, they are in fact helping to propagate their own genes. They do this not through self-reproduction (the original Darwinian idea of *individual* fitness) but by helping the reproductive success of those with whom they share genes (the newer idea of *inclusive* fitness). Thus the appropriate analysis for understanding natural selection is the gene rather than the individual organism. As Wilson dryly put it, "The organism is only DNA's way of making more DNA" (p. 3).<sup>10</sup> Dawkins, a popularizer of sociobiology, even titled his book *The Selfish Gene*.<sup>11</sup> Any means by which a pool of genes, in a number of individuals, can be transmitted more effectively into the next generation will be adopted. Here, it is suggested, are the origins of self-sacrificial altruism. Altruism is simply a phenomenon by which genes can be more readily transmitted, a mechanism by which DNA multiplies itself more effectively.

Critics might question how behaviors such as running into burning automobiles to rescue strangers from otherwise certain death are explained by such a theory. The answer lies in human history. One and a half million years ago, when human altruism evolved, such dramatic behaviors did in fact propagate the actor's own genes because people lived within a tribe of individuals who all were more or less directly related to one another. Today our genes are still fulfilling the same function, as though the stranger were more genetically similar to us than he or she in fact is.

Although evolutionary theory suggests that the basic (genetic) nature of *Homo sapiens* is altruistic it must be emphasized that much of human behavior is acquired through social learning. This is particularly necessary to emphasize when we consider the question of individual differences in altruism. Unlike the social insects, I would argue, we are altruistic primarily because we have learned to be so, being genetically programmed to learn from our environments.

## MOTIVATIONS TO BE ALTRUISTIC

Altruism was defined earlier in behavioral terms, that is, as "social behavior carried out to achieve positive outcomes for another rather than for the self." Another way of looking at the question of altruism is to examine the psychological mechanisms activating the behavior. Most of the research literature concerned with altruism can be usefully organized under one of the two motivational systems of empathy and personal standards.<sup>12</sup> Empathy can be defined as the matching or understanding of A's emotion by B. This occurs either directly, as a result of immediate cues, or cognitively, through role taking. Personal standards can be defined as internalized rules by which events are judged and on that basis approved or disap-

10. E. O. Wilson, *Sociobiology: The New Synthesis* (Cambridge, Mass.: Harvard University Press, 1975).

11. R. Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976).

12. Rushton, *Altruism*, pp. 36-57.

proved. Three types of standards have been posited to account for human altruism: those of social responsibility, of equity, and of reciprocity.

Postulating motivations to be altruistic helps to organize disparate data. These motivational systems, however, are "hypothetical constructs"; that is, they cannot be observed directly. They are postulated in order to "explain" the regularities in behavior that can be observed. Let us examine a couple of illustrative studies from each motivational base.

### *A. Empathy*

In one study demonstrating a correlation between empathy and altruism, the psychophysiology (skin conductance, blood pulse, heart rate) of observers was measured as they observed a supposedly similar or dissimilar other win money and experience painful shocks while playing a game.<sup>13</sup> Those who believed they were similar to the performer reacted more strongly than did those who believed they were different from him. Those feeling "similar" also reported identifying more with the performer and feeling worse while he waited to be shocked. When subsequently required to choose between helping themselves at a cost to the performer or helping the performer at a cost to themselves, those who previously had reacted the most empathically now behaved the most altruistically! In another study on this topic, participants were given false feedback about their level of emotional arousal while listening to a broadcast in which a person needed help. Those who were led to believe they were experiencing the most emotional arousal were the most likely to offer their help.<sup>14</sup> Thus these two studies demonstrate the importance of "empathy" for motivating helping behavior.

### *B. Standards of Appropriate Behavior*

One way in which it is possible to examine whether there are particular rules is to break them and see what happens. If there is a rule in operation, some form of restitution might be expected to occur. A number of experiments induced people to break "the norm of social responsibility" by causing them unintentionally to harm another person. In one, students were led to believe that they had delivered either shocks or only loud buzzes to another person during the course of an experiment on "learning under punishment." After the "learning" part of the study was over, the student and the other person were asked to fill out a brief questionnaire. While they were filling out these questionnaires, the other person turned to the student and asked him to help make a number of telephone calls to enlist support to save the California redwood trees. The results are very impressive. Only one-quarter of the students who had delivered buzzes agreed to take any names, but three-quarters of those who had delivered

13. D. L. Krebs, "Empathy and Altruism," *Journal of Personality and Social Psychology* 32 (1975): 1134-46.

14. J. S. Coke, C. D. Batson, and K. McDavis, "Empathic Mediation of Helping: A Two Stage Model," *Journal of Personality and Social Psychology* 36 (1978): 752-66.

shocks were willing to help.<sup>15</sup> In another study, it was found that students induced to tell a lie subsequently administered more shocks to themselves than those who did not lie.<sup>16</sup> Finally, in a field experiment some individuals were reprimanded either for touching art objects in violation of museum rules or for feeding unauthorized food to animals in a zoo. Those who were reprimanded subsequently helped another person more than those not reprimanded. Furthermore, the more severe the reprimand was, the more the person subsequently helped.<sup>17</sup>

## THE ALTRUISTIC PERSONALITY

In the previous section, two major motivations for altruism—empathy and personal standards—were discussed. The question arises: are some people more empathic and/or normatively altruistic than others; that is, is there such a thing as “the altruistic personality”? In order to answer this question we first must ask a preliminary question in regard to whether there is any consistency in altruistic behavior: do people who tend to be altruistic in one situation also tend to be altruistic in others?

