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Humane education research: Evaluating efforts to encourage children's kindness and caring toward animals.
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HUMANE EDUCATION RESEARCH: EVALUATING EFFORTS TO ENCOURAGE CHILDREN'S KINDNESS AND CARING TOWARD ANIMALS

ABSTRACT. Humane education includes instructional approaches to teaching children kindness toward animals. Although efforts to teach children to be caring probably began within the first human social groups, formalized programs aimed at fostering children's compassion and responsibility toward people and animals are a more recent phenomenon, emerging in the United States not much earlier than a century ago. This article describes what has been evaluated in humane education programs, why such programs are being scrutinized, how programs have been evaluated (with a listing of the shortcomings of some evaluations and suggestions for improvement), and where programs and their evaluations should be directed in the future. The focus is on preschool and elementary grade programs. After a discussion of historical perspectives, recent approaches to implementing and evaluating humane education are reviewed. Special attention is given to the issue of whether teaching children to be caring toward animals has effects that are generalizable to human-directed empathy. Suggestions are offered for future research on this relatively neglected topic in child psychology.

Research in the special sphere of humane education as well as in the more general sphere of moral education is a neglected and thus backward branch of pedagogics. (Teutsch, 1982, p. 238)

Although efforts to teach children kindness and caring probably began within the first human social group, formalized programs aimed at fostering children's compassion and responsibility toward people and animals are a more recent phenomenon, emerging in the United States not much earlier than a century ago. If such programs are in their infancy, their evaluation is still in a neonatal period. Yet all signs point to a healthy future development of the field of humane education. In this article, I describe what has been evaluated in humane education programs, why such programs are being scrutinized, how programs have been evaluated, with a listing of the shortcomings of some evaluations and suggestions for improvement, and where programs and their evaluations should be directed in the future. My focus is on preschool and elementary grade programs.

Definitions and Areas of Emphasis

Milburn (1989) defined humane education as "an attempt to develop altruism and a sense of compassion in a world where all other pressures are in opposition to it" (p. 74). This definition includes an action component related to fostering prosocial behavior and an affective component related to empathy and sympathy. Arkow (undated) articulated components of humane education as defined by the American Society for the Prevention of Cruelty to Animals. These components include animal needs and rights, empathy toward humans and animals, respect for all forms of life, even those that some may find difficult to love or like, and the interdependence of humans and animals. Listing other definitions of humane education would highlight their diversity, yet common threads in the fabric of these educational efforts would be evident. Instilling, reinforcing, and enhancing young people's knowledge, attitudes, and behavior toward the kind, compassionate, and responsible treatment of human and animal life are examples of the shared components of most humane education programs.

Areas of Emphasis Within Humane Education

Eddy (1899, p. 227) stated that "children who are taught to be kind to animals and to each other make good citizens." Humane education programs can be categorized according to their relative emphasis on interpersonal relations or interspecies relations. The Child Development Project (Battistich, Watson, Solomon, Schaps, & Solomon, 1991) uses a variety of educational interventions, including cooperative learning, opportunities to rehearse helping, and examples of prosocial values, to foster positive interpersonal relations within classroom and home environments. Programs that emphasize interspecies relations include Project WILD (Western Regional Environmental Education Council, 1986), which restricts its coverage to nondomestic animals, some humane society programs that primarily address issues related to pet care, and programs like People and Animals (Savesky & Malcarne, 1981) that are broader in scope and focus on farm animal, wild animal, and pet animal issues.

Saunders (1922, p. 176) said that "children who are taught to love and protect dumb creatures will be kind to their fellow men when they grow up." One of the explicit assumptions of humane education programs that focus on interspecies relations is what Finch (1989) referred to as transference. This concept, which could also be labeled generalization, suggests that teaching children to be attentive to animal needs and to treat animals with kindness, compassion, and care will, in turn, affect the way children will treat each other. It is clear that programs such as People and Animals and Operation Outreach-USA (Golden, 1992) aim to enhance interpersonal relations through emphasis on interspecies relations, a goal subscribed to in the earliest attempts at humane education in the United States (Arkow, 1992). Attempts to assess such generalization will be discussed later in this article.

