



# **CHILDREN, NATURE, AND THE URBAN ENVIRONMENT:**

**Proceedings of a  
Symposium-Fair**

**USDA FOREST SERVICE GENERAL TECHNICAL REPORT NE-30  
1977**

**FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE  
NORTHEASTERN FOREST EXPERIMENT STATION  
6816 MARKET STREET, UPPER DARBY, PA. 19082**



We all share  
dreams and hopes  
for children  
and for children yet to be  
and, caring, shall assemble  
to recall the child within.

To gather for a symposium  
on tender human growth,  
in this alarming age  
of nature's destruction  
and nuclear peril,  
is an act of faith.

Joined in common fate  
let us together  
affirm and nurture  
life on earth.

—Karl Linn

Cover from a Photograph by Jerry Dantzie

# **CHILDREN, NATURE, AND THE URBAN ENVIRONMENT:**

## **Proceedings of a Symposium-Fair**

Proceedings of the Symposium-Fair held 19-23 May 1975 at the C. H. Marvin  
Center of the George Washington University, Washington, D.C.

Planned and presented by:  
Forest Service, USDA  
Cook College, Rutgers,  
the State University of New Jersey  
School of Education,  
George Washington University

In conjunction with:  
The Pinchot Institute of  
Environmental Forestry Research,  
Consortium for Environmental  
Forestry Studies

## FOREWORD

Urban children of today have become increasingly divorced from the natural environment of forests and fields that was part of the surroundings in which children developed just a generation ago. Rather than understanding their place in the natural world through close association with nature, today's urban children often learn about nature secondhand. The effects that this separation may have on today's urban children, in terms of their psychological development, self-concept, and preparation for responsible citizenship, are not known.

It was with the specific purpose of gaining a better understanding of the role of nature in the urban child's development that a Symposium-Fair titled, "Children, Nature, and the Urban Environment" was held at the Claud Heck Marvin Center of the George Washington University in Washington, D. C., from May 19 to 23, 1975. Here, we cannot possibly reproduce the Symposium-Fair itself, and we have made no attempt to do so. No volume of proceedings can do more than coldly celebrate an occasion of intense interpersonal exchange.

A total of 113 presentations were made during the five days of the Symposium-Fair. This volume offers only a selection of papers presented at the meeting. Many excellent papers had to be omitted for lack of space. Presentations of visual materials could not be duplicated here. Interested readers are referred to the Symposium-Fair Program (Appendix A) for a complete list of presentations. Program participants can be contacted directly for additional information (Appendix B). Every presentation is also available tape recorded from the Broadcasting Foundation of America, 52 Vanderbilt Avenue, New York, N. Y. 10017. The papers presented here are arranged in an order that seems logical to us, but is quite unrelated to the presentations at the event.

A decent respect for the opinions of mankind does seem to require a bit of explanation of the genesis of the event.

Elwood Shafer, then coordinator of the USDA Forest Service's Pinchot Institute of Environmental Forestry Research, first called attention to this important area. He provided us with the opportunity to meet with other likeminded individuals from the groves of academe. In the summer of 1973, Calvin Stillman, of Rutgers University, wrote A. Laverne Dickerson of the U.S. Forest Service in Washington, D.C., to suggest that it was time to bring together a small group to compare notes on what is known, and what needs to be known, of what really happens when children are exposed to nature. Dr. Dickerson responded with the news that the Forest Service had authorized a meeting on the subject at Syracuse, N. Y. The 2-day meeting was held in November, 1973. A program committee was appointed to prepare a full-scale public meeting.

Our topic was emotionally appealing for two reasons: it involved children, and it involved nature. It also dealt with "The City", a topic that nags consciences. To wrap the city into an appealing package along with children and nature projected an aura of responsibility and of fun, too.

Early in the planning process, the program committee agreed not to hold a conference that was within the bailiwick of any single discipline. We were frankly exploring an area of interest, one that we deemed important, yet one without sideboards established by the conventional wisdom of an established profession. We hoped this would insure that the conference would not be taken over by persons with axes to grind. On the other hand, it provided no clear plan or procedure.

As the event approached, vast amounts of time, personal energy, and money were expended in planning and preparations. Requirements of deadlines, written plans, agendas, and commitments for arrangements have a way of bringing to the fore differences of opinion which up until that time had been hidden in polite reticence, or complacent incomprehension of others' points of view. Committee discussions were frequently heated. But the final form of the Symposium, its agenda, and the ancillary activities are elements for which the entire program committee must be held responsible.

In our intention to explore the esthetic dimensions of "nature", we received instant and steady support from Mayer Spivack of the Harvard Medical School. His strategic contribution to the planning of the event was fundamental. On Spivack's recommendation, Karl Linn was added to the planning committee. Linn took charge of staging the conference, and was responsible for its ultimate designation as a "Symposium-Fair". Except for the introductory poem on the first page of this Proceedings, Linn's efforts toward making the event a personal experience for every participant cannot be reproduced here.

The strategy of using George Washington University buildings was contributed by Donald Hawkins, and became fundamental to the structure of the Symposium-Fair.

Intellectual formulation was shared by all members of the program committee. Differences in opinion appeared when we moved from the level of talk to the level of implementation. We wanted to hear from people doing research as well as from people doing things. We wanted to learn of the dreams of designers. And above all, we wanted interested people—adults and children—to meet together in a pleasant environment, to exchange ideas, share accomplishments, and ask questions.

Many people came to our aid. Ruth Allen, of the Institute of Ecology, contributed names and ideas from the harder shores of social science research. Mary Kohler, Director of the National Commission on Resources for Youth, arranged to bring to Washington young persons from a variety of exciting programs. A. LaVerne Dickerson drew upon her Forest Service colleagues, and upon her intimate contact with urban Washington, to bring us both vigorous workers in the social sciences and the warm breath of reality.

The star of the program committee emerged after nine months of vague talk, tentative plans, and heated debates over priorities. He was Roger Hart of the Department of Geography at Clark University. His personal competence in every substantive field in which we were interested was overshadowed only by his vast acquaintance and his limitless powers of persuasion.

With all these ideas bound into the Symposium-Fair, the program came off without a hitch. Nearly 500 people from nine nations attended. After the affair, the program committee was reconvened by George Moeller, who had replaced Elwood Shafer as coordinator of the Forest Service's Pinchot Institute of Environmental Forestry Research. The committee worked for over a year to develop this proceedings. Selected papers are organized into the following sections:

Section I deals with the role of the natural environment in human development.

Section II deals in a fairly hard-nosed manner with theory and research on urban children and the natural environment.

Section III is devoted to doing things with children in natural en-

vironments; its title is "Community and Institutional Response".

It is the earnest hope of those who planned and participated in the Symposium-Fair that its completion will be a beginning rather than an end, and that it will be a forerunner of many such meetings.

Financial support for the Symposium-Fair was provided by the Northeastern Forest Experiment Station, Forest Service, U. S. Department of Agriculture, through its Pinchot Institute of Environmental Forestry Research.

Although the program was planned and executed through the collective efforts of many, Calvin Stillman, of the Department of Environmental Resources, Cook College of Rutgers, the State University of New Jersey, deserves special credit for his efforts as program chairman. The facilities and local coordination provided by the Department of Human Kinetics and Leisure Studies, School of Education, the George Washington University also merit a special credit.

Many, many others contributed to the success of the Symposium-Fair; from the supplementary program funds provided by Special Aid Funds, Incorporated, and by the National Commission on Resources for Youth, to the beautiful plant arrangements provided by the U. S. Botanic Gardens. Finally, appreciation is extended to Walter Blair for organizing the creation of the photographs that appear in this Volume.

—The Symposium-Fair Program Committee

## CONTENTS

### THE NATURAL ENVIRONMENT AND HUMAN DEVELOPMENT

- Yi-Fu Tuan... 1 ...EXPERIENCE AND APPRECIATION  
Paul Shepard... 7 ...PLACE AND HUMAN DEVELOPMENT  
Florence C. Ladd... 15 ...COMMENTS ON "PLACE AND HUMAN  
DEVELOPMENT" BY PAUL SHEPARD  
AND YI-FU TUAN'S "EXPERIENCE  
AND APPRECIATION"  
Margaret Mead... 19 ...CHILDREN, CULTURE, AND EDITH  
COBB  
Calvin W. Stillman... 25 ...ON THE MEANINGS OF "NATURE"  
Briavel Holcomb... 33 ...THE PERCEPTION OF NATURAL VS.  
BUILT ENVIRONMENTS BY YOUNG  
CHILDREN  
Lois M. Stalvey... 39 ...THE URBAN CHILD: GETTING READY  
FOR FAILURE  
Martin Chemers  
Irwin Altman... 43 ...USE AND PERCEPTION OF THE EN-  
VIRONMENT: CULTURAL AND DE-  
VELOPMENTAL PROCESSES  
Philip Merrifield... 55 ...SEEING IS BEING  
B. L. Driver, Peter Greene... 63 ...MAN'S NATURE: INNATE DETERMI-  
NANTS OF RESPONSE TO NATURAL  
ENVIRONMENTS  
William R. Burch, Jr.... 73 ...LEARNING FROM THE CONTINUITIES  
IN HUMANITY AND NATURE

### RESEARCH ON URBAN CHILDREN AND THE NATURAL ENVIRONMENT

- Florence C. Ladd... 77 ...CITY KIDS IN THE ABSENCE OF.....  
Leonard S. Marcus... 83 ...WITHIN CITY LIMITS: NATURE AND  
CHILDREN'S BOOKS ABOUT NATURE  
IN THE CITY  
Thomas A. More... 89 ...AN ANALYSIS OF WILDLIFE IN CHIL-  
DREN'S STORIES  
John C. Benjamin,  
George H. Moeller,  
Douglas A. Morrison... 95 ...MEASURING ENVIRONMENTAL ATTI-  
TUDES OF ELEMENTARY SCHOOL  
STUDENTS  
William R. Burch, Jr....101 ...URBAN CHILDREN AND NATURE: A  
SUMMARY OF RESEARCH ON CAMP-  
AND OUTDOOR RECREATION  
George L. Peterson...113 ...RECREATIONAL PREFERENCES OF  
URBAN TEENAGERS: THE INFLUENCE  
OF CULTURAL AND ENVIRONMENTAL  
ATTRIBUTES  
Robert G. Lee...123 ...OBSERVATIONS IN PUBLIC SETTINGS

|  |     |  |
|--|-----|--|
| Gwen Hamlin,<br>Yona Nelson-Shulman,<br>Sheree West... | 129 | ...CHILDREN'S TELEVISION: AN ENVIRONMENTAL LEARNING RESOURCE?            |
| Anne Robertson...                                      | 137 | ...A METHOD FOR OBSERVING YOUNG CHILDREN'S MAKE-BELIEVE PLAY             |
| A. Laverne Dickerson...                                | 143 | ...THE YOUTH CONSERVATION CORPS AND ADOLESCENTS' SELF-CONCEPT            |
| Ruth Hamilton Allen...                                 | 151 | ...URBAN CHILDREN IN NATURAL ENVIRONMENTS: A FIELD STUDY IN SOCIOBIOLOGY |