For several decades there have been two opposing viewpoints on the question of whether human behavior is generally consistent in different situations. Known as the “specificity versus generality” controversy, the question has loomed particularly large in the area of personality and moral behavior. The classic study of this problem was the enormous “Character Education Inquiry” carried out in the 1920s and published from 1928 to 1930 in three books: *Studies in Deceit*, *Studies in Service and Self-Control*, and *Studies in the Organization of Character*.<sup>18</sup> In this study eleven thousand elementary and high school students were given some thirty-three different behavioral tests of their altruism, self-control, and honesty in home, classroom, church, play, and athletic contexts. At the same time, extensive ratings of the children’s reputations with their teachers and their classmates were made in all these areas. By intercorrelating the children’s scores on all these tests it was possible to discover whether their behavior was specific to situations or generalizable. If their behavior is specific to situations, then the correlations across situations should be extremely low or even nonexistent. If their behavior is general-

15. J. M. Carlsmith and A. E. Gross, “Some Effects of Guilt on Compliance,” *Journal of Personality and Social Psychology* 11 (1969): 232-40.

16. S. A. Wallington, “Consequences of Transgressions: Self-Punishment and Depression,” *Journal of Personality and Social Psychology* 28 (1973): 1-7.

17. R. Katzev et al., “The Effect of Reprimanding Transgressions on Subsequent Helping Behavior: Two Field Experiments,” *Personality and Social Psychology Bulletin* 4 (1978): 326-29.

18. H. Hartshorne and M. A. May, *Studies in the Nature of Character*, vol. 1, *Studies in Deceit* (New York: Macmillan Publishing Co., 1928); H. Hartshorne, M. A. May, and J. B. Maller, *Studies in the Nature of Character*, vol. 2, *Studies in Self-Control* (New York: Macmillan Publishing Co., 1929); H. Hartshorne, M. A. May, and F. K. Shuttlesworth, *Studies in the Nature of Character*, vol. 3, *Studies in the Organization of Character* (New York: Macmillan Publishing Co., 1930).



izable across situations, then the correlations should be substantial. Thus, there is a crucial test of the generality hypothesis.

The study found that any one behavioral test correlated, on average, only a low  $+0.20$  with any one other behavioral test. This led the investigators to conclude that there was very little consistency to moral behavior, that is, the person who was altruistic or honest in one situation was not necessarily the person who was altruistic or honest in other situations. It appeared as though moral behavior varied as a result of situational variables and was not due to personality. Many subsequent investigators have endorsed this conclusion. We now know, however, that this conclusion is erroneous. One of the basic tenets of psychological assessment theory is that in order to get stable and orderly measurements you must sample over a number of examples so that random noise (called "error variance") is averaged out. If the original data of the 1928-30 "Character Education Enquiry" are examined more closely one finds that, in fact, there is quite a reasonable amount of consistency to altruistic, honest, and moral behavior.<sup>19</sup> For example, if the five behavioral measures of the child's altruism are combined into a battery, this correlates a high  $+0.61$  with the measures of the child's altruistic reputation among his or her teachers and classmates. Furthermore, the teacher's perceptions of the students' altruism agree extremely highly ( $r = +0.80$ ) with that of the students' peers. Correlations of this magnitude are really quite high and allow for predicting what a person will do in a new situation from knowledge of how he has behaved in other situations in the past.

Many other studies have found very similar results: the typical correlation between any two behavioral indices of altruism is about  $+0.30$ , whereas combining measures leads to a substantially greater degree of predictability. Thus, some people *are* consistently more altruistic than others. Furthermore, knowledge of individual differences in empathy and personal standards allows prediction of altruistic behavior. Let us consider some representative studies.

### *A. Empathy*

Studies carried out with both high school and university students have found that the way in which the students completed a thirty-three-item empathy questionnaire predicted whether they would engage in altruistic behavior. The empathy questionnaire consisted of such positively keyed items as "it makes me sad to see a lonely stranger in a group" and "I really get involved with the feelings of the character in a novel" and negatively keyed items as "I find it silly for people to cry out of happiness." The measures of altruistic behavior included whether the person would administer a high level of electric shock to another person when ordered to do so, volunteering to help an emotionally upset person, and helping out in a

19. Rushton, *Altruism*, pp. 63-64.

dull, hour-long task.<sup>20</sup> In another study, carried out with prisoners, it was found that groups characterized as high in "psychopathy" (as measured on the Minnesota Multiphasic Personality Inventory [MMPI] Psychopathic deviate [Pd] scale) were far less autonomically responsive (as measured by heart rate and skin conductance) to the sight of emotional distress in others than those low in psychopathy.<sup>21</sup> This study therefore supported the often-stated proposition that psychopaths are indifferent to the feelings of others.