Variations in Program Objectives

Although the focus of this article is on humane education programs developed and implemented by animal welfare organizations, mention must also be made of a program developed by the Western Regional Environmental Education Council. Project WILD has as its goal "to assist learners of any age in developing awareness, knowledge, skills, and commitment to result in informed decisions, responsible behavior, and constructive actions concerning wildlife and the environment upon which all life depends" (Western Regional Environmental Education Council, 1986, p. vii). Project WILD is reminiscent of early programs designed to create objective appreciation for wildlife through nature study (Guyer, 1905; Hodge, 1900) and to instill positive attitudes and reverence for life (Guillet, 1904; Hodge, 1899). Its objectives relate to children's understanding, for example, of the similarity of human and animal needs, issues related to habitat, and knowledge of the effects of pollution, littering, and crowding on the quality of nondomestic animal life. Although more circumscribed in focus than the National Association for Humane and Environmental Education's (NAHEE) People and Animals and the Massachusetts Society for the Prevention of Cruelty to Animals' Operation Outreach-USA, Project WILD shares with these programs their supplementary and curriculum-blended features.

Animal Welfare Organization Programs

Operation Outreach-USA, a program of the American Humane Education Society (Golden, 1992), uses literacy skills development within a cumulative, curriculum-blended approach to teach children respect for all living things. This objective is designed to be achieved by introducing children to classic literary works, thereby coupling cognitive (reading ability) and affective (prosocial attitudes and empathy) goals. NAHEE's People and Animals curriculum guides have as their objectives the following (as described by Savesky & Malcarne, 1981):

1. assist children in developing compassion, a sense of justice, and a respect for all living creatures; 2) provide the knowledge and understanding necessary for children to behave according to these principles; and 3) foster a sense of responsibility on the part of children to affirm and act upon their personal beliefs. (p. iii)

The objectives incorporated in People and Animals make explicit the general cognitive, affective, and behavioral outcomes that are desirable as a result of implementation of the program. These objectives (and those of other humane education programs) are praiseworthy and would, no doubt, be endorsed by most human and animal welfare organizations. There may be less consensus about methods of achieving these objectives, especially where controversial issues, like trophy hunting, are involved. Yet it has often been humane educators who are in the forefront of distinguishing education from indoctrination (see Finch & Soltow, 1991, p. 25).

The vehicles through which such objectives are approached are quite varied. They include direct physical contact with farm and pet animals (George, 1992) and exposure to animals in zoological parks (Kaufmann, 1992), lessons about animal behavior (Zawistowski, 1992), and exposure to classic literature including animal protagonists (Golden, 1992). These vehicles may be present in the home and family life of many children in our culture. However, the greatest attention in this domain has been given to socialization outside the home (Eisenberg, 1992), especially school-based humane education programs. These programs range from brief, one-time classroom visits by a humane educator (Vockell & Hodal, 1980) to programs spanning an entire school year (Ascione, 1992).

Evaluating Humane Education: Process and Outcome

Although research on children's relations with animals, including reference to teacher-implemented humane education, is mentioned in documents prepared before the beginning of this century (Angell, 1884), systematic research in this area is a recent phenomenon. What was perhaps the first study of child-animal relations was not notable for its emphasis on fostering positive relations. I refer here to Watson and Rayner's (1920) study of little Albert, in which creating fear of an animal was the object. Before 1980, only a few scattered research reports focused on fostering positive child-animal relations; included among these are Mary Cover Jones's (1924) work in the counter-conditioning of fear of rabbits, and Bandura, Grusec, and Menlove's (1967) study using modeling to eliminate fear of dogs in young children.

One study that concentrated directly on prosocial behavior between children and animals was conducted by Sprafkin, Leibert, and Poulos (1975), in which they used the modeling of rescue behavior (Jeff rescuing one of Lassie's puppies in the serialized TV program) in assessing first graders' willingness to help puppies in distress. In the classic study, "Learning Concern for Others," by Yarrow, Scott, and Waxler (1973), opportunities to be kind to animals were prominent among the pictures, dioramas, and behavioral incidents used to measure and train children in prosocial behavior. Although they did not directly assess such behavior, even Hartshorne, May, and Mailer (1929) mentioned kindness to animals as an index of children's dispositions to be of service.