#### COMMUNITY AND INSTITUTIONAL RESPONSE

|  |     |   |
|--|-----|---|
| Ellen Jacobs...                          | 159 | ...DEVELOPING TEACHERS' AWARENESS OF THE YOUNG URBAN CHILD'S ENVIRONMENT                                  |
| Mary A. Rhomberg...                      | 164 | ...GREEN IS FOR GROWING: THE GIRL SCOUT EXPERIENCE WITH ENVIRONMENTAL PROBLEMS                            |
| Robert A. Hanson...                      | 171 | ...AN OUTDOOR CHALLENGE PROGRAM AS A MEANS OF ENHANCING MENTAL HEALTH                                     |
| Rachel Kaplan...                         | 175 | ...SUMMER OUTDOOR PROGRAMS: THEIR PARTICIPANTS AND THEIR EFFECTS  |
| Stephen Kaplan...                        | 181 | ...TRANQUILITY AND CHALLENGE IN THE NATURAL ENVIRONMENT   |
| Charles A. Lewis...                      | 187 | ...HUMAN PERSPECTIVES IN HORTICULTURE   |
| Frederick W. Medrick...                  | 193 | ...CONFRONTING PASSIVE BEHAVIOR THROUGH OUTDOOR EXPERIENCE: A TA APPROACH TO EXPERIENTIAL LEARNING        |
| Dennis A. Vinton<br>Donald E. Hawkins... | 199 | ...THE NATURAL ENVIRONMENT AND HUMAN DEVELOPMENT: IMPLICATIONS FOR HANDICAPPED CHILDREN IN URBAN SETTINGS |
| Robin C. Moore...                        | 207 | ...THE ENVIRONMENTAL DESIGN OF CHILDREN-NATURE RELATIONS: SOME STRANDS OF APPLICATIVE THEORY              |
| Elwood L. Shafer...                      | 215 | ...RESEARCH NEEDS FOR PROGRAMS THAT PROVIDE NATURAL ENVIRONMENTS FOR CHILDREN                             |
| George H. Moeller...                     | 219 | ...RESEARCH PRIORITIES IN ENVIRONMENTAL EDUCATION   |
| Appendix A...                            | 223 | ...SYMPOSIUM-FAIR PROGRAM   |
| Appendix B...                            | 239 | ...LIST OF PARTICIPANTS   |

**Research on Urban Children  
and the Natural Environment**

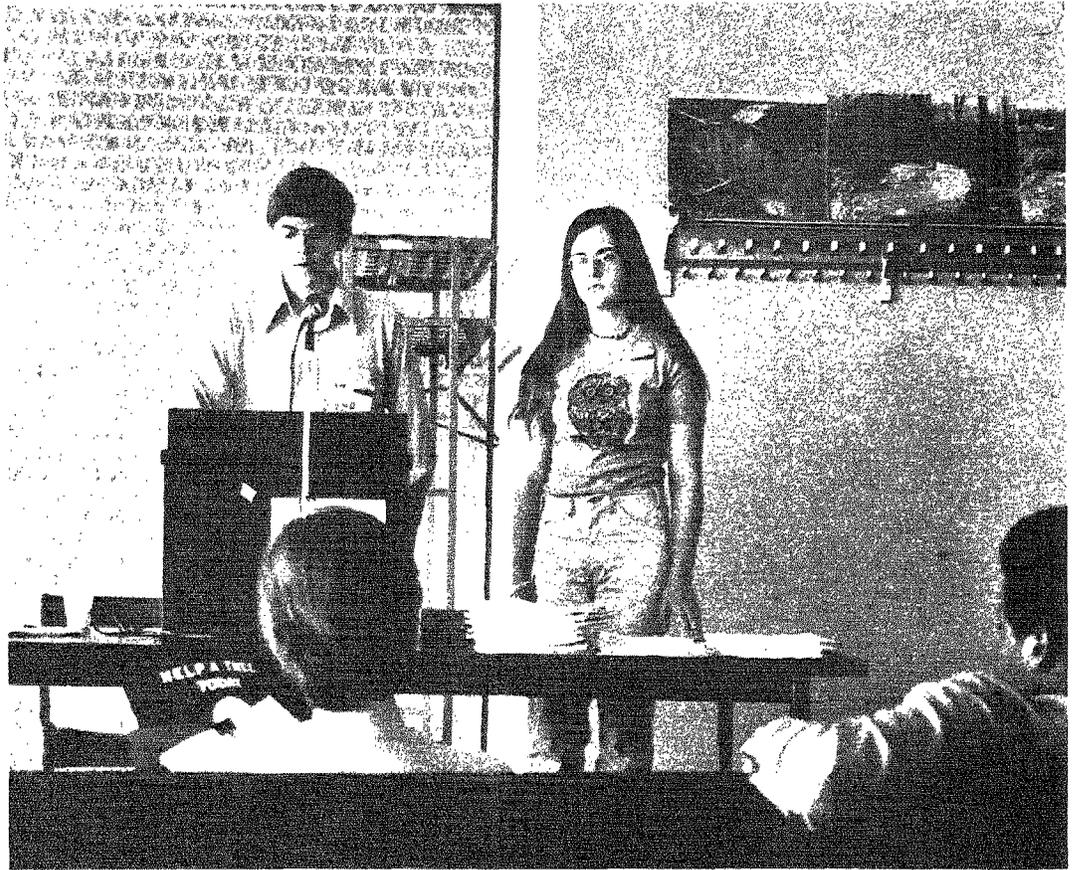


PHOTO BY MICKEY SPENCER

"We should begin by learning from adolescents what they regard as adventurous activity. With their assistance, settings and projects might be developed in which some of their own proposals for legitimate adventure might be tried" - Florence C. Ladd

## City Kids in the Absence of...

by FLORENCE C. LADD, Associate Professor in City Planning,  
Graduate School of Design, Harvard University

---

**ABSTRACT.** Environmental requirements for adolescents are rarely met in urban settings. There are few opportunities and facilities for legitimate adventure. Public amenities and public places for private moments are inadequate. Programs and facilities that would enhance the "personhood" of the urban adolescent and increase the comfort and dignity adolescents experience in public places are needed.

---

### LEGITIMATE ADVENTURE

I SPENT THE LATTER part of the 1960's engaged in a study of black adolescent boys, ranging in age from 12 to 17 years, who lived in the poorer sections of Boston's Roxbury and North Dorchester. They were the subjects of a study of identity formation in black youth. While others engaged in research focused on the impact of their families, school, and peers on their lives and their destinies, I explored what their neighborhoods and housing meant to them, where their Boston lay, and what they found in the Boston area to interest them, amuse them, depress them, excite them; what places they enjoyed, wanted to destroy, to cherish, to avoid. I soon realized that they found very few places that were interesting and safe to explore and enjoy, few places that offered them opportunities for challenging experiences and adventures that were *legitimate*.

What might they do for excitement, adventure? Steal a car and go for a ride at breakneck speed through Franklin Park or along Blue Hill Avenue. Do a little shoplifting in a downtown department store and *just* escape getting caught, getting busted. Rob the poor boxes of churches. Or grab a few pocketbooks after the first of the month, buy some grass or hash or heroin and get high. Pull a fire alarm or maybe even start a fire. Break into somebody's "pad" and "rip off" a radio or TV set which might be sold traded or simply discarded.

Such incidents are not exclusively in the domain of the black and the poor who are young. They touch the lives of our entire adolescent population. For some, they are the critical episodes that divert them from troublefree paths in directions that lead to more disruptive, trouble-making events. Still, the prospect of finding legitimate opportunities for adventure is a greater problem for poorer kids than for richer ones who, from time to time, have occasions for travel and vacations which afford them adventure through the stimulation of new settings, foreign languages, personal discovery, meeting people who are different, and so forth. Even for them, the opportunity to visit faraway places is only occasional; they, like their poorer peers, have routines and restrictions that limit the risks and the excitement they might enjoy.

Why do some kids choose to seek adventures that lead to trouble? Why don't they find fun in legitimate activities? Certainly some kids find stimulation and pleasure in museums, art galleries, and zoos. They play tennis, baseball, football, or soccer; go for a boat ride or a swim; discover new worlds in old libraries; take the elevator to the top of a skyscraper, and on a clear day are turned on by a panoramic view of their city and what lies beyond. Don't such activities afford kids experience that is sufficiently exciting and adventurous?

What is exciting and adventurous in the realm of adolescent experience in the 70s? To experience adventure, some kids, particularly in

urban settings, must test the legal and moral boundaries of society and, in the eyes of some break the law. Situations that allow them opportunities for risk-taking and exploration often are situations in which they are violating a law or the rights of property of other people, or both. An element of adventure lies, in part, in the knowledge that one is challenging or violating the legal and moral structure of his society. In urban settings, it is as if kids are forced or compelled to find adventure and excitement in activities that involve legal and moral risks. During the years when boys and girls need external challenges against which they can test their own daring and endurance, there are few legitimate opportunities available to them in their daily routines and environments for them to test themselves. There are few legitimate adventurous situations that allow them to explore the range of their physical and intellectual skills and abilities.

When we consider where young people of previous generations in the United States sought and found adventure, our thoughts turn to natural settings, wildlife, and open spaces. Vanishing are the natural areas, especially the wooded areas, in and around cities where, only a few decades ago, kids explored, charted, roamed, hid, were lost, and (the lucky ones) found safe and unhurt. Dirt roads on the edge of the city that once seemingly lead nowhere are now paved and lead into the orderly geometry of suburban developments. The pockets of wilderness, those undeveloped areas that once were found near what clearly were the city limits, have been leveled and covered with residential developments or industrial parks. There are few natural environments left where the urban adolescent may explore and experience adventure in.

There are parks, with much that is natural, of course. Most urban parks in the U.S., especially those with wooded areas where some kids might experience adventure, are regarded as unsafe. Adolescents are apprehensive about being mugged or maimed in city parks. To be sure, adolescents are users of parks. Going to a park and running the risk of being robbed or assaulted involves an element of adventure. For those who go innocently into a park, the element of adventure is incalculable; the odds may well be against them. They are not comparable to the calculable risks presented by trails through

woods or the face of a mountain or a river's rapids.

Except for the courts and playing fields for sports, playgrounds include few facilities that attract adolescents. There are a few playgrounds in the U.S. that offer adolescents the possibility of invention and the opportunity for supervising younger kids, but relatively few adolescents are to be found on those playgrounds; their clientele are largely preadolescent.

There are city-based programs such as scouting that generate adventures with the urban context. Scouting and other similar programs, such as Outward Bound and the Youth Conservation Corps, have provided wilderness experience or at least camping opportunities and environmental education for the few urban youngsters who have had a chance to participate in them. For many reasons, such programs are available and attractive to only a few. First of all, the programs are limited and they are not highly visible. They are, generally speaking, expensive to operate, and consequently, prohibitively expensive for kids from low-income families. The style of adult supervision renders the programs unappealing to some kids, who resent or resist adult authority figures. Such programs, however, have brought legitimate adventure into the lives of a few city kids.

How might the positive features of programs with adventure elements be developed as models for new situations which might appeal to a larger number of urban adolescents? What would city kids like to do to experience legitimate adventure? Under whose auspices should adventure programs be developed? (If there are "sponsors" and "programs" would the events have the quality of adventure at all?) To what extent should schools be responsible for encouraging the direct participation of students in adventurous experiences? How might features of urban environments be designed or transformed to provide settings for adventures? Can wilderness within cities be simulated and maintained for safe use by kids?

We should begin by learning from adolescents what they regard as adventurous activity. With their assistance, settings and projects might be developed in which some of their own proposals for legitimate adventure might be tried. In a city, the adventurous aspects of the work of the

fire department, city hospitals, newsgathering agencies and the police department might be made more visible to adolescents. Museums might organize clubs for would-be explorers who, through film and other media, might experience the thrills other explorers have sought and found. Scouting could be revitalized and expanded to offer more kids opportunities for the physical and intellectual tests they need. The collaboration of schools and private organizations such as the Appalachian Mountain Club, the Sierra Club, and other conservationist groups might broaden opportunities for adventure for some adolescents.

From a design viewpoint, the possibility of simulating wilderness or creating within cities environments with risk-presenting elements could be a challenge to the planner and landscape architect to go beyond the conventional playground and design places with adventurous possibilities for adolescents.