### *B. Standards of Appropriate Behavior*

The "Character Education Inquiry," mentioned earlier, found a positive relationship between the children's knowledge of, and agreement with, general moral rules and their prosocial behaviors. More recently, a variety of researchers have attempted to measure personal standards such as the norm of social responsibility among adults. They administered questionnaires composed of items such as "I am the kind of person people can count on" and "if a good friend of mine wanted to injure an enemy of his, it would be my duty to stop him." Subsequently, they investigated whether responses to such questions predicted a variety of altruistic acts ranging from making cardboard boxes for someone allegedly dependent on the person for his or her help, to helping a victim in a faked epileptic seizure situation, to donating money to a charity.<sup>22</sup>

Of particular interest in one study was the finding that individuals who scored high on measures of moral reasoning, as assessed by Kohlberg's dilemmas, also scored high on traditional questionnaires of moral attitudes and engaged in more helping in a situation that allowed for such behavior.<sup>23</sup> Many other studies also have found that individuals with "high" levels of moral judgment, as assessed in response to both Kohlbergian and Piagetian dilemmas, are the ones who are the most altruistic in their behavior. These studies differed considerably from each other in terms of the age range tested, the measures of moral judgment used, and the indices of altruistic behavior assessed.<sup>24</sup> In one study, for example, the moral reasoning of adults was measured by Kohlberg's moral dilemmas

20. A. Mehrabian and N. Epstein, "A Measure of Emotional Empathy," *Journal of Personality* 40 (1972): 525-43; N. Eisenberg-Berg and P. Mussen, "Empathy and Moral Development in Adolescence," *Developmental Psychology* 14 (1978): 185-86.

21. T. H. House and W. L. Milligan, "Autonomic Responses to Modeled Distress in Prison Psychopaths," *Journal of Personality and Social Psychology* 34 (1976): 556-60.

22. L. Berkowitz and L. R. Daniels, "Responsibility and Dependency," *Journal of Abnormal and Social Psychology* 66 (1963): 429-36; S. H. Schwartz and G. T. Clausen, "Responsibility, Norms, and Helping in an Emergency," *Journal of Personality and Social Psychology* 16 (1970): 229-310; E. Midlarsky and J. H. Bryan, "Affect Expression and Children's Imitative Altruism," *Journal of Experimental Research in Personality* 6 (1972): 195-203.

23. E. Staub, "Helping a Distressed Person: Social, Personality, and Stimulus Determinants," in *Advances in Experimental Social Psychology*, ed. L. Berkowitz (New York: Academic Press, 1974), vol. 7.

24. Rushton, *Altruism*, pp. 75-81.

test, and the measure of altruism was whether the subjects mailed back a questionnaire to the experimenter at some minor inconvenience to themselves. Whereas over 90 percent of those at stages 4 and 5 helped in this way, only 40 percent of those at stages 2 and 3 did so.<sup>25</sup> Thus, there is now extensive evidence that knowledge of a person's stage of moral reasoning allows prediction of how considerate of others he will be.<sup>26</sup> The explanation for this relationship, from a social learning perspective, is that moral judgments derive from cognitive rules that have been acquired through social learning. In this way the literature on "moral reasoning" connects with the literature on the internalization of moral standards and personal norms. Perhaps it is now time to turn to social learning theory itself.

## THE SOCIAL LEARNING OF PROSOCIAL BEHAVIOR AND MORAL JUDGMENTS

### A. Overview

From a social learning theory point of view, the degree to which a person engages in altruistic behavior as well as the frequency and patterning of that behavior and the motivations underlying it are largely determined by the social learning history of that person. In other words, a person is honest, generous, helpful, and compassionate to the degree to which he has learned to be so. Thus, moral responses are acquired in much the same way as are other types of social behavior—through "the laws of learning." In order to understand how people develop consideration for others, it is necessary to understand these laws and processes. It must be stated at the outset, however, that there are many, rather different, theories of social learning that differ among themselves on such issues as what the most important processes of learning are, what the hypothetical products of learning are, and how important genetic factors are.

Although differences do exist among learning theorists, perhaps it is the similarities that are more striking. The essential similarities appear to be (a) the focus on observable behavior as the phenomena to be explained; (b) the focus on the laws governing the acquisition, maintenance, and modification of observable behavior (i.e., the "laws of learning"); and (c) a preference for analyzing and coming to an understanding of behavior through experimentation and scientific method.

Some of the ways in which children and adults have learned to be prosocial will now be considered. Four procedures of learning will be outlined: classical conditioning, observational learning, reinforcement learning, and learning from such verbal procedures as instructions and preaching.

25. D. L. Krebs and A. Rosenwald, "Moral Reasoning and Moral Behavior in Conventional Adults," *Merrill-Palmer Quarterly of Behavior and Development* 23 (1977): 77-87.

26. A. Blasi, "Bridging Moral Cognition and Moral Action: A Critical Review of the Literature," *Psychological Bulletin* 88 (1980): 1-45.

*B. Classical Conditioning: The Learning of Emotional Responses*

Initially most stimulus events in a child's environment are emotionally "neutral" to him. By the time the child is an adult, however, the range of significant emotional stimuli has increased considerably. The simplest procedure by which this might come about is through classical or Pavlovian conditioning. In this analysis, positive or negative associations are formed between stimuli presented together. For example, an initially neutral stimulus comes to acquire a positive or negative valence as a result of having been associated in time with one already valenced. For example, the aroma of cooking can result either in the digestive juices flowing or in feelings of nausea, depending on the previous associations of the smell with delicious or nauseating food.