The role of animals, especially pets or companion animals, in the psychological and social development of children has been the focus of numerous calls for increased research attention (e.g., Levinson, 1983; Westerlund, 1982). Heeding these calls are researchers whose efforts have been aimed at the study and enhancement of children's attitudes toward the care of, treatment of, and respect for animals. Developmental changes in the quality of children's humane attitudes have been assessed by Kellert and Westervelt (1983); Rheingold and Emery (1986) have explored the roots of such attitudes in the second year of human life; Fogel, Melson, and Mistry (1986) have included values and attitudes toward animals as underlying one of the many forms of nurturance that children may display; Kanner, Feldman, Weinberger, and Ford (1987) included pet-related items in their measures of uplifts and hassles in early adolescence; and Bryant (1985) has explored how relations with companion animals may relate to children's empathic tendencies toward people. Other evidence of revitalized attention to this area is the number of child-related articles included in the 1985 special issue of the journal, *Marriage and Family Review*, which focused on pets and the family.

Pets or companion animals are an integral part of the environment of many children in the United States. Pet ownership has been found to be significantly more common in families with school-aged children and adolescents than in families without children (Albert & Bulcroft, 1988). In samples from California and Connecticut, children reported pet ownership ranging from 52%, for kindergartners, to 75%, for fifth graders (Ascione, Latham, & Worthen, 1985). Higher rates of pet ownership in a sample of older children have been reported by Bryant (1990). The numbers confirm the importance of attending to the human--companion animals relation (Kidd & Kidd, 1987; National Institutes of Health, 1988).

The study of the role of child-animal relations potentially pervades most of the significant domains of developmental analysis (Poresky, Hendrix, & Woroby, 1988) and, historically, is represented in the early developmental psychology literature (e.g., Bucke, 1903; Hall & Browne, 1904; Lehman, 1927). In 1870, the Pedagogical Society of Berlin, Germany (Dennis, 1972) conducted a study of thousands of 6-year-olds entering Berlin schools. A number of the questions asked of these children, to gauge their understanding of various concepts, related to the children's knowledge of various animals. The authors of the report noted that of 10,000 children tested, approximately 6,000 understood what a swan was, 4,000 knew what a zoo was, and only approximately 2,500 knew what a rabbit was.

G. Stanley Hall, in his 1883 report on a study of the contents of children's minds (Dennis, 1972), incorporated some of the questions that had been used in the Berlin study. For example, he found that 10% of kindergarten children tested knew what a beehive was, 50% could identify a frog, and 72% knew what a cow was. In addition, only 7% of the children knew that "leathern things come from animals," 31% knew the origin of woolen things, and 80% were able to identify the source of milk. Hall complained of the methodological difficulties in scoring responses as correct when interviewing children. For example, in describing some of the children's responses, he said, "A worm may be said to swim on the ground, butchers to kill only the bad animals but when hams are said to grow on trees or on the ground... or wool as growing on hens... the deficiency is obvious" (p. 121).

There are also more recent attempts to assess children's knowledge and attitudes about animal-related issues. These studies are primarily descriptive and in some cases examine the correlates of children's knowledge and attitudes. Westervelt and Llewellyn (1985) focused on fifth- and sixth-grade children's beliefs and behaviors regarding wildlife; Kidd and Kidd (1985, 1990) have examined, across significant age spans, children's beliefs and attitudes about pets, focusing on cross-sectionally derived developmental changes in attitudes and their relation to parental attitudes. Arreola (1989) surveyed first- through fifth-grade children on their knowledge about and attitudes toward a variety of animal control concepts. An especially exciting development in this field is the emergence of cross-cultural research, including evaluations of educational programs in Costa Rica (Zuman, 1993) and assessments of attitudes toward animal welfare and environmental issues in East German and Russian youth (Szagun & Pavlov, 1993).

Research on School-Based Programs

Eisenberg (1988, p. 16) wrote: "Although there is very little research concerning the teaching of humane attitudes towards animals to children, it appears as if there is a need to do so." In a number of studies, researchers have

attempted to assess educative efforts to enhance children's attitudes toward the humane treatment of animals. Some of these studies focus on animals in general, and others emphasize the treatment of companion animals.

I begin with evaluations of Project WILD (Western Regional Environmental Education Council, 1986) as an example of a school-based program that is restricted to the study of nondomestic animals. Charles (1988) has summarized Project WILD's effects in terms of teacher evaluations, studies of changes in knowledge and attitudes, and anecdotal evidence of children's behavioral change. Although this is a widely disseminated program and one to which participating teachers devote considerable instructional time (Gilchrist, 1991), evidence of Project WILD's effectiveness is not extensive. Fleming (1985) evaluated Project WILD in kindergarten through fifth-grade classrooms in Lee County, Florida, using pretest and posttest instruments of moderate to good reliability. However, significant positive changes attributable to the Project WILD curriculum were found only on the assessment of knowledge. Statistically significant differences were not found on the attitudinal measures.