Finally, adults might reflect on what they do to experience adventure. Of course the needs of adults for adventurous experiences are quite different from those of adolescents. Nonetheless, it seems that a large segment of the adult population in the U.S. are passive, vicarious adventurers. Through the mass media, news of the adventures of others comes to us swiftly and in vivid detail. The small band of active adult adventurers who challenge time, space, mountains, seas, climatic conditions, and world records are far outnumbered by the spectators who sit at home and watch the action on television. To improve the quality and increase the number of adventure opportunities for young people in a society, we must reexamine what adventure means to its adults, its standard makers. Consider what *you*, as an adult, do for adventure and what a 14-year-old city girl or boy may do. Then consider with her or him, with teachers, parents, mayors, recreation directors, scout leaders, coaches, active adventurers, architects, and planners what legitimate adventures might be generated for city kids.

## PUBLIC AMENITIES

A means of communicating to an individual that he is a nonperson, that is, someone whose existence does not matter, or that he is less than human in some respects, is to deprive him of some basic amenities that others, more privileg-

ed, have available to them for their routine use. In public places, the absence or denial of the use of such simple amenities as places to sit, drinking fountains, and toilet facilities, is a very effective way of depriving people of their personhood, and, indirectly, a means of controlling their behavior. Until the civil rights movement of the late 50s and early 60s brought change to policies governing public facilities, blacks in the U.S., particularly in Southern States, were denied access to certain public amenities as an expression of the denial of their personhood. Other groups in history, of course, have been treated similarly in sociopolitical contexts in which they have been regarded as the outcasts or the enemy.

In contemporary American society, we now see adolescents being treated that way. Many public places that serve a predominantly adolescent clientele do not provide the simple comforts such places typical provide (or used to provide) for adults. For example, playgrounds and playing fields are developed with no toilet facilities for the young users. Restaurants (if they really can be called restaurants) that cater to adolescents frequently provide only food and formica counters; napkins, catsup, mustard, and flatware must be requested by the consumer. In recently built eating facilities, seating may not have been included in the plan; older facilities may have been stripped of their seats.

There are more extreme examples of statements by designers and managers of public places that say to young people that they are not wanted. Their money will be accepted, but they themselves are unacceptable. In and around drugstores, grocery stores, ice cream shops, and variety stores that are frequented by young people (often situated near other facilities used by them primarily, such as schools, cinemas, skating rinks, etc.) there are signs and signals that ask them not to linger. There are "authorities" who are present to make them feel uncomfortable, to let them know that they are not wanted. "No loitering", some places say figuratively as well as literally. "Move along", policemen order a line of young people leaning against a store front on a major urban thoroughfare.

The posture of adolescents in public places often is a leaning one. Kids may be seen leaning against a store front, leaning against parked cars, leaning because there is no place to sit. In

the U.S., we live in a "cafe-less society". The public or semipublic chairs and tables that afford a dignified vantage point for those who wish to linger along the boulevards and plazas of European cities and towns are not available on a large (or economically accessible) scale for the use of those who would enjoy the living theater an active street scene offers. Such places need not be exclusively for adolescents; they could be inviting to all ages as are Europe's most successful cafes.

In facilities expressly for adolescents, such as schools, amenities that would enhance the comfort and dignity of students should have highest priority. Student lounges in public high schools are often an afterthought. A classroom or corner of a corridor is belatedly converted into a "lounge" by furnishing it with a sign, "Student Lounge". Elsewhere, in and around junior high and high schools, there is ample space for milling around but there are a few places to sit except in the classroom. There are rarely benches in or around the open space and playgrounds adjacent to public schools. When students use the steps or walls of the schools for seating, they often are asked by teachers, custodians, or the principal to move, to sit elsewhere - as if there were somewhere else to sit! And so they mill around again like a discontented herd.

Inside schools, there is a good deal of milling around, too. There are expanses of ill-defined space (and time, when there is little or nothing to do) where youngsters linger while they wait for class to begin or wait to see a teacher or wait during recess or simply wait.

The arguments against providing attractive settings for young people are well known: they will misuse them, abuse them, vandalize them, deface them with graffiti. In truth, adolescents have rarely been offered attractive settings expressly for their use. They are rarely offered amenities that speak to their personhood and invite their participation in adult social forms and behaviors.

A change in cultural attitude toward adolescents may be required before we get around to improving facilities intended for adolescent users. That need not be the order of events, however. Environmental changes are simpler to implement than are attitudinal changes. Designing public environments for adolescents (and other age groups as well) with amenities that are addressed to their needs and

to their personhood might be a step toward eliciting from them more socially acceptable public behavior, and, at the same time, encouraging their adult critics to view them differently; indeed, those critics might be encouraged to acknowledge and appreciate the personhood of adolescence. Providing tables and benches along the perimeters of school yards and playing fields, small amphitheatres in parks for impromptu bongo or guitar recitals, benches along streets or at intersections where there is action to observe, adequate public toilet facilities, and comfortable student lounges in public schools are just a few environmental changes that might enhance the public lives of adolescents and increase their status on the streets of cities and towns.

## PLACES FOR INTIMACY

Adolescent boys and girls require times and places where they can enjoy each other's company in small groups or simply experience being alone. Those intimate moments, those private times, are rather special. The experience of these unique and important events is enhanced when they occur in unusual settings or in settings with special effects. What adolescents need for intimate occasions is probably very similar to what adults require for their intimate or private moments. Examine the types of settings an adult selects for an intimate meeting with a friend, a relative, a spouse—a secluded bench in the park, a grassy grove near a river bank, a corner table in a dimly lit restaurant with unobtrusive music or conversation, a booth in a bar that has a certain appeal. There are, no doubt, secluded park benches to which some adolescents retreat for some of their private moments. However, safe secluded spots in natural urban environments are harder and harder to find. Built environments that adolescents use rarely convey a feeling of privacy or seclusion. There are few settings in which they can enjoy a confidential chat or begin to explore the avenues to intimacy.

To be sure, for several decades the automobile as living room has served kids (and others) in the U.S. as a place for private experiences. The automobile as a place to sit and converse, eat, and drink is less than satisfactory, especially if the occasion is prolonged. The automobile as a setting for social occasions is pervasive in

adolescent culture in the U.S. It is not only poor and working class kids who may be found socializing in cars on Friday and Saturday nights; a tour of shopping centers or parking lots in the affluent suburbs after the stores have closed will reveal a number of parked cars occupied by kids listening to car radios or taped music while they talk, smoke, and drink beer. The automobile is a less than adequate environment for such occasions.

Kids ought to have more environmental and social options, more satisfactory settings for their special occasions. They ought to be able to

experience some of their special moments in places that enhance their dignity and delight. In planning facilities for adolescent users, their needs for places for intimacy and privacy should be taken into account. At the same time, the values, standards, and expectations of society must be taken into account, too. Reconciling these different needs is not easy; reports and suggestions from many quarters are needed to determine how far the culture is ready to move toward improving this aspect of the lives of its less privileged adolescents.

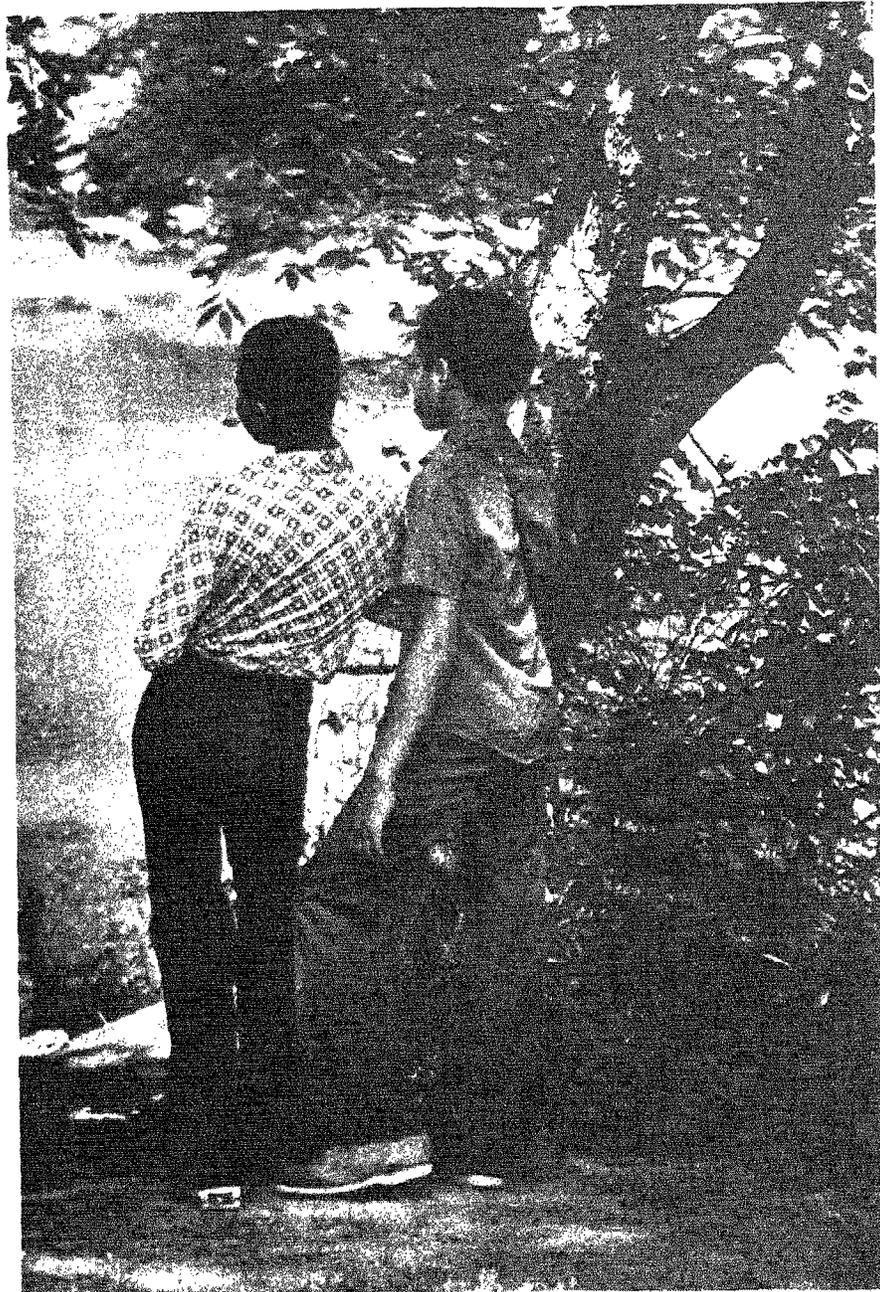


PHOTO BY WALT BLAIR

“Once man hunted wild animals and gathered wild roots and berries in the wilderness to survive. Now we must hunt for the wilderness itself” - Leonard S. Marcus

## Within City Limits: Nature and Children's Books About Nature in the City

by LEONARD S. MARCUS, *Writer, Dover Books, New York, New York.*

---

**ABSTRACT.** Many children's books give the impression that we must leave the city to be "in nature." This is a review of children's books about nature found within city limits. The books include a natural history of New York City; a guide to city wildflowers and other weeds; a book about city trees; a delightful inquiry into the true nature of the roach; a book of experiments and collecting methods for amateur naturalists; and a story about a family of ducks in Boston. Readers of these books may not only learn to identify many urban forms of nature, but may also see some of the ways these join in our experience of city life.

---

FOR AS LONG AS cities have had a major place in American life, most American writers writing on "nature" and the "city" have taken the two terms as opposites, and from at least two points of view.