The process of positive and aversive classical conditioning helps to explain the acquisition, elimination, and change of a variety of emotional reactions, including those of fear and anxiety, attitudes and other evaluative responses, and interpersonal and sexual attraction. More important, for present purposes, Pavlovian procedures have also been used to develop empathy.

In one experiment, with six- and eight-year-old girls, a pleasurable feeling in the child was attached to the joyous verbalizations of an adult.<sup>27</sup> In the critical experimental condition, whenever an adult joyously said "There's the light," she hugged the child. Later, under testing conditions, the child who had had this conditioning preferred to press a lever that resulted in the adult joyously saying "there's the light" than a lever that resulted in candy for the child. By contrast, in control conditions in which the joyous verbalization of "there's the light" had not been associated with hugging and subsequent pleasure for the child, the child pressed the lever for candy. In an experiment on empathic distress, seven- and eight-year-old girls heard verbal expressions of distress by an adult who clutched her ears and grimaced while listening to noise.<sup>28</sup> In one condition the child experienced the aversive noise in association with the distress cues of the adult, while in another condition she did not. In a series of test trials, the child was faced with another person who showed distress. When this happened, children who had gone through the appropriate conditioning trials helped the person more than those who had not had the empathy training.

*C. Observational Learning of Prosocial Behavior*

From a social learning perspective, the overwhelming majority of human social behavior is learned from observing others. Observational learning has been well documented in numerous studies covering a very wide range

27. J. Aronfreed, "The Socialization of Altruistic and Sympathetic Behavior: Some Theoretical and Experimental Analyses," in *Altruism and Helping Behavior*, ed. J. Macaulay and L. Berkowitz (New York: Academic Press, 1970).

28. Ibid.

of behaviors from aggression to language acquisition to psychopathology.<sup>29</sup> Learning from the observation of others also has been shown to be a powerful influence on prosocial behavior.<sup>30</sup> One or two of these studies will be discussed here.

One procedure for investigating the observational learning of altruism involves a game in which children are able to win tokens exchangeable for prizes at the end of the game—the more tokens, the better the prize given. The tokens, therefore, are of some value to the children. At a later time the children are given the opportunity of anonymously donating some of their tokens to a charity. This test of children's generosity appears to be, psychometrically, both reliable and valid.<sup>31</sup> It is within this type of setting that observational learning can be studied. For example, children may see an adult playing the same game and then behaving generously or selfishly with the tokens won. The results of numerous studies carried out in such situations demonstrate that children readily internalize the patterns of generosity or selfishness to which they are exposed. Furthermore, such effects have been shown to endure across both time and situation. For example, in one study children exposed to generous models donated nearly 50 percent of their winnings whereas those exposed to selfish models donated less than 5 percent of theirs (compared with their normal tendency, in this situation, to give about 25 percent).<sup>32</sup> In a subsequent study, children were exposed to a model who donated either 0, 13, or 50 percent of his tokens to a charity.<sup>33</sup> The results demonstrated that children readily learned what the "appropriate" standard was for donating.

Many other studies have demonstrated experimentally the "power of positive example" for transmitting new standards of behavior. One showed that preschoolers learned to keep working at a boring task and resist a temptation to play with attractive toys through observation of another.<sup>34</sup> Children who saw someone give in to a temptation were later unable to resist, whereas those who saw a model exhibit self-control were later able to resist temptation. Furthermore, these results endured over time and generalized to a third measure. This experiment, therefore, provided evidence that learning self-control and resisting temptation could

29. A. Bandura, *Social Learning Theory* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1977).

30. J. P. Rushton, "Socialization and the Altruistic Behavior of Children," *Psychological Bulletin* 83 (1976): 898-913.

31. J. P. Rushton and M. Wheelwright, "A Validation Study of a Laboratory Measure of Children's Generosity," *Psychological Reports* 47 (1980): 803-6.

32. J. P. Rushton, "Generosity in Children: Immediate and Long Term Effects of Modeling, Preaching, and Moral Judgment," *Journal of Personality and Social Psychology* 31 (1975): 459-66.

33. J. P. Rushton and C. Littlefield, "The Effects of Age, Amount of Modeling, and a Success Experience on Seven- to Eleven-Year-Old Children's Generosity," *Journal of Moral Education* 9 (1979): 55-56.

34. J. E. Grusec et al., "Learning Resistance to Temptation through Observation," *Developmental Psychology* 15 (1979): 233-40.

also be acquired through the observation of others. Similarly powerful effects of observational learning have been found in adults. In one experiment, modeling significantly increased the number of female observers who (a) volunteered to donate blood (67 vs. 25 percent), and (b) in turn actually gave their blood (33 vs. 0 percent).<sup>35</sup> In this study, the opportunity to actually give blood was not assessed until, on average, six weeks after the commitment and in a setting quite different from the original modeling.