Race, Decker, and Taylor (1990) completed a similar study in Colorado with sixth and seventh graders. Although psychometric information about the assessment instruments was not provided, gender differences were found. Boys performed significantly better on the knowledge measure, girls performed better on the attitudinal measure. However, there were no statistically significant differences between Project WILD and control classrooms. The authors attribute this result to the pervasiveness of wildlife and environmental issues in the modern classroom, making it more difficult to assess the effects of supplemental programs like Project WILD.

Vockell and Hodal (1980) focused on the impact of "typical 'one-shot' humane education programs" on a measure of children's humaneness. The programs consisted of a single school visit by a humane educator coupled with the provision of printed materials and posters. Third- through sixth-grade classes received either a visit (of unspecified duration but presumably the length of one class period) and print material (referred to as the intensive treatment) or print material alone (light treatment), or neither (control classrooms).

Although the children in this study were not pretested, they were posttested on two forms of the authors' Fireman test, designed to assess the degree of children's favorable attitudes toward animal life (children are asked to select, from a list of inanimate possessions and pets, which they would attempt to rescue from a burning home). Vockell and Hodal (1980) reported that the two treatment classrooms' mean scores exceeded that of the control group for one form of the Fireman test but not for the other. Neither treatment condition was judged superior. One problem not addressed was why the control groups' performances on the two presumably equivalent tests differed so greatly (.99 for the Johnny form and 1.68 for the Billy form). Furthermore, without pretest information it was possible that the various groups differed significantly in their humane attitudes prior to the implementation of the programs. Nevertheless, the authors concluded that the intervention failed.

In a similarly designed study, Fitzgerald (1981) compared a variety of school-based interventions in 16 fifth- and sixth-grade classrooms and included the important design feature of pretesting children. The four conditions were (a) repeated treatment (RT), in which a master teacher presented four humane education lessons over a 2-month period (once every 2 weeks); (b) intensive treatment (IT), in which the information contained in RT was covered in a single class session; (c) light treatment (LT), which involved the provision of reading material without any direct instruction; and (d) a control condition, in which no humane education efforts occurred.

All classrooms were pre- and posttested using the Fireman test. Analysis of covariance (ANCOVA) indicated that the mean score for the IT condition was significantly more humane than mean scores for any of the three other groups (RT, LT, and control). The three other groups also did not differ significantly from each other. Fitzgerald concluded that a focused classroom presentation conducted by a master teacher could have a positive impact on children's humane attitudes.

Cameron (1983) investigated two forms of humane education and their effects on animal-related attitudes using seven eighth-grade classrooms. Two classrooms were given reading material and media presentations (PRINT); two were provided both presentations along with lectures delivered by the instructor (LECTURE); and the remaining three classrooms served as a control group. The instruction in the PRINT and LECTURE groups lasted for 3 school weeks for a total of approximately 14 hr of in-class instruction. All children were pre- and posttested on an instrument tapping animal-related attitudes. Using analysis of variance (ANOVA), Cameron found that the mean posttest attitude scores of the PRINT and LECTURE groups were more positive than the control group's mean score. Although the PRINT and LECTURE groups did not differ, and the LECTURE and control group did not differ, the PRINT group mean score was higher than that of the control group.

This study demonstrated that a more intensive intervention can have a positive impact on children's attitudes toward animals even with children older than those studied by either Vockell and Hodal (1980) or Fitzgerald (1981). One limitation of this study, however, was that the attitude instrument developed by Cameron included only three items (of the 25 total) clearly related to the care and treatment of companion animals (pets). Also, in studies of this nature, the individual who provides the instruction should not conduct the assessments (to avoid potential bias). That was not the case in this study (nor in a more recent study by Nutter, 1992).

Malcarne (1981) studied a small group (33 children) of third and fourth graders to assess the effects of drama and role playing on children's empathy and prosocial behavior toward humans and animals. One third of the sample received dramatization and role-playing experience related to human victims of distress, one third with animal victims, and the remaining third were read *The Girl of the Sacred Dogs*, with discussion focused on the story content rather than on role taking.

Each condition lasted for 1 hr. All the children were then posttested (no pretests were given) on three measures: (a) story resolution in which either a human or animal victim of distress was the subject, and the child's response was scored for helping and empathy; (b) the Fireman test, and (c) children's willingness to volunteer time at either a children's hospital or an animal shelter (the number of hours mentioned was the dependent variable).