First, the city has been considered an unhealthy environment and nature, to be found mainly elsewhere, a healthful one. Advocates of the plan to build Central Park compared the park to a lung that would help purify the urban industrial air.

Then also writers have expressed the more debatable, and debated, idea that the purification nature affords is spiritual as well, that nature serves as a cure for some artificial quality of urban life.

Accounts of city life pointed to the bad influence of the "crowd" on individual behavior, interpreting the cause and effect in various ways, and ending with the seemingly obligatory conclusion, as in the carefully constructed argument of Frederick Law Olmsted:

... whenever we walk through the denser part of town, to merely avoid collision with those we meet and pass upon the sidewalks, we have constantly to watch, to foresee, and to guard against their movements. This involves a consideration of their intentions, a calculation of their strength and weakness, which is not so much for their benefit as

our own. Our minds are thus brought into close dealings with other minds without any friendly flowing toward them, but rather a drawing from them. Much of the intercourse between men when engaged in the pursuits of commerce has the same tendency... People from the country are over conscious of the effect on their nerves and minds of the street contact—often complaining they feel confused by it; and if we had no relief from it at all during our waking hours, we should all be conscious of suffering from it. It is upon our opportunity of relief from it, therefore, that not only our comfort in town life, but our ability to maintain a temperate, good-natured and healthy state of mind, depends...

There. Olmsted, the builder of urban parks, saw the solution to the problem within city limits as a problem of design. While the American park movement rapidly spread, and to a remarkable extent under Olmsted's personal supervision, the urban parks apparently did not satisfy the city peoples' desire for contact with nature. By the turn of the century, as Peter Schmitt in *Back to Nature: The Arcadian Myth in Urban America* (Oxford, 1969) describes, American urbanites had devised many recreations as ways of communing with nature: some acting vicariously, reading essays and popular fiction and looking at postcards and stereoscopic views; some actually taking to the wilds. A striking feature of the latter group of Arcadian travellers was their tendency to take certain

conveniences of the city along wherever they went, and to plant these in such a way as to make the wilderness seem more like home.

The very roads which made the countryside more accessible altered the nature of the destination, bringing out such crowds as city people had hoped to escape, then also demanding the facilities (hotels, refreshment stands, etc.) to support them. Under these and other pressures, "wild" nature was modulated to urban proprieties and interests. The city parks spread as expressions of cultivated nature. The suburbs developed as an ambiguous case. Gradually, playgrounds and other facilities appropriated more space in the city parks from the landscape, adding another layer of human design.

Once man hunted wild animals and gathered wild roots and berries in the wilderness to survive. Now we must hunt for the wilderness itself. Recently, a number of writers of children's books, apparently departing from the traditional view that the city and nature are opposite places, have looked in the city itself for evidence of wild nature.

John Kieran's *A Natural History of New York City* (Natural History/Doubleday, 1971) is a fairly large book, including chapters on every major group of plants and animals found, or once found, in New York City; it implies a great deal for readers in other cities interested in finding out about such things.

Four species of bats have been found in New York City, four types of gulls . . . Kieran does not want a systematic inventory here; he goes out of his way to leave certain matters to the "scientists." Kieran has found Arcadia in the city. In writing about nature, Kieran makes good fellowship count for as much as sharp observation, of which there is plenty, and both seem necessary to his seeing of the natural world:

So much for the Crowfoot Family . . . though there are many other representatives of the Crowfoot clan hereabout for those who have the time and the desire to seek them out. We have to move on to . . . the Bloodroot (*Sanguinaria canadensis*). The ghastly name is due of course, to the thick orange-crimson juice that oozes from a break in any part of the plant . . . Bloodroot survives in only a few favored localities within the city limits. We who share the knowledge of this particular patch feel like fellow conspirators as we keep watch in early April . . . on a certain tree-studded bank that we pass regularly on our morning walks . . . Good fellowship, the exact touch of the scientific

name, flashes of sensuous detail beside the author's good-natured piques, an evident interest in nature lore, a touch of romance and of the absurd—all mark the Arcadian, the city dweller who turns to nature occasionally for spiritual relief, at times traveling to great lengths for the experience, though Mr. Kieran makes his gesture at the artifact itself, taking wonder, as he does, that wild nature continues to exist in and around the city.

In much the same spirit, Anne Ophelia Dowden has provided an account of one group of wildlife found in the cities: weeds (*Wild Green Things in the City*, Thomas Y. Crowell, 1972). Weeds are defined as plants unwanted by man: where they grow they grow despite human efforts to destroy them or to ignore their presence. Most city weeds are found in "vacant" lots.

Other weeds grow in cracks in office buildings, in railroad yards, in parks. They take part in the collage effect of city life in contrast to the still life of the pastoral landscape. In parks weeds point to the degree of human control imposed on nature. On a "well-appointed" lawn a weed is taken as a flaw.

Miss Dowden observes:

Whenever man ceases to be watchful—if he fails to repair a crack in the sidewalk or remove a pile of dust in a corner—plants will appear. And if large areas are opened up—as in bombed-out London during World War II—they will soon become gardens of wild flowers. Within two years after the big air raids of 1940-41, dozens of species of wild plants had moved into the London cellar holes and piles of rubble. In the normal times of the 1970's, over 90 species have been found in New York, over 60 in Denver, over 130 in Los Angeles.

This book includes the author's excellent color illustrations of several species of weeds, with details of leaves, roots, flowers, and seeds; a month-by-month account of what changes to look for; a discussion of how plants reproduce and how they manage to do so in the city; and definitions of basic terms where these come up in the life-cycle as it is described.

We do not realize all our relations to the rest of the natural world: this is a source of the wonder Miss Dowden expresses. She takes pleasure in noting that people are often the unknowing carriers of seeds which spread the plants they consider not worth noticing. The book concludes with a list of all species of wild plants known to grow in New York City, Denver, and Los Angeles.

Among human beings, great shame is attached to being without a name. Prisoners learn this. People speak of defending their good name and of making a name for themselves. We share

a corresponding desire to name the objects of experience.

Most city people come to nature with an exceptionally limited knowledge of the names for what they find. It may be that part of the uneasiness, blankness, or wonder we feel in the presence of nature—if we feel these things—comes from the lack of particularity in our means of speaking and thinking about what we see as compared, say, to that provided in abundance and broadcast in the cities and in the media.

Many nature lovers, some marvelously geared, have taken to the fields to learn the names of the wild things they find there. Many school children, remaining indoors, have had to learn the names of many things, wildflowers included, as punishment or as what seemed like punishment. It would seem foolish to use these books in the latter way. Still who can say whether knowing the names of the natural objects we actually do see brings us any “closer” to them. Wallace Stevens remarked:

Words add to the senses. The word for the dazzle  
Of mica, the dithering of grass,  
The Arachne integument of dead trees,  
Are the eye grown larger, more intense.  
 (“Variations on a Summer Day”)

*City Leaves City Trees* by Edward Gallob (*Scribners, 1972*) furnishes a means of identifying trees likely to be found in American cities. Mr. Gallob begins with a series of drawings of general leaf types, followed by sets of facing pages each of which treats a species with photographs, short descriptions and photograms (negative images) of the leaves. The author ends by telling how to make photograms and how to go about collecting tree leaves, twigs, flowers, fruit and seeds. The text is mainly factual; the illustrations are large and striking and likely to appeal to anyone curious to find these trees.

Curiosity is not always encouraged by children’s books. Many early Calvinists considered the child’s inquiring nature, where it surfaced, as evidence of depravity, and a large proportion of the first American children’s books, and many after, had little to do with nature or curiosity but instead earnestly instructed the child on how to prepare for a pious death.

Early in the nineteenth century, European fairy tales appeared in America but there was strong opposition to their distribution. Adults of

many persuasions argued that the talking animals and other unnatural phenomena endangered the child’s soul with their false picture of creation:

Dialogue between wolves and sheep, cats and mice . . . is as destructive of truth and morality as it is contrary to the principles of nature and philosophy.  
 (Lyman Cobb)

As spiritual people we look down with much contempt upon the man who would in anything compare us with the lower animals. His mind is mean and quite beneath our indignation.  
 (Harriet Martineau)

As antidotes to these unnatural tales, dozens of little books appeared in the early nineteenth century that sought to guide youth “from the open book of nature to the duty of God.” Most of these works proposed a novel laboratory technique which must have fascinated young naturalists at first, although the repeated experience of turning over a rock only to find a moral lesson revealed there probably dulled the interest of the normal child. While the dog slept at the child’s feet, for example, the mother was to remark on its fidelity and enduring gratitude. The mother instructing her children was to teach their little feet to turn aside from the worm and to spare trampling the nest of the toiling ant . . . and so on.

A book that, on the other hand, takes a subject virtually everyone in the city has some preconceptions about and holds these up to question, notes:

. . . There is a city insect that is not hard to find. People everywhere know it well. They spend a lot of time thinking of ways to get rid of it, and the rest of the time they prefer not to think of it at all. If they see one in their house, they may screech with horror and try to kill it before it scurries into a crack and disappears. The lowly cockroach is not loved by man.

(*Cockroaches*, by Joanna Cole; *Morrow, 1971*). The author proceeds to describe the cockroach’s history, habits, and chances for survival. This is all very well, though it would seem that people who deal with cockroaches on a day-to-day basis know at least as much about their habits as they care to as it is, while a knowledge of the cockroach’s future prospects would seem gratuitous; an unwanted luxury, in a sense.

Moreover, in the countryside a pest comes as God’s punishment or bad luck or as a failure to prepare; in the city which has landlords and housing authorities cockroaches also have a political side, standing for poor conditions. As much as dandelions on the most dignified lawn,

cockroaches have come to involve human dignity.

The author here entertains the idea there may be more to know about cockroaches than that. Her method is to gather more facts, mainly around the question of how cockroaches have survived despite all efforts to destroy them; often, as the author notes, by exterminators who arrive in unmarked trucks. Like the author of *Wild Green Things in the City*, she takes adaptation, a process all city wildlife has apparently mastered, as a center of discussion. It turns out that roaches are "living fossils," having lived in the same form for the last 300 million years; that they not only eat almost anything but can eat nothing and survive for some time; that they carry no germs harmful to man, are actually less harmful than the common housefly; and that in any event they can withstand 100 times more radiation than man and seem likely to survive at least as long as man will.

In the city, nature tends to be associated with the city museums. There are first of all the natural history museums, the botanical gardens, zoos, and aquariums, which house many of the rarest and most carefully tended examples of nature the city has to offer. Then also the city parks, a remarkable number of which, the work of Olmsted and his associates, reflect principles of landscape design learned from English landscape paintings found in the art museums that are often placed along the parks' edge. Along the city streets many trees are enclosed by tiny fences and controlled as to growth, giving them a manned as well as a treelike appearance; several trees in Central Park have been furnished with cards that tell their names, plant histories, and something about their physical characteristics.

A book about the city's various nature collections is *Collecting for the City Naturalist*, by Lois J. Hussey and Catherine Pessino (Crowell, 1975), in which the authors outline several ways to gather specimens and records of both wild and planted city nature.

They point out, for example, one naturalist's collection in the city that is usually ignored: the rock collection that consists of the city's stone buildings. The authors cautiously advise the reader to choose a demolished building, of which every city has many, for collecting specimens,

and explain a safe and easy way of going about this.

They also explain methods for collecting leaves, preserving bird tracks, keeping ants, and so on, with nice illustrations by Barbara Neill, and some notes on what original research any careful observer can do. These are projects that appeal to the reader's curiosity; aimed particularly at those interested in thinking of themselves as "scientists," an attitude not overinsisted upon but clearly admired by the authors.