#### *D. Learning through Reinforcement and Punishment*

Modeling is a particularly useful way of getting children to learn. Once children try out what they see others doing the question becomes whether or not they will continue to perform it. To a large extent this rests on the consequences that the children's actions bring for them (i.e., whether they result in positive reinforcement or punishment). A large number of studies have demonstrated that stable behavior patterns can be built up by the rewarding and punishing consequences of the behavior. The central principle of B. F. Skinner's theory of operant behavior is that when an operant (behavior) is followed by reinforcement (reward or avoidance of punishment) the probability of its later occurrence is increased. It now also appears to be true that when an operant is followed by a punishment the probability of its later occurrence is decreased. Several studies have demonstrated this to be true for children's altruism too.<sup>36</sup>

For a long time now punishment as a process of socialization has had short shrift in psychological theorizing, although the tide does seem to be changing to a more balanced view. Recently, more theorists appear to be agreeing with the views of H. J. Eysenck that punishment delivered for antisocial behavior effectively decreases, for example, the frequency of cheating, stealing, and being selfish. Eysenck suggested that punishment is effective because conscience is, in part, a conditioned reflex.<sup>37</sup> Theorists such as Eysenck have argued that the enormous increase in antisocial behavior around the world is due to the general increase in "permissiveness" over the same time period. From punishment people undoubtedly do construct appropriate rules of social conduct, and these then serve to guide their behavior in the future. Mild punishment can be effective in aiding children to generate their own self-regulatory controls. Both social norms and their internalization into personal standards require judgment of what is wrong as well as what is right.

35. J. P. Rushton and A. C. Campbell, "Modeling, Vicarious Reinforcement and Extraversion on Blood Donating in Adults: Immediate and Long-Term Effects," *European Journal of Social Psychology* 7 (1977): 297-306.

36. J. P. Rushton and G. Teachmen, "The Effects of Positive Reinforcement, Attributions, and Punishment on Model Induced Altruism in Children," *Personality and Social Psychology Bulletin* 4 (1978): 322-25.

37. H. J. Eysenck, *Crime and Personality*, 3d ed. (St. Albans, Hertfordshire: Granada Publishing, 1977).

*E. Verbal Procedures Such as Instructions, Preachings, and Reasonings*

Socializing agents spend much of their time preaching the virtues of various actions and instructing and reasoning with their children about how to behave. Several experiments have been carried out demonstrating that such verbal socializing procedures as instructions, preachings, and reasonings can effectively help children to gain control and mastery of their own behavior, thereby curbing selfishness and leading them to act prosocially. There are many theoretical accounts of the way in which verbal socialization works. We shall not deal in detail with them here. It is likely, however, that verbal socialization procedures gain some of their effectiveness by having previously been paired with positive or negative consequences. This is what one review concluded about reasoning: "Children respond to reasoning either to reduce anxiety or to not be punished. A parent who relied solely on reasoning as a disciplinary technique would not be very successful in obtaining response suppression. Reasoning becomes effective only when it is supported by a history of punishment."<sup>38</sup> Perhaps all methods of persuasion are effective to the degree to which they are supported by predictable consequences (positive as well as negative). Certainly if parents preached but paid little subsequent attention to their children's behavior it might be doubted whether their verbalizations would have much impact.

*F. Producing Internalization*

From a social learning perspective, people abstract standards of appropriate conduct from the environmental contingencies to which they are exposed. In this sense, reinforcement and modeling, in addition to their undoubted affective tone, also function in terms of their informational and incentive value. From information about what is likely to be valued, people construct standards of appropriate social behavior. According to this formulation, if people see others rewarding prosocial consideration then this will become internalized as the appropriate standard of behavior. On the other hand, if altruism becomes socially devalued, then the internal standards will be expected to alter. Of course, this does not always happen: often individuals attempt to convince their society that the society's values are wrong.

Rules, or personal standards, are internalized to varying degrees. Those which are held strongly enough to be considered "oughts" are often referred to as "moral principles." Those held in a more abstract way may be referred to as "values," while those held tentatively and felt to be arbitrary are called "social conventions." What leads a person to internalize a rule so strongly that it prescribes an "ought"? Putting it another way, how can we account for the development of integrity, the predictability of a person's behavior from knowledge of his or her moral standards?

38. G. C. Walters and J. E. Grusec, *Punishment* (San Francisco: W. H. Freeman & Co., 1977).

A number of views have been put forward to account for the phenomena of internalization from a social learning perspective. These accounts fall into one of two broad categories: those primarily concerned with "conditioned affect" and those primarily concerned with the cognitive self-system. Without going into details about the precise mechanisms, let us ask if social learning theory can account *at all* for the internalization of moral rules.

### G. *The Social Learning of Moral Judgments*

A number of studies have investigated whether moral judgments can be acquired through modeling and reinforcement. In one study, five- and eleven-year-old children were studied by first giving them pairs of stories such as the following to respond to:<sup>39</sup>

STORY 1: A girl who is named Susan is in her room. She is called to dinner. She starts to go into the dining room, but behind the door there is a chair. On the chair is a tray with 15 cups on it. Susan doesn't know that all of this is behind the door. She pushes on the door, the door knocks against the tray, and bang go the 15 cups! They are all broken.