Malcarne found that children trained to role play animal distress scored higher on the Fireman test than did children in the other two groups. Children in both treatment groups had higher scores on the animal version of the story-resolution test than children in the control group did and expressed a greater willingness to volunteer at a children's hospital than did members of the control group. Willingness to volunteer at an animal shelter was higher for the group trained to role play animal distress than for the other two groups. Although this study provided important information regarding the relation between empathy for humans and for animals, an issue also addressed by Bailey and Doescher (1991) and Meison (1991), the absence of pretesting makes interpretation problematic.

In an evaluation of school-based humane education efforts sponsored by the Massachusetts Society for the Prevention of Cruelty to Animals, Hein (1987) reported the effects of a single humane education presentation on second graders and a series of three presentations on third, fourth, and fifth graders on children's attitudes toward the treatment of animals. As described in the report, the presentations comprised less than 3 hr of total instruction. Hein found that, compared with a no-intervention control group, children receiving humane education in the second, third, and fourth grades demonstrated statistically significant increases in humane attitudes. No effects were obtained for fifth graders.

Hein cautioned that changes obtained at the second grade level could be attributed to large increases in humane attitudes for a small number of children, and that changes for third and fourth graders were restricted to attitude scale items directly related to the specific instruction provided (i.e., changes may have resulted from teaching to the test). One of Hein's recommendations was that substantially more intensive instruction is needed in humane education to effect practically significant changes in attitudes.

Using the National Association for Humane and Environmental Education's (NAHEE) curriculum guides, Ascione, Latham, and Worthen (1985) assessed the effects of a school-based intervention, implemented by teachers, on children's humane attitudes. Seventy-seven teachers and their 1,800 pupils (kindergarten through sixth grade) were randomly assigned to either an intervention condition (E group) or a no-intervention condition (C group). Children were pre- and posttested on a Primary Attitude Scale (PAS; Ascione, 1988b) or Intermediate Attitude Scale (IAS; Ascione, 1988a) depending on their grade level.[2] These instruments assessed attitudes toward companion and noncompanion animals. Teachers implemented NAHEE's curriculum over the course of the school year and reported that, on the average, 10 hr were spent on humane education material. Results showed that mean PAS posttest scores were higher for E-group kindergarten and first graders than for C-group children.

Although the direction of the E-C group difference was in the expected direction for second graders, this difference was not statistically significant. No gender differences were found in the PAS analysis. For the IAS, significant grade and gender differences were found (mean humane attitude scores were higher for girls and higher for fourth, fifth, and sixth graders than for third graders) and a treatment (E vs. C) effect that approached significance ($p < .08$). Subsequent analyses showed that E-group third graders at one site (California) and fourth graders at the other site (Connecticut) had higher scores for humane attitudes than C-group children at those grades and sites.

Results of this study demonstrated that children's attitudes toward the treatment of animals could be measured reliably in a developmentally sensitive manner. The attitude scales developed were also sensitive to gender and

grade differences, and to a relatively weak educational intervention. Given that only 10 total hr of instruction were devoted to this program over the entire school year, a question that needed to be addressed was whether a more intensive intervention would produce more dramatic and consistent increases in children's animal-related attitudes (a point stressed in Eisenberg, 1988).

Ascione (1992) assessed the impact of a year-long, school-based humane education program using NAHEE's People and Animals curriculum with KIND News (a weekly-reader-type newsletter covering animal-related issues) as a supplement. Thirty-two classrooms were involved, with separate analyses for younger (first and second grade) and older (fourth and fifth grade) pupils. Assignment of the volunteer teachers' classrooms to the experimental group (E), which implemented the curriculum, or to the control group (C) was random. The effect of the program on children's attitudes toward animals as well as generalization of effects to human-directed empathy (Bryant, 1982, 1987a, 1987b) were assessed. In contrast to teachers in the Ascione, Latham, and Worthen (1985) study, teachers in the experimental group reported spending an average of nearly 40 hr of instructional time, over the school year, on the humane education curriculum.

Using ANCOVAs, it was shown that the program enhanced the animal-related attitudes of children differentially, depending on grade level. For younger children (first and second graders), there was no significant difference between E and C group attitude means; however, qualitative analysis suggested that greater enhancement of attitudes occurred for first-grade E-group children than for C-group children at that grade level. In contrast, no difference between E and C groups was evident for second graders. No differences were present on the generalization measure of empathy.