A naturalist observing nature regards himself as an observer; as a constant in the situation he observes; as a professional. John Kieran, we know, preferred the amateur's pose, describing nature largely in "personal" terms, by association, so that his book, although it contains a great many facts, is probably about as interesting as he himself seems to a reader. Certain associations with nature are widely held: the cockroach's usual reputation and the low status of weeds are examples of popular associations that Miss Dowden and the other authors mentioned here have found it interesting to explore, as evidence of how nature, as part of the variousness of the world, both alters and is altered by our moods, feelings, and view of the world.

Still another way of looking at nature is that of the story teller. In *Make Way for Ducklings* (Viking, 1969), Robert McCloskey tells the story of a family of ducks looking for a place to live. They fly past the wilderness, where they notice predators likely to make life uneasy for them, and eventually settle on a tiny island in the Charles River in the heart of Boston, from which they fly all over exploring the city.

These ducks are neither completely animals acting like people nor people dressed up like animals, and seem enough like both for us to half-identify with them and so half-see the city from an other-than-human perspective. Mrs. Mallard, having trained her children, takes them around:

When at last she felt perfectly satisfied with them, she said one morning: "Come along, children. Follow me." Before you could wink an eyelash, Jack, Kack, Lack, Mack, Naek, Ouack, Pack and Quack fell into line, just as they had been taught . . . Mrs. Mallard stepped out to cross the road. "Honk, honk!" went the horns on the speeding cars. "Qua-a-ack!" went Mrs. Mallard as she tumbled back again. "Quack! Quack! Quack! Quack!" went Jack, Kack, Lack, Mack, Naek, Ouack, Pack, and Quack . . .

Readers of this book do not automatically acquire much scientific knowledge about ducks. Any explanation spoils the story, which is short enough for anyone to read or have read to him. I include it here with books about "real" nature, as it is often called, because the story is a wonderful one to have imagined, and because the more nature comes under human planning, the more it becomes what we imagine it to be.

## LITERATURE CITED

- Cole, Joanna.  
1971. **Cockroaches**. Morrow, N. Y. 64 p.
- Dowden, Anne Ophelia.  
1972. **Wild green things in the city: A book of**  
Crowel, N. Y. 56 p.
- Gallob, Edward.  
1972. **City leaves city trees**. Scribners, N. Y. 36
- Hussey, Lois J., and Catherine Pessino.  
1975. **Collecting for the city naturalist**. Crowell.  
p.
- Kieran, John.  
1971. **A natural history of New York Cit**  
Hist./Doubleday. Garden City, N. Y. 308 p.
- McCloskey, Robert.  
1969. **Make way for ducklings**. Viking, N. Y. 6
- Schmitt, Peter J.  
1969. **Back to nature: The Arcadian myth in**  
**America**. Oxford, N. Y. 230 p.
-

"The attitudes, beliefs, and values acquired by children through literature will exert tremendous influence over their adult behavior" — Thomas A. More.

# An Analysis of Wildlife in Children's Stories

by THOMAS A. MORE, *Research Forester, USDA Forest Service, Northeastern Forest Experiment Station, Amherst, Massachusetts.*

---

**ABSTRACT.** Urban people encounter wildlife in various ways. One of the most important is the vicarious encounter with animals in children's stories. The surprising number of children's animal stories can be divided into three categories, each of which affects children's beliefs, attitudes, and preferences for wildlife. Because children's stories may have such a lasting effect, we need to consider the ways in which animals are portrayed in them.

---

URBAN CHILDREN come into contact with wildlife in a variety of ways. My purpose in this paper is to discuss some of these types of encounters, and the effects on children, with particular emphasis on children's stories.

In a world of concrete and pavement, animals once common have long since disappeared, and have been replaced by pigeons, rats, and squirrels. An occasional raccoon's visit becomes a major event in a suburban neighborhood, and the appearance of a deer provides a topic of family conversation for days.

To a child growing up in such an environment, the opportunity to experience some types of wildlife is severely limited. Yet childhood is the very time when we are subject to the formation of attitudes, preferences, beliefs and values that will govern our behavior for our remaining adult life. Research has indicated that preferences for recreational activities acquired in childhood are major determinants of adult recreational preferences (*Sofrenko and Nolan 1972, Yeosting and Burkhead 1973, Strong 1951*). The main factor in generating these preferences is frequency of participation as a child. I believe a similar process occurs in the formation of preferences for, or aversions to, different species of wildlife. The more frequently a child is exposed to a species, the more familiar he or she will become with it, and the greater his or her preference for it will become.

At first glance, this implies that only pigeons, rats, squirrels, and similar city-dwelling animals will be preferred in the future. Not true. Some people like pigeons; others only tolerate them; and still others vilify them. Certainly no one would consider the rat to be one of the animal kingdom's heroes. At the same time, there is every indication that people value contacts with bears, deer, and other animals that occur infrequently in urban environments. The basic reason for this is that people—and especially children—encounter animals in other ways than by simple direct observation.

## TYPES OF LEARNING ENCOUNTERS WITH WILDLIFE

When children learn about a specific animal, the learning will be the result of one of three basic types of encounters with wildlife: direct natural experiences, direct artificial experiences, and vicarious experiences. Direct natural experiences occur when a child encounters an animal directly in its natural habitat. These encounters give the child an opportunity to observe the animal and its behavior in a natural setting. Learning in this kind of encounter comes from simple observation associated with curiosity. This sort of learning

has generally been considered inferior to learning with reward, but is quite potent nonetheless. In fact, in learning about animals commonly found near a child's home, observational learning may well be the most important sort of learning because it occurs with greater frequency than other kinds of learning.

Using the behavior of the animal in its natural habitat as a referent, then the informational accuracy of direct natural experiences is 100 percent. Through these encounters the child learns that a flock of pigeons can be attracted by popcorn, but that a sudden movement will startle them. Or that squirrels are agile in jumping from tree to tree, and that they fear dogs. Or that rabbits will first freeze and then run away if frightened.

But, while this type of learning may be factually accurate, its overall importance is severely limited by the urbanization trends mentioned above. Animals, of course, are not distributed evenly over the landscape, and the probability of having direct natural experiences with many species is quite low. Moreover, though cities do support a variety of animal species, many of these animals are nocturnal and thus are active at a time when most children are unable to observe them.

The second type of encounter with wildlife is the direct artificial experience. In this case, the child can observe the animal directly, but in a situation where the animal is removed from its natural habitat. Examples include zoos, museums, circuses, and nature study programs in schools. Though the informational accuracy of such encounters may be fairly high thanks to many of the interpretive signs found in these institutions, it is substantially less than in direct encounters because the animal's environment is not natural, and because the animal's behavior will have been altered in some way. For example, bears in the wild do not sit up and beg for marshmallows as do bears in zoos; birds do not live in sterile glass cases surrounded by other birds of different species as they are found in museums; and certainly no one would claim that the behavior of circus animals even comes close to that of animals in the wild. Thus, though the informational accuracy of this type of encounter is fairly high, there still may be a fair amount of misinformation in this kind of encounter.

The primary type of learning associated with these encounters is still the observation-

curiosity kind, but in some cases learning with reward is possible. For instance, many zoos and nature centers provide quizboards with perceptual rewards like flashing lights for correct responses. Thus, the child is rewarded for learning about the animal.

Generally, the direct artificial contact with wildlife is the least important of the three. Though a tremendous demand exists for these kinds of facilities, I doubt that the average child spends a great deal of time in them over the course of a year. In addition, these are perceptually rich environments with so large a number of animals competing for a child's attention that the child may not learn a great deal about any specific one.

The third type of encounter with wildlife is the vicarious experience. Here, the child never comes in contact with the animal at all, but learns about it indirectly through some alternative source. Sources of this type of experience include television, newspapers, movies, peers, adults, and, of course, children's literature.

It is with this vicarious type of wildlife contact that the factual content may reach a low ebb. To be sure, there are many factually accurate television shows and movies about animals, but even these reach the child only through an editor who may choose to emphasize such things as the playfulness of immature members of a species, or the like. It is hard not to view the main subject of an animal show as a hero.

It is, however, in children's literature where the greatest misinformation occurs: bears in pants, crows with hats, ducks mowing lawns, squirrels living in houses, etc. A major kind of learning involved in this type of encounter with wildlife is paired-associate learning (*Stevenson 1972*). In this type of learning, words that appear together frequently become associated. Thus, children come to learn about the *sly* fox, the *big bad* wolf, the *slow* turtle, or the *friendly* bunny. In fact, these adjectives may represent the very foundations of anthropomorphism. It would be interesting to investigate the frequencies with which certain adjectives are associated with different species.

Vicarious contacts with wildlife may well be the child's single most important source of contact. A child who grows up in the city may have limited opportunities for the other types of wildlife experiences, but opportunities for

vicarious contacts are virtually unlimited. Moreover, though much of the children's literature dealing with animals is nonfiction, some research has indicated that children prefer fantasy to fact in their stories. This could certainly be expected to compound the problem of informational accuracy.

## ANIMAL CHARACTERS IN CHILDREN'S STORIES

Children's books can be placed in relatively few categories, including adventure, history, sports, biography, what to do when you grow up, etc. And, of course, animal stories.

To estimate the importance of animal themes as a topic, I used the title index of *Children's Books in Print 1972* (Xerox 1972), to make a list of titles that included either "animal", "wildlife", or the name of a particular type of animal. Stories about zoos and farms were also included because they so often are about animals. In some cases, this resulted in the inclusion of books with little or nothing to do with animals. For instance, a story about Sitting Bull, which has to do with Indians, not animals, would be included. On the other hand, this criterion excluded other stories containing wildlife characters because no mention of them was made in the title. It was frustrating to have to pass up such obvious contenders as *Little Red Riding Hood* and *Bambi* because no mention of wildlife occurred in their titles.

In 1972, out of about 40,250 children's books in print, 5,473—13.6 percent—had one or more animals mentioned in the title. I suspect this figure is somewhat low because of the problems with the criterion mentioned above, but I have no empirical justification for this belief. Moreover, while books were not coded into the other categories, I would not be surprised to hear that animal books were the single most frequent type of book in all children's literature.

## EFFECTS OF ANIMAL TALES

Children's responses to and preferences for animal themes in literature vary with age and story content. Arbuthnot (1957, 1969) suggests that there are three categories of animal stories: ourselves in fur, animals as animals but talking,

and animals as animals. "Ourselves in fur" is the oldest type of talking-beast folk tale. In these stories, represented by *Aesop's Fables*, *The Wind in the Willows*, and *Peter Rabbit*, the animals talk to one another and are subject to the same follies, foibles, and virtues as humans. These stories are preferred by the youngest children, perhaps because they can recognize characteristics of us adults in the characters. The outraged and outrageous malevolence of an infuriated Donald Duck strikes a chord within all of us. Jan (1969) has condemned this type of tale as being a cornerstone of anthropomorphism.

As children age, however, their tastes change and they come to prefer the more complex tales of animals as animals—but talking. In these stories, represented by Kipling's *Jungle Books* or Hans Christian Anderson's *Ugly Duckling*, the animals lack all human attributes except the powers of thought and speech.

The third type of animal tale—animals as animals—is more realistic because the animals lack all human attributes: they behave only as animals. Examples include such books as Margurite Henry's horse stories and *The Yearling* by Marjorie Rawlings. Arbuthnot believes that in this type of children's fiction animals are portrayed with the greatest objectivity and realism. She is probably correct. Yet it is important to remember that what is objective and realistic to a specialist in children's literature may seem somewhat less so to a biologist. Statistically, the number of children who manage to befriend bobcats or who have the opportunity to nurture a wounded fawn must be quite limited, yet city children may come to believe that this is a standard part of rural life because it happens all the time in books.