STORY 2: A girl named Mary wants to get some biscuits. But her mother tells her she can't have any more biscuits, and she leaves. But Mary wants a biscuit, so she climbs up on a chair and reaches up to the shelf. But she knocks over one cup and it falls to the floor and breaks!

QUESTION: Which of the two children is naughtier? Why?

Children with "low" levels of moral judgment think Susan is naughtier because she broke fifteen cups rather than only one. Such children are basing their judgments on the *consequences* of the act. Children with "high" levels of moral judgment, however, think Mary is naughtier because her *intentions* were wrong, regardless of the consequences. According to Piagetian "stage" theory these represent two quite distinct stages of development which are referred to as "objective" and "subjective" morality, respectively.<sup>40</sup>

Having assigned children to one or other of these two categories based on their major way of responding to such stories, the investigators then exposed the children to highly salient models who made judgments in a direction *opposite* to the orientation of the child. Thus children who had previously made judgments based on a rule about the "consequences" of the behavior heard a model make judgments on the basis of the "inten-

39. A. Bandura and F. J. McDonald, "Influences of Social Reinforcement and the Behavior of Models in Shaping Children's Moral Judgments," *Journal of Abnormal and Social Psychology* 67 (1963): 274-81.

40. J. Piaget, *The Moral Judgment of the Child* (London: Routledge & Kegan Paul, 1932).



tions" of the actor, while children who had previously made high moral judgments because they based their judgments on the actor's intentions now heard a prestigious model make "low" judgments based on the consequences of the behavior. After this training session, generalization was tested in another room, where a different adult presented more stories and then recorded the child's responses without praising or commenting on them. The results clearly showed that the children's moral judgments shifted in the direction that they had seen modeled. This was true not only for those children who were moved up from an initially low level to a high level but also for those children who were initially high and were now "reversed" in their orientation. These results were later replicated and extended by other investigators. As an important review of all of this literature recently concluded, "No violence is done by treating all of the preceding studies as cases of rule learning. The essential change was always a shift from an initial rule (e.g., 'judge material damage') to the modeled rule (e.g., 'judge subjective intentions')." <sup>41</sup>

Age trends in moral judgments, therefore, are not, according to the social learning view, the result of sequential stage development so much as they are the reflections of cognitive rules that have been abstracted as a result of modeling and reinforcement contingencies. Adults alter their expectations and subsequent teaching, modeling, and reinforcement of their children as those children grow older. For example, very young children are more likely to be punished according to the amount of consequential damage. As they grow older their intentions will be taken into account, and indeed they will be expected increasingly to provide acceptable reasons for their behavior. This viewpoint provides a crucial theoretical demarcation between the cognitive-developmental and social learning research programs. As described above, much of the empirical literature supports the social learning perspective.

Kohlberg has extended Piagetian thinking into a theory of six "stages" of moral development covering adolescence and adulthood. <sup>42</sup> Descriptively the stages demonstrate a progression to an increasingly ethically altruistic set of internalized norms and, empirically, they show a clear increment with age. If Kohlberg's stages are viewed as only descriptive they can be reconceptualized as degrees of internalization of moral rules. <sup>43</sup> From this perspective each step up a stage is a step up in terms of "strength of internalization" and consequent degree of rule generalizability. Thus at stages 1 and 2 there is extreme specificity of behavior; a rule is generalized only to the next threatened punishment or promised reward. At stage 3, a rule is considerably more generalized and internalized; now it

41. T. L. Rosenthal and B. J. Zimmerman, *Social Learning and Cognition* (New York: Academic Press, 1978).

42. L. Kohlberg, "Stage and Sequence: The Cognitive-Developmental Approach to Socialization," in *Handbook of Socialization Theory and Research*, ed. D. Goslin (Chicago: Rand McNally & Co., 1969).

43. J. P. Rushton, "A Cognitive Social-Learning Approach to the Nature of Morality and Moral Development," unpublished manuscript (University of Western Ontario, 1980).

extends to the peer group and is somewhat resistant to change from mere promises of reward. At stage 4, a rule is generalized even further and extends to the whole of the society; it is sufficiently internalized to resist peer-group pressure, let alone transient blandishments and costs. At higher stages still, of personal conscience, the rule is internalized maximally. The question then becomes: can such rules be internalized as a result of social learning? The answer appears to be "yes." Several studies have shown that people can be moved up a stage as a result of social influence procedures.<sup>44</sup> Despite fairly major critiques of Kohlberg's assessment procedures, Kohlberg's descriptions are important. His contribution (and Piaget's before him) is no less if it is possible for social learning theory to specify some of the conditions under which movement between stages becomes possible and how, more generally, internalization of values and moral principles occurs.

## SOCIAL LEARNING AND SOCIETY

In the remainder of this article I would like to examine the implications of the social learning theory for society. If the thesis being advanced here is correct, that is, that the frequency of antisocial or prosocial behavior that people engage in is a function of their social learning experiences, it is apparent that society can influence the amount of altruistic behavior demonstrated by altering the social learning experiences people have. Societies do this through a variety of institutions. In our society three of the most powerful agencies of socialization are the family, the mass media, and the educational system. Let us examine each of these, for there is increasing evidence that the modern family is becoming an ineffective socializer of children, that the television system is socializing them in an antisocial direction, and that the educational system is not socializing them at all!