For older children (fourth and fifth graders), there was a significant difference between E- and C-group attitude means qualified by grade level--there was greater enhancement of humane attitudes for E-group than for C-group fourth graders (see Figure 1 for posttest data) but no significant difference for fifth graders. On the generalization measure of empathy, posttest means for the E group were significantly greater than means for the C group regardless of grade level.

Ascione (1992) identified three issues that should be addressed in follow-up research. First, one important question that must be asked of humane education research is the duration of the changes that occur as a result of educational interventions. This issue has both research and practical significance, because children may encounter humane education sporadically rather than consistently across their school years. If program-enhanced attitudes are maintained across at least a school year, more cost effective programs could be developed (e.g., implementing concerted humane education at every other grade level), especially in areas where resources are limited.

A second issue is the relation between having a pet and children's attitudes toward animals. Although pet ownership, per se, was not found to be a significant factor by Ascione (1992), future research should examine the quality of the relation between child and pet. See examples of this approach with children by Poresky (1990), Poresky and Hendrix (1990), and Poresky, Hendrix, Mosier, and Samuelson (1987).

Third, future researchers should directly address the relation between children's humane attitudes and their actual treatment of companion and noncompanion animals. One area of focus should be on children who may be at risk for mistreating animals. Much of the information available on this issue is anecdotal or based primarily on retrospective reports by adults (Ascione, 1993). I am currently exploring the use of the attitude scales incorporated in this project with children who have engaged in animal maltreatment, an issue of both historical (Jersild, 1954) and current interest (National Advisory Mental Health Council, 1990, section on Conduct Disorder). This research would focus on the potential screening use of these scales and their value as pre-post measures of intervention effectiveness.

Two of these issues were examined in a follow-up study by Ascione and Weber (1993). Because the effects of the humane education curriculum were clearest for fourth graders in the Ascione (1992) study, this description of the follow-up focuses on the results for that grade level.

Ascione and Weber were able to locate and re-test over 80% of the original sample 1 year after the earlier study was completed. Fourth graders from both the experimental (E) and control (C) groups were assessed on the measures of humane attitudes (IAS), human-directed empathy (B-I), and, for children with companion animals, the quality of their relations with their pets (as reported by parents). Analyses of the follow-up data showed that E-group fourth graders still had a more humane attitude mean score than C-group children (see Figure 1 for follow-up data). When the quality of children's relations with pets was considered in the analyses (as a covariate), intervention effects were shown to have generalized to human-directed empathy. This is the first demonstration of the relatively long-term

maintenance of effects of a humane education program and, although the effects were clearest for only one grade level and the study warrants replication, the results are encouraging.

Humane Education Evaluation: An Agenda for Future Research

The experience of French and English schools during many years has shown that children taught kindness to animals only, become not only more kind to animals, but also more kind to one another. (From a paper by George T. Angell, President of the Massachusetts Society for the Prevention of Cruelty to Animals and Director of the American Social Science Association, presented before the National Association of Superintendents of Public Schools at their annual meeting, Washington, DC, February 14, 1884.)

It has been difficult to locate the research on which George Angell based his remarks, but it is encouraging that we are beginning to assemble data that may eventually validate Angell's observation. We need to acknowledge, however, that this validation may be more difficult to accomplish than we initially presumed. This is a condition not unique to humane education--one has only to examine current dialogue about the questionable effectiveness of other school-based programs like D.A.R.E. for drug education, Channel ONE for education on current events, and programs dealing with sexuality. Evaluation in real world settings is a complex and challenging endeavor.

In closing, I would like to focus on some suggestions for future research on the evaluation of humane education programs implemented in school settings. These remarks address the way we assess humane education outcomes, characteristics of the children who are involved in this research, how humane education programs are implemented, the need to move beyond assessing knowledge and attitudes alone, and the relation of humane education outcomes to broader societal issues that affect our children.

How do we measure humane education effects? It is clear that there is a need for continued research on developing reliable and valid tests of humane education program outcomes, especially for use with preschool and early elementary grade children. In fact, what is sorely needed is a form of assessment common to a variety of humane education programs (e.g., People and Animals and Operation Outreach-USA) that could be used across a wide age span. The Intermediate Attitude Scale used in Ascione (1992) and Ascione and Weber (1993) holds some promise in this regard because it has been shown to be reliable with older children (second to third graders and older) and with adults (Weber & Ascione, 1992). However, continued attention to this issue by other researchers is needed.