Despite the claims for realism and objectivity in the third type of story, I believe that it is these stories that contribute most to popular misconceptions about wildlife. In Freudian terms, these stories are read during the identification and latent stages of development—the stages where children acquire the beliefs and values that will govern their behavior for the remainder of their lives.

Some people have argued that even young children can differentiate between fantasy and reality. When they read the first type of story (ourselves in fur), they know that the rabbit in their yard will not be wearing a jacket like the

rabbit in the book. Similarly, they may be aware that their pets or the animals at the zoo do not talk as do the animals in the second type of story. But, in the third type of story, fact and fantasy become virtually inseparable. True, the animals do not talk or think and they must struggle for survival, but they are just as often given human emotional characteristics such as loneliness, sadness, joy, and so forth. Consider the powerful effect that a story like *The Yearling* must have on a susceptible child. In this story the pet fawn must eventually be shot because it has been eating the garden. What effects might this type of story have on children's attitudes toward deer?

The attitudes, beliefs, and values acquired by children through literature will exert tremendous influence over their adult behavior. The preferences for and aversions to different species obtained in childhood stick with us for a long time. And these preferences may well be the cause of significant problems for wildlife management.

Proverbial among such problems is, of course, the sad case of "the big bad wolf". The image of the wolf in children's media is thought to have been a major factor in its almost complete elimination throughout most of the United States. Fortunately, the wolf now seems to be getting some better press (*Erickson 1970*).

But other management problems persist. The rapid growth of anti-hunting sentiment in the United States (*Klein 1973*) is probably at least partially attributable to such children's stories as *Bambi* and *The Yearling*. Whatever one thinks of hunting, wildlife managers feel that it is one of their most important management tools for controlling wildlife populations. In many areas, deer herds have proliferated to a point where they may do irreparable damage to their habitat. Yet the sentiment against hunting them may be so strong as to force a court decision on the issue.

Yet another important problem in many National Forests and National Parks comes from people-bear interaction. Rangers in Shenandoah National Park (*Wissinger 1974, personal communication*) have told me that much of their time is spent protecting people from bears (or perhaps visa versa). Not only do

children want to see bear cubs, but frequently they will fight one another to get close enough to pet one. These are dangerous tactics if the adult female bear should be nearby.

Why this extreme desire to touch a bear? Bears are one of the most popular subjects in children's books. Consider the image they present. Occasionally they play the villain, as in the Uncle Remus stories; but more often they are portrayed as being slightly dull and rather comic, as in the story of *Goldilocks and the Three Bears*. Movies and television shows often focus on bear cubs enjoying romps through field and forest. Is it any wonder that children love bears?

We could examine other wildlife people problems in the same light, but the key point is that the image of animals created in childhood tends to persist. The content of this image will be dependent on the information the child receives about the animal. With successive generations growing up in large cities, a prime source of such information is children's literature. Just as the women's liberation movement is concerned with how women are portrayed in this literature, so we must be concerned with the image of the natural environment it presents.

## LITERATURE CITED

- Arbuthnot, May Hill.  
1957. **Children and books**. Scott, Foresman and Company, Chicago. 684 p.
- Arbuthnot, May Hill.  
1969. **Children's reading in the home**. Scott, Foresman and Company, Glenview, Ill. 374 p.
- Erickson, David L., and G. Norman Van Tubergen.  
1972. **The wolfmen**. *J. Environ. Educ.* 4(1).
- Jan, Isabelle.  
1973. **On children's literature**. [Trans. by Catherine Storr.] Allen Lane, London. 189 p.
- Klein, David R.  
1973. **The ethics of hunting and the anti-hunting movement**. *In Human dimensions in wildlife programs* : 100-111. Wildl. Manage. Inst., Washington, D. C.
- Sofrenko, Andrew J., and Michael F. Nolan.  
1972. **Early life experiences and adult sports participation**. *J. Leisure Res.* 4(6):6-18.
- Stevenson, Harold W.  
1972. **Children's learning**. Appleton-Century-Crofts, New York. 388 p.
- Strong, E. K.  
1951. **Permanence of interest scores over 22 years**. *J. Appl. Psychol.* 35:89-91.
- Xerox Corporation.  
1972. **Children's books in print**. R. W. Bowker, New York. 786 p.
- Yeosting, D. R., and D. L. Burkhead.  
1973. **Significance of childhood leisure behavior: an exploratory analysis**. *J. Leisure Res.* 5(1): 25-36.



PHOTO BY WALTER BLAIR

“Attitudes most difficult to transfer through elementary school environmental education programs are those that concern natural ecological processes such as the life-death cycle of living organisms” - John C. Benjamin, George H. Moeller, and Douglas A. Morrison

## Measuring Environmental Attitudes of Elementary School Students

by JOHN C. BENJAMIN, GEORGE H. MOELLER, and DOUGLAS A. MORRISON, respectively, Park Ranger, USDI National Park Service, Lake Mead, Nevada; Program Coordinator, Pinchot Institute for Environmental Forestry Research, USDA Forest Service, Northeastern Forest Experiment Station, Upper Darby, Pa.; and Research Associate, Department of Managerial and Social Sciences, SUNY College of Environmental Science and Forestry, Syracuse University, Syracuse, New York.

---

**ABSTRACT.** A modified semantic differential was developed to measure environmental attitudes of sixth-graders. Classes were selected to represent different socioeconomic and residence backgrounds and degrees of previous exposure to structured environmental programs. Results indicate that: exposure to environmental education fosters favorable environmental attitudes; socioeconomic background and exposure to environmental education do not influence attitudes toward familiar, nonwater natural elements; urban students from low socioeconomic neighborhoods are unfamiliar with natural processes involving water resources; attitudes most easily transferred identify man as a contributor to environmental problems; and attitudes most difficult to transfer deal with ecological processes. Results provide a way to measure children's environmental attitudes and suggest a way to develop environmental programs for specific student groups.

---

THE INCREASED EMPHASIS placed on environmental education in public schools is an important development of the contemporary ecology movement. The transfer of knowledge about environmental systems is basic to successful environmental education programs. But an equally important result of environmental education is the extent to which the students' attitudes are changed by their exposure to such programs (Caldwell 1970). Studies have been carried out to test retention and cognitions, but the effect on attitudes of exposure to environmental education has gone largely unexplored.

A device for measuring attitudes toward the environment would be of value for identifying students' attitudes before they embark on an en-

vironmental education program. With this information, the instructor could put additional effort into areas where the students' environmental attitudes are poor, and spend less time on topics toward which they already have favorable attitudes. The same measuring device could be used to determine change in environmental attitude after the program has been completed.

The purpose of this study was to develop and test a method of detecting differences in elementary school children's environmental attitudes, and to use the method to find possible reasons for differences between children exposed to structured environmental education programs and those not exposed.

## THE STUDY GROUPS

Three study groups were drawn from sixth-grade public school students—one school within the city of Syracuse, New York, and two schools in a nearby suburban community. A fourth study group consisted of graduate students and faculty at the State University of New York College of Environmental Science and Forestry.

The first study group consisted of 35 sixth-grade students from a school in an aging residential neighborhood in Syracuse, New York. The median family incomes for the two census tracts from which the students were drawn were \$7,241 and \$7,600 and the median housing values were \$12,500 and \$15,200 (*U.S. Bureau of Census 1970*). This group had not been exposed to a structured environmental education program.

The second group consisted of 37 students from a sixth-grade class at a school 2 miles from the center of a suburban community. The newly constructed building is in a rural setting, with a woods bordering on the school playground. The median family income in the suburban community was \$14,625 and the median housing value was \$32,000. No special effort had been made to teach the students about conservation or the environment.

The third student group consisted of 18 sixth-grade students who attended a renovated former high school near the center of the suburban community. The median family income and the median housing value were the same as for the other suburban school. This group had been engaged in a coordinated environmental education program during the school year before the study.

The final group, our criterion group, was made up of 12 faculty members and graduate students from the State University of New York College of Environmental Science and Forestry at Syracuse University, Syracuse, New York. It was assumed that these individuals, all of whom had at least 5 years of college-level study in some aspect of the natural environment, held ideal environmental attitudes.

## STUDY PROCEDURE

The optimal device for measuring environmental attitudes should sample attitudes on a wide range of environmental topics. The

method should measure specific attitudes about environmental topics (e.g. the role of decomposition, air pollution, etc.). It should also measure the intensity of an attitude so that change in attitudes could be detected.

To meet these criteria, a technique was developed that used 24 color slides of various natural and man-dominated environments and elements in these environments. A modified form of the semantic differential was used to solicit attitudes toward the scenes (*Osgood et al. 1957*). The semantic differential was adjusted to the comprehension level of the sixth-grade students. The test instrument was set up so that students could judge each of the slides in terms of three adjective pairs; beautiful-ugly; bad-good; happy-sad. The range of alternatives between descriptive adjective pairs on each semantic scale was limited to five: e.g., *very good, good, neither good nor bad, bad, and very bad*.

The order in which the adjective pairs appeared for each of the 24 slides was randomly determined. However, in each instance the polarity of the second adjective pair was reversed. Combined with the random order of occurrence, this reversal of polarity forced the students to read each of the alternatives carefully. The reversal also helped to break up response patterns like marking all the choices in one column. Thus, a typical set of scales for a slide was:

|                |           |                            |      |           |
|----------------|-----------|----------------------------|------|-----------|
| Very beautiful | Beautiful | Neither ugly nor beautiful | Ugly | Very ugly |
| Very bad       | Bad       | Neither good nor bad       | Good | Very good |
| Very happy     | Happy     | Neither happy nor sad      | Sad  | Very sad  |

## DATA ANALYSIS

Individual student responses on each scale were assigned numerical scores as follows:

|              |                           |
|--------------|---------------------------|
| 1 = VERY:    | Good, beautiful, or happy |
| 2 =          | Good, beautiful, or happy |
| 3 = NEITHER: | Good nor bad              |
|              | Beautiful nor ugly        |
|              | Happy nor sad             |
| 4 =          | Bad, ugly or sad          |
| 5 = VERY     | Bad, ugly or sad          |

An average response—one for each slide scene—was obtained from each subject by adding the three scale score responses and dividing by three. This score provided an indication of the student's relative attitude toward the particular slide scene.

Scheffe's method for multiple comparisons (Guenther 1964) was used to compare statistically the group response distribution of each elementary school group with those of the criterion group for each scene. The null hypothesis tested was that the response distribution of each of the student groups was the same as that of the criterion group. The magnitude and direction of differences between the responses of individual elementary school groups and those of the faculty and graduate student criterion group provided the basis for evaluating the impact of organized environmental education on elementary school students' environmental attitudes.

## STUDY RESULTS

In discussing results, the study groups will be referred to as follows:

- Criterion—Faculty and graduate student group
- High E.E.—High socioeconomic suburban group with environmental education
- High N.E.E.—High socioeconomic suburban group with no environmental education
- Low N.E.E.—Low socioeconomic urban group with no environmental education

## ENVIRONMENTAL ATTITUDES, EDUCATION AND SOCIOECONOMIC BACKGROUND

The average group responses to each of the 24 slide scenes and results of statistical tests are shown in table 1. Scenes in table 1 are arranged so that statistically significant differences between student groups and the criterion group can be examined for possible factors that underlie particular attitudes, e.g., whether group differences are due to exposure to organized environmental education programs, to socioeconomic or urban background, to residence exposure, or, perhaps, to age.

Attitudes toward scenes 1 through 9 (table 1) did not show statistically significant differences between any of the student groups and the criterion group. Most notably, these scenes describe nonwater natural landscape features and wildlife. The littered street scene also appears in this category. Environmental education programs that concentrate on these aspects of the environment may help to improve student understanding of the processes represented but would not substantially change their already desirable attitudes.