### *A. The Breakup of the Traditional Family*

Throughout human history it is the family that has been the pivotal institution, the building block of society. Previous sections outlined some of the most important procedures by which human beings learn their moral principles and behaviors. Many investigators have demonstrated these processes to occur within the family system. Not too surprisingly, it appears that parents, and other adults within the home, are vitally important agents of socialization for children. Children learn appropriate rules of behavior which are demonstrable even years later, after they have become adults.

During the last several decades, however, the family system has been undergoing drastic change. With the advent of industrialization came the breakup of the traditional extended-family system. During very recent years even the nuclear family appears to be in a process of disintegration. Perhaps the strongest evidence for this assertion comes from Dr. Urie

44. Rushton, *Altruism*, pp. 97-98.

Bronfenbrenner, professor of human development and family studies at Cornell University.<sup>45</sup> Bronfenbrenner collated the statistics from such U.S. government publications as *Current Population Reports* and *Special Labor Force Reports* over a twenty-five-year period to illuminate the dramatic trends taking place. First he observed the rapid increase in the number of working mothers over the last thirty years. Whereas in 1948, 26 percent of married women with children from six to seventeen were engaged in seeking work, in 1974 the figure was up to 51 percent. Not only have more mothers been going out to work, but in addition there has been a rapidly decreasing number of (nonparental) adults in the home who could care for the children (e.g., grandparents, maiden aunts, etc.). Even more striking is the fact that, as Bronfenbrenner noted, the adult relatives who have been disappearing from families include the parents themselves.<sup>46</sup> At the time of writing, one out of every six children under eighteen years of age is living in a single-parent family. Furthermore, 90 percent of the children live with their single parent alone; that is, there are no other adults in the home. In addition, the majority of such parents with school-age children also are at work (67 percent). Even among single parents with children under three years of age 45 percent are in the labor force.

If Bronfenbrenner's thesis is correct and if these trends increase rather than decrease, as seems most likely, it is possible that parents will cease to be effective socializers of their children. Instead, that role will be taken over by the child's peer group and by the other institutions of society.

### *B. The Mass Media*

Earlier we examined how one of the primary ways in which human beings internalize the norms and emotional responses that they have with regard to others is through observational learning. One of the most important implications of this pertains to television. If one of the main ways in which people learn is by observing others, then it follows that people should learn a great deal from viewing others on television. Television provides people with access to a very wide range of observational learning experiences. By simply sitting in front of their television sets in their own living rooms, people can observe a vast array of other people's behavior and thereby learn about things well beyond their own direct experience. In this way television can have quite diverse effects. For example, it is capable of promoting valued cognitive and social development. Because of the prevalence of aggressive modeling, however, it also can be an important disinhibitor and teacher of antisocial styles of behavior. This becomes a matter of concern when we realize how many of the characters on television behave. Furthermore, a large number of studies have demonstrated a causal connection between television violence and the amount of

45. U. Bronfenbrenner, "Reality and Research in the Ecology of Human Development," *Proceedings of the American Philosophical Society* 119 (1975): 439-69.

46. Bronfenbrenner, p. 441.

violence shown in the social behavior of viewers. The evidence for this conclusion comes from a variety of different types of investigation: case studies, laboratory experiments, field experiments, and correlational studies.<sup>47</sup> All demonstrate the pervasive power that television has to alter the norms of appropriate behavior.

Television not only has the ability to produce harmful effects by depicting antisocial behavior and violence. Television also has the potential of being a force for good. Over thirty different studies have now demonstrated, through experiments carried out in both laboratory and naturalistic settings, that if prosocial content is shown then the viewers' social behavior is modified in a prosocial direction.<sup>48</sup> Generosity, helping, cooperation, friendliness, adherence to rules, delaying gratification, and absence of fear can all be increased by television material. This conclusion therefore is a mirror image to that even larger body of evidence on the relationship between television and antisocial behavior. Also there is evidence that television has the ability to affect our expectations of occupational, ethnic group, and sex roles; consumer products; politicians; and expectations from life. The message therefore is quite clear: people learn from watching television and what they learn depends on what they watch.

One conclusion often put forward is that it is time to alter our conception of the nature of the mass media. Television is more than mere entertainment. It is also a source of observational learning experiences and a setter of norms. It helps to determine what people will judge to be appropriate behavior in a variety of situations. Indeed, it has been argued that television has become one of the major agencies of socialization that our society possesses.

### *C. The Educational System*

The educational system's function as an agency for socialization goes back to antiquity and is universal. The native peoples of North America, for example, long before the advent of Europeans, had two broad curricula. The first was a secular one and consisted of learning to hunt and the acquisition of other skills suitable for their society. The second curriculum was a moral, ethical, and religious one. This two-pronged view of education is found in most other societies of the past, including, just for example, Spartan and Athenian Greece and Medieval Europe.

Education in the modern world is also divisible into secular and moral parts. Whereas, however, all nations of the world today provide, or aspire to provide, universal secular education, only some provide inten-

47. J. P. Murray and S. Kippax, "From the Early Window to the Late Night Show: International Trends in the Study of Television's Impact on Children and Adults," in *Advances in Experimental Social Psychology*, ed. L. Berkowitz (New York: Academic Press, 1979), vol. 12.