When we do assess humane education programs, we must be sensitive to the potential for examiner bias to affect our results. It is surprising that there continue to be studies that use testers who are not naive as to the tested children's classroom experience with humane education. Deliberate attempts to influence outcomes are not being suggested; rather, we know that subtle, unconscious effects may occur and can distort our findings. These effects can easily be controlled for and would substantially improve the quality of outcome data.

Whom do we assess? One question we should be addressing is whether the children we have studied in humane education programs represent the economic, ethnic, and cultural diversity that exists in our country. Have we focused our attention on children from middle and upper income families and neglected to examine humane education effects with children from impoverished environments? How do the messages conveyed in humane education programs affect children who grow up in frightening and violent environments? Broadening our research samples will help us address these issues and, in turn, feed back to the development of humane education program content as well as methods of implementation.

What should be considered in implementing humane education programs? Humane education programs that are to be formally evaluated should obviously be comparable to typical programs implemented in schools. However, when evaluations are to be conducted, we should take care to document the quantity and quality of the intervention. For example, in one study (Ascione, 1992), I asked teachers to report on the amount of time spent on humane education, but I did not include assessment of the quality of instruction or its consistency with curriculum guidelines. A related issue is assessing the effects of variations in teacher preparation for humane education, including comparisons of preservice and in-service workshops.

Better documentation also needs to occur in the so-called control classrooms or comparison groups we use in such research. As humane and environmental issues become more "mainstreamed," determining the effects of supplemental programs may become more challenging.

One additional consideration related to program implementation is the duration of programs. It is noteworthy that in many other curriculum areas, instruction is cumulative across grades. Yet most humane education evaluations have examined programs lasting no longer than one school year. If health, sexuality, drug, and citizenship education require years of instruction to be effective, is this not also the case with humane education? We cannot use an inoculation model and assume that if humane education is "covered" in the third grade, the effects will last till adulthood. We need longitudinal studies that follow children exposed to multiple years of humane education. These studies will allow for a more realistic assessment of intervention effectiveness.

ABCs--Two Bottom Lines

Despite one hundred years of humane education efforts, many people still do not take proper care of their pets, and shelters see the results. (Jasper, J. M., & Nelkin, D., 1992, p. 67)

We know that there are complex interrelations between attitudes, behaviors, and cognitions (Olson & Zanna, 1993), yet most humane education evaluations have focused on affective and/or knowledge change, with little attention to action. This is understandable, as attitudes and knowledge are easier and less costly to measure. We must be willing to expend the energy and resources to determine whether children who experience humane education in fact behave more kindly toward animals, act more responsibly in caring for pets, engage in cruelty less frequently, take action on behalf of threatened species, support habitat preservation for wildlife, and so forth.

Saunders (1922, p. 35) stated, "If he is bad enough to ill-treat his dog, he will ill-treat his wife and children." To a certain degree, we have more information about the relation between violence toward animals and family violence (Ascione, 1993) than we do about the beneficial effects of humane education. As noted by Finch (1989), humane education should also address general issues of moral education that are related to social problems like child maltreatment and delinquency. The pioneers of humane education efforts acknowledged this responsibility (Angell, 1884); it is a responsibility that requires attention more urgently than ever.

If pedagogy is ever to become adequate to the needs of the soul, the time will come when animals will play a far larger educational role than has yet been conceived, that they will be curricularized, will acquire a new and higher humanistic or culture value in the future comparable with their utility in the past. (Hall, 1904, p. 228)

To the young child, there is no gap between his soul and that of animals. (Hall, 1904, p. 221)

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1 Evaluation of Operation Outreach-USA has not been included, because their program has not been in existence long enough to be the subject of evaluation studies. Evaluation of the program's effects on reading ability and attitudes was planned for 1993-1994.

2 Psychometric information on these scales can be found in Ascione (1992).

GRAPHS: FIGURE 1. Pretest, posttest, and follow up mean attitude scores for the eight classrooms (four experimental and four control) participating in an evaluation of humane education. Higher scores on the attitude measure (IAS) reflect more humane attitudes. Pretest and posttest data are derived from Ascione (1992) and follow-up data from Ascione and Weber (1993). IAS/PRE and Poresky/Past covariates are described in Ascione and Weber (1993).

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