Students in the Low N.E.E. group held significantly different attitudes toward scenes 10 through 14 from those of the other groups (table 1). This difference may be accounted for by their lack of everyday exposure to the processes shown in these scenes. Although seashores and swamps are valuable elements of natural environments, urban students from lower socioeconomic groups are less likely to be exposed to them than suburban students from higher socioeconomic backgrounds. Except for the scene showing pine sawfly larvae, all scenes in this group involve water in some form. It would seem that for the most immediate benefit, an environmental education program directed toward inner city school children should be developed around water resource uses.

Regardless of socioeconomic background, students who were not exposed to the environmental education program held significantly higher attitudes about aspects of the environment shown in scenes 15 through 21 (table 1). Most of these scenes show man-altered environments or man-made inventions that may have adverse environmental effects. Here lies the most dramatic impact of an organized environmental education program—to clarify the role that man plays in influencing the operation of natural environmental systems.

Regardless of socioeconomic background, residence, or exposure to environmental education, all student groups held significantly different attitudes from those of the criterion group toward scenes 22 through 24 (table 1). The scenes that showed natural processes, fungi on a log and the skeleton of a deer, were given lower attitude ratings, and the scene of housing development was given a higher attitude rating by student groups than by the criterion group. Thus, study results suggest that natural environmental processes—recycling through the

**Table 1.—Average responses to slide scenes and statistical differences between groups**

| Slide scene             | Group mean attitude toward scene |           |             |            |
|-------------------------|----------------------------------|-----------|-------------|------------|
|                         | Criterion                        | High E.E. | High N.E.E. | Low N.E.E. |
| 1. Mountain lake        | 1.56                             | 1.65      | 1.63        | 1.74       |
| 2. High mountains       | 1.64                             | 1.59      | 1.55        | 1.91       |
| 3. Deer in field        | 1.67                             | 1.39      | 1.34        | 1.48       |
| 4. Farm country         | 1.72                             | 1.57      | 1.46        | 1.46       |
| 5. Desert               | 2.00                             | 2.33      | 2.25        | 2.57       |
| 6. Shed in woods        | 2.00                             | 1.80      | 2.12        | 2.38       |
| 7. Prairie dog          | 2.14                             | 1.69      | 1.65        | 2.21       |
| 8. Rattle snake         | 2.58                             | 3.02      | 3.00        | 3.10       |
| 9. Littered street      | 4.42                             | 4.50      | 4.59        | 4.21       |
| 10. Seashore            | 1.69                             | 2.09      | 1.89        | 2.51*      |
| 11. Swamp               | 2.47                             | 2.96      | 3.21        | 3.62*      |
| 12. Pine sawfly larvae  | 3.06                             | 3.37      | 3.77        | 4.15*      |
| 13. Sludge pit          | 4.14                             | 4.00      | 4.05        | 3.06*      |
| 14. Polluted stream     | 4.33                             | 4.06      | 3.70        | 3.52*      |
| 15. Subway station      | 3.33                             | 3.02      | 2.81*       | 2.54*      |
| 16. Downtown street     | 3.53                             | 2.96      | 2.73*       | 1.90*      |
| 17. Airport             | 3.56                             | 3.07      | 2.71*       | 2.30*      |
| 18. Jet airplane        | 3.64                             | 2.98      | 2.70*       | 2.05*      |
| 19. City buildings      | 3.89                             | 3.45      | 2.87*       | 2.41*      |
| 20. Old houses          | 4.09                             | 3.48      | 3.39*       | 3.25*      |
| 21. Air pollution       | 4.20                             | 3.79      | 3.41*       | 2.84*      |
| 22. Fungi on log        | 2.08                             | 2.72*     | 3.08*       | 3.65*      |
| 23. Skeleton of deer    | 2.78                             | 3.61*     | 3.76*       | 3.86*      |
| 24. Housing development | 3.64                             | 2.37*     | 2.11*       | 1.52*      |

\*Response difference statistically significant at the .05 level between criterion and student group using Sheffe's method.

life cycle—cannot easily be taught to elementary school children. Similarly, elementary school children have difficulty understanding the impact of man-made alterations on the functioning of natural ecosystems.

## RESULTS BY KIND OF SCENE

The 24 slides were classified as (1) natural environments, (2) wildlife, (3) natural processes, (4) man-altered environments, (5) pollution, and (6) modern inventions (table 2). The following differences in responses were found within these categories:

### Natural Environments

The natural environments category contained five scenes of natural areas with no evidence of man's influence (table 2). The Low N.E.E. group gave significantly more negative responses to the swamp and seashore slides than did the criterion group (table 1). It might be surmised that the children in this group, from urban families with limited income, had not had the opportunity to visit the seashore as frequently as the children from higher income families.

**Table 2.—Scenes classified according to environmental category depicted<sup>a</sup>**

| <i>Natural Environments</i> | <i>Modern Inventions</i>        |
|-----------------------------|---------------------------------|
| Mountain lake (1)           | Airport (17)                    |
| High mountains (2)          | Jet airplane (18)               |
| Desert (5)                  |                                 |
| Seashore (10)               | <i>Man-Altered Environments</i> |
| Swamp (11)                  | Farm country (4)                |
|                             | Shed in woods (6)               |
| <i>Wildlife</i>             | Subway station (15)             |
| Deer in field (3)           | Downtown street (16)            |
| Prairie dog (7)             | City buildings (19)             |
| Rattlesnake (8)             | Old houses (20)                 |
|                             | Housing development (24)        |
| <i>Natural Processes</i>    | <i>Pollution</i>                |
| Pine sawfly larvae (12)     | Littered street (9)             |
| Fungi on log (22)           | Sludge pit (13)                 |
| Skeleton of deer (23)       | Polluted stream (14)            |
|                             | Air pollution (21)              |

<sup>a</sup> Number in parenthesis refers to scene number in Table 1.

Therefore, they responded from a position of unfamiliarity, which, in this case, fostered a negative environmental attitude. Students in the High E.E. and High N.E.E. groups shared similar attitudes about these scenes. Thus, results indicate that environmental education

programs do not substantially influence already favorable student attitudes toward natural environments.

### Wildlife Scenes

The wildlife category contained three slide scenes (table 2). No statistically significant differences were found between any of the student groups and the criterion group. All student groups, regardless of their exposure to environmental education or socioeconomic background, rated wildlife scenes in the same way as the criterion group.

### Natural Processes

The three slides in the natural processes category were used to determine student attitudes toward the vital processes of returning nutrients to the soil through the natural life cycle (table 2). The Low N.E.E. group held significantly more negative attitudes toward all three of these scenes than the criterion group. Both the High E.E. and High N.E.E. groups held significantly more negative attitudes toward the fungi on log and skeleton of deer scenes (table 1). These results suggest that regardless of socioeconomic level or previous exposure to environmental education programs the attitudes of sixth-grade elementary school students toward natural processes that operate in environmental systems are relatively consistent.

### Modern Inventions

The modern inventions category contained two slides of airplanes (table 2). These scenes were included to ascertain students' attitudes toward modern inventions that account for a great deal of environmental damage. Both the High N.E.E. and Low N.E.E. held significantly more favorable attitudes toward these two scenes than the criterion group. Noise and air pollution caused by airplanes do not appear to be recognized by students who are not exposed to environmental education. These subjects were covered during the environmental education program of the High E.E. group. Their attitudes compared closely with those of the criterion group (table 1).

### Man-altered Environments

This category contained seven slides showing human alterations of the natural environment of various intensities (table 2). The scenes rang-

ed from very little alteration (shed in woods) to complete human domination of the environment (city buildings).

Except for sheds in woods and farm country, the High N.E.E. and Low N.E.E. groups held significantly more positive attitudes toward all scenes depicting man-altered environments than did the criterion group. The response of the High E.E. group was nearly identical to that of the criterion group on all scenes, except that they held a significantly more positive attitude toward the housing development scene (table 1). These results suggest that organized environmental education programs significantly alter students' attitudes toward the effect of mans' development activities on environmental systems.

The attitudes of all three of the student groups differed most from those of the criterion group on the scene depicting housing development. All student groups held significantly more positive attitudes than the criterion group did. The criterion group evidently saw much more in this scene than did the students. Regardless of exposure to organized environmental education programs, elementary school children appear to lack the sophistication of thought required to associate urban housing development with overpopulation and the quality of life.

### Pollution

Environmental pollution was shown in four slide scenes (table 2). The Low N.E.E. group held significantly higher attitudes toward three of the four scenes than did the criterion group. Both the High E.E. and High N.E.E. groups had attitudes like those of the criterion group (table 2). With the possible exception of the littered street, the scenes in the pollution category should have been equally familiar to all the subjects. These results suggest that attitude toward pollution is more a function of residence than of exposure to environmental education.

All test groups expressed their most negative attitude toward the littered street scene. The fact that all groups unanimously gave this scene the most negative response is perhaps testimony to the numerous and widely publicized anti-litter campaigns waged over recent years.

The results obtained in this category show a wide disparity in the subject's abilities to distinguish between a natural and polluted condi-

tion. The criterion group made a very obvious and emphatic distinction between a natural area with no evidence of environmental damage and an almost hopelessly polluted situation. The High E.E. group's reactions were quite obvious but not as emphatic. By comparison, the High N.E.E. group made little differentiation. The Low N.E.E. group actually held a more positive attitude toward the polluted stream than they did toward the swamp.

## CONCLUSIONS

The following conclusions appear to be appropriately drawn from results of this study:

- The slide evaluation technique is a workable method for measuring sixth-grade school children's environmental attitudes.
- The concepts on which the attitude-measuring method depends do not appear to be difficult for elementary school students to understand or accept.
- Children exposed to an organized environmental education program held attitudes about various environmental conditions significantly different from those of children who received little or no exposure to environmental education. Attitudes of children who were exposed to environmental education programs were more comparable to those of college-trained environmental specialists than to those of children who had received little exposure to environmental education.

- Neither socioeconomic background nor exposure to an environmental education program influenced already favorable student attitudes toward familiar nonwater elements of natural environments.
- Children from lower socioeconomic levels and with urban backgrounds would benefit most from environmental education programs oriented toward unfamiliar natural processes, particularly water-resource uses.
- Attitudes most easily transferred through elementary school environmental education programs are those that relate the role that man plays as a contributor to environmental problems.
- Attitudes most difficult to transfer through elementary school environmental education programs are those that concern natural ecological processes such as the life-death cycle of living organisms.

## LITERATURE CITED

- Caldwell, Lynton Keith.  
1970. **Environment: A challenge to modern society.** Natural History Press, Garden City, New York.
- Guenther, William C.  
1964. **Analysis of variance.** Prentice Hall, Englewood Cliffs, New Jersey.
- Osgood, Charles E., George J. Suci, Percy H. Tannenbaum.  
1957. **The measurement of meaning.** Univ. Illinois Press, Urbana.
- U.S. Bureau of the Census.  
1970. **Census of population and housing.** Final Report PHC(1)-209, Syracuse, New York, SMSA. Gov. Print. Off., Washington, D.C.

---

"In general, the qualitative studies find considerable positive influence for urban children in camp and outdoor education experiences. . . . The findings from quantitative studies provide a less optimistic perspective" -  
William R. Burch, Jr.