48. J. P. Rushton, "The Effects of Prosocial Television and Film Material on the Behavior of Viewers," in Berkowitz, ed., vol. 12.

sive moral training. The Soviet educational system, for example, is particularly involved in moral education.<sup>49</sup> It has as its aim the propagation of "socialist morality" and the making of the "New Soviet Person." Great stress is put on prosocial behavior, consideration for others, and self-discipline and, indeed, some cross-cultural empirical studies have demonstrated that Soviet children are more honest, generally better behaved, and more responsible than their counterparts in the United States.<sup>50</sup>

Moral education in North American and Western European schools is far less intensive. A fivefold typology of approaches to moral education in the West can be identified: inculcation, moral development, analysis, clarification, and action learning.<sup>51</sup> These are not, however, implemented in any major or systematic manner. There is nothing in the West remotely approaching the Soviet educational system in this regard. Indeed, the general feeling among many appears to be that it is not the place of the school to inculcate moral values. This "hands-off" approach no doubt gained a lot of support from the notions of cultural pluralism and moral relativism. According to this view, the United States and most Western nations are pluralistic societies. Different cultural groups have different values. No one had the right, it was argued, to impose his values on anybody else. The traditional idea of using the American public school system to socialize the hundreds of ethnic minorities (and millions of individuals) into a common "melting-pot" mold appeared to be gone forever.

#### *D. Solutions to the Problem of Undersocialization*

A bleak situation has been presented. The family is an increasingly ineffective socializer of children, the television system is socializing them in an increasingly antisocial direction, and the educational system is not socializing them at all. Furthermore there is, unfortunately, an accumulation of evidence that this gloomy scenario is actually producing the predicted "undersocialized personality."<sup>52</sup>

One solution to a problem of undersocialization is to increase the frequency of adult-child interactions, thus providing more opportunities for limit-setting and prosocial socialization. One suggestion has been to help parents to be home when their children return from school. This could occur if factories and workplaces employing large numbers of people could be persuaded to introduce flexible work schedules that would enable parents to be home when their children return from school. Another solution is to try to keep families intact and to decrease the number of illegitimate births. The social welfare system might be exam-

49. U. Bronfenbrenner, *Two Worlds of Childhood: U.S. and U.S.S.R.* (New York: Russell Sage Foundation, 1970).

50. Ibid.

51. D. P. Superka et al., *Values Education Sourcebook: Conceptual Approaches, Materials, Analyses, and an Annotated Bibliography* (Boulder, Colo.: Social Sciences Education Consortium, 1976).

52. Rushton, *Altruism*, pp. 183-86.

ined in this regard to see whether it is inadvertently reinforcing undesirable behavior. Social policy can also be used more positively. Perhaps communal raising of children in well-staffed day-care centers could be useful. Indeed, there is no reason why parents who want to spend time raising their children might not be paid to do this at the day-care centers, where they could also take turns helping to care for other children. Certainly the wider society could benefit from the ensuing increased socialization.

In regard to the mass media, it has been amply documented by now that our attitudes and values can be demonstrably altered by what we observe on television. Not only is violence and antisocial behavior being portrayed, but much broader attitudes that may be incompatible with an altruistic society are also depicted. Television shows successful people as materially successful and as consumers of advertised products. As a result, the norms of what constitutes the good life that are being internalized are materialistic. Millions of people will feel frustration as the inevitable social comparisons are made. We must alter our conception of what television is: it has become one of the most powerful socializers that our society currently possesses. When this is realized, issues of power and control become important. At the moment, the advertising and television industries exercise virtually unlimited control in the service of their corporate interests, and the public has no direct access to the use of the public airwaves. One researcher has suggested that dissemination and attendant publicization of the violence rates for the different networks, sponsors, and programs might play a part in exerting influence.<sup>53</sup> Certainly other consumer advocates have found that disclosure of objectionable practices can result in some amelioration of the practices. If this does not work then perhaps stronger regulatory guidelines and/or legislation will be necessary to stop the pervasiveness of so much antisocial socialization.

Perhaps it is in the educational system, however, that society can most readily make a significant and active contribution to increasing prosocial competencies and motivations. It is time we turned to a far more intensive and disciplined program of prosocial education, in the widest sense of the term. How a child behaves and reasons and how he clarifies and acts on his values are all important and might be attended to more completely in schools than they are today. Cooperative school work could be encouraged, as could leadership and initiative in helping the less able students. Stress might also be placed, in social studies courses, on the scientific understanding of human society. In early high school there is no reason why psychology and sociology (and evolutionary theory and animal behavior) could not be taught. With emphasis on the scientific method, there might be an increased desire to analyze prejudices and to see more clearly the continuity of community across national, racial, and religious borders. Might the altruistic brotherhood and sisterhood of man

53. A. Bandura, *Aggression: A Social Learning Analysis* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973).

and woman, which has been dreamed of, thought about, and written of by so many, actually become a reality through the application of positivistic behavioral science? Certainly the techniques are increasingly at our disposal. Perhaps we should implement them.