## Urban Children and Nature: A Summary of Research on Camping and Outdoor Education

by WILLIAM R. BURCH, Jr., *Associate Professor of Forestry and Sociology, School of Forestry and Environmental Studies, Yale University.*

---

*ABSTRACT:* This paper reports the preliminary findings of an extensive bibliographic search that identified studies on urban children in camp and outdoor education programs. These studies were systematically abstracted and classified qualitative or quantitative. Twenty-five percent of the abstracted studies were quantitative. The major findings, techniques of study, and policy suggestions of the studies are summarized. In general, the qualitative studies report considerable positive influence for urban children involved in camp and outdoor education experiences. The quantitative studies find only slight changes or changes for only a small proportion of the campers. The changes reported in the quantitative studies are often attributed to the break in routine or to the class backgrounds of the campers rather than to the camp experience. This paper suggests that more refined quantitative research and more modest qualitative research are needed.

---

CHILDREN, NATURE AND URBAN PLACES are topics rich in published studies. Perhaps such a richness reflects our overwhelming expectations for all three. Children represent a hope for an improved future. Nature has been the green innocence from which we have extracted our material riches and to which we return in search of our self-understanding (*Burch 1971*). Urban places are where most of us continue to live, in some mixture of pride and despair. Still, it remains an interesting question whether hope and innocence can cure our despair.

This paper will take no steps toward answering such large questions. Even when we take a very much narrower topic such as outdoor education and camp programs for urban children we find a wide divergence of approaches. There are those whose primary interest is in observing the regularities of behavior which occur in such settings. There are

those whose primary interest is in ensuring that urban children enjoy and appreciate their contact with nature. And finally there are those who think that urban life could be made more vital and humane if natural settings were part of all urban design.

In general, these three approaches tend to divide among professional specialties. Persons concerned with behavior tend to be academic researchers such as geographers, psychologists, sociologists, physiologists, and physical education specialists. Persons concerned with the child's enjoyment tend to be educators, camp managers, social workers, and so forth. Persons concerned with nature in the city tend to be architects, foresters, parks and recreation specialists, and so forth. Except for this symposium these three groups seldom meet together, seldom read one another's journals or other writings and seldom consider the existence of the other groups except to assign the

responsibility for solving "people" problems or "design" problems or "management" problems to one of the other groups. Our vision needs to be enlarged.

As a start, I offer the preliminary findings of an extensive bibliographic search which identified studies on urban children in camp and outdoor education programs. From this search my students and I identified over 200 items which could be called "studies" (articles with a reasonably systematic report of observed relationships). Reports and articles which were mostly polemical or basically operational (how to keep the plumbing working) were omitted. The others were systematically abstracted and classified by whether the reported observations were "qualitative" or "quantitative."

The following pages report some of our findings. I will first indicate something of the differences between the qualitative and quantitative studies. Then I will summarize the material that has been abstracted.<sup>1</sup>

## QUALITATIVE STUDIES

This term refers to a varied body of literature dealing with youth and the camping experience. Here we find discussions of how to design a camp or camp program, descriptions of the operation or history of a particular camp program, accounts or testimonials concerning the benefits of camp experience, and general philosophical discussions on the needs for and values of the camp experience. Many of the articles combined several of these approaches.

This type of literature most commonly appeared in journals such as the *American School Board Journal*, *The Child*, *Recreation*, *International Journal of Religious Education*, *Childhood Education* and so forth. Another common source is publications put out by the camps and camp organizations about themselves (e.g., L. B. Sharp, *Education and the Summer Camp* [Life Camps]; J. Lieberman, *Creative Camping* [Pioneer Youth Camps]).

An interesting side issue which emerged in our abstracting was the tendency for camp management to reflect goals and techniques similar to those found in industrial manage-

ment at the time. The early approach (up to the 1930s) in camp management stressed a finely structure program with motivation based on an elaborate and competitive reward system, and with the physical health and well-being of the camper as a primary concern. This management pattern resembles the "scientific management" (i.e., time and motion studies) approach to industrial management which was popular at that time. In the 1930s there was a shift in "progressive" camps to more concern with managing the campers' experiences. This is similar to its contemporary "human relations" approach in industrial management (e.g., Western Electric studies.) The more recent cooperative camps, in which the campers make decisions as a group, seem to echo a concern with decision-making processes similar to the recent "decision theory" (i.e., industrial democracy) approach in industrial management. We do not know whether these trends were "real" or simply an artifact of the kinds of studies we abstracted, yet such trends should intrigue camp and recreation professionals as well as academic researchers.

## QUANTITATIVE STUDIES

Quantitative studies focus on a specific research question or problem. These studies employ a definite research design which lends itself to replication, they attempt some form of objective measurement and use some form of statistical analysis. In the ideal case, the problem under consideration is related to some aspect of systematic theory. This is seldom the case; most researchers simply tackle a research question that interests them or their sponsors. There is also a small set of articles that discuss techniques of measurement and data collection.

Generally books and articles of the quantitative type appear in the standard professional journals (e.g., *Journal of Social Issues* or *Journal of Educational Psychology*) or in specialized professional journals such as those on health, physical education, and recreation (e.g., *Research Quarterly*, *Journal of Leisure Research*). Other common sources are theses and privately published (or mimeographed) research reports.

The importance of this type of literature for future research efforts is obvious. An examination of previous research indicates what has

---

<sup>1</sup>Those who wish a more detailed bibliography and a discussion of the technique followed in our abstracting process should contact the author.

already been done, what results were observed, what problems were encountered, and what solutions or future questions are suggested. However, such literature is only a small portion of the available literature on leisure. Of 197 books and articles selected from indexes and bibliographies on the basis of their titles which seemed related to children and camping, no more than 49 (25 percent) were quantitative.

## SUMMARY OF FINDINGS

### Selected Qualitative Studies of Camping and Outdoor Education for Children and Youth

The qualitative studies are not easily reduced to tables, standardized measures and reported tests of significance. These summaries illustrate the range of observation, insight, and generalization provided by such studies. They are divided by topic.

*Outdoor education.*—Dryden (1936) reports that camping serves a unique educational purpose by stimulating self-discovery and self-education. Grubb (1943) argues that camp and school life should be correlated and integrated because their aims and purposes are the same. Brimm (1959) suggests that schoolwork and school-sponsored camping education and experiences should complement each other. Johnson (1959) argues that a school divorced from nature gives us mere schooling. Nature can convert schooling to education.

*Day camping.*—Dryden (1938) demonstrates how day camping serves to introduce people from a crowded metropolitan area to recreation in the open countryside. Kidd (1942) reports that day camp provides citizenship education. Since all experiences are in the child's natural environment, day camp involves a minimum of business detail and can, therefore, readily retain leaders. The carryover effects of out-of-town camping are not known. Wilson (1959) argues that day camps should avoid "taking the city to the country." Mass campouts are to be avoided to keep the experience free of "city congestion" of all kinds.

*Juvenile delinquents.*—Persey (1941) reports that 75 percent of the boys (generally recent migrants to Los Angeles) do not appear again before the Los Angeles Juvenile Court after attending a Juvenile Forestry Camp. Solomon

(1948) notes that recreation cannot cure delinquency, but it can help. Recreation is a means of contacting potential delinquents, cultivating their confidence, and influencing their behavior and ideals. Thomas (1947) persuasively argues that, as an isolated experience, a summer camp would have little value in the rehabilitation of delinquent children. Its brevity and its lack of continuity with children's previous and subsequent experiences would militate against its effectiveness. It is valuable when it is part of a year-round program. Remedial camps require a smaller ratio of campers to counselors than conventional camps to be effective. Oyasoto (1953) illustrates that the benefits of camping for juvenile delinquents are: 1) experiences in group living; 2) participation in activities and having fun; 3) getting along with peers; 4) assumption of responsibilities.

*Disadvantaged youth.*—An interesting contrast is provided by statements from two different decades. Clift (1950) argues that Negroes' problems in recreation are not different basically from problems which confront other social and ethnic groups. Limited economic resources have implications for leisure patterns. Negro youth live and grow with a pattern of unrestrained and uninhibited recreational behavior that is not a constructive form of amusement; it does not tend to develop physical and mental competencies. Rivera (1966) illustrates some of the benefits of camping for disadvantaged Negro and Puerto Rican high school graduates: learning to enjoy vigorous outdoor work; learning to enjoy a library; developing "esprit;" working in new areas of learning (nature, ecology); learning new skills and crafts, receiving individual attention from the staff; learning discipline; developing pride in Black and Puerto Rican heritage.

*Lower economic background.*—Hanson and Gee (1968) suggest that youth from lower economic backgrounds may not participate in programmed activities because of: 1) expulsion from an activity for antisocial behavior, 2) discomfort in an overly restrictive atmosphere, 3) programs that are atypical of their experience and background, 4) indifference to schedules, 5) leadership turnover, 6) lack of transportation, funds, clothing, and 7) distrust towards middle-class altruism. *Inner-city children.*—Frank (1968) suggests that to facilitate communication, staff members should be of same race as children; the staff

should be briefed and be aware of inner-city conditions before campers arrive. Caulkins (1935) argues that free expression comes about because of a lack of regimented schedule.

*Race relations.*—Cooper (1945) seems convinced that an interracial youth camp program succeeds in overcoming racial prejudice, as is Duveneck (1955), who sees camp as a potential laboratory for the prevention of prejudice.

*Co-ed camping.*—Greene and Greene (1957) think that by having both men and women counselors, some of whom are themselves parents, it is possible to establish more normal adult-child relationships than are possible in other types of camps.

*Camp and child development.*—Mower (1934) notes that hobby time allows children to satisfy their craving for self-expression and provides the opportunity for recognition. Curtis (1938) makes the surprising suggestion that for social interaction, farm children need camp more than city children do. Seltzer (1938) argues that camp aids socialization of the camper through his meeting life situations with a group in a primitive environment. Instead of being warned "Don't" the child should be urged "Do!" And Nash (1950) is convinced that the school-community camp can and does offer opportunities to develop a social sense of belonging.

Mason (1930), on the other hand, finds both good and bad effects of camp. He reports on the bad effects of camp reported by campers—males: smoking and swearing; females: gossiping, swearing, cliques. Good effects—males: being a "good sport," obeying orders, obeying majority rule, self-control, regular hours, self-reliance; females: mixing well and making friends, good sportsmanship, consideration of others, good eating habits, independence. Social adjustment is the greatest contribution of camping.

Streckler (1944) feels that an analysis of case studies shows that campers' gains in personal stability in summer camp may be reversed in postcamp life by the very forces that fostered this instability in the first place (e.g., bad home life, etc.). Spencer (1934) also feels that harmonious camp life can become difficult with campers of widely varying backgrounds and abilities. Statten (1929) cautions that life in the woods is "unnatural" to a city boy. In examining behavior observation records, he found that the best results were invariably achieved with

younger boys. This supports evidence that the best time for establishing desirable social attitudes and habits is early childhood.

Sharp (1930) reports that camp tends to eliminate social and economic barriers because 1) social contacts are confined to the camp group, 2) social and economic positions held in organized society play a less important part in camp, 3) there is no need for spending money, and 4) the simplicity of camp costume gives matters of dress less social importance. And Haskell (1959) believes that nature study develops the ability to see. Chase (1968) notes that an advantage of camp is that the structure may be geared toward the individual more readily and effectively than the classroom situation which, of necessity, is structured for the majority.

Harms (1953) reports that a well-guided introduction to nature itself is the best possible start for a child's happy adjustment to the rest of the world. Knowledge of the world we (children) live in means a basic feeling of familiarity and security about our existence. This is true for every young child; he needs to feel secure.

Myering (1938) cautions that the camping program may be so highly organized that little opportunity is provided for individual remedial treatment, even though difficult problems of adjustment to the demands of the new environment are discovered. More problems were recorded early in the camp stay than later on, and more on Sundays than on weekdays. Zander (1938) reports that long-term campers (6 to 8 weeks) received more favorable appraisal for behavior than short-term campers (1 to 5 weeks). The shorter the stay, the more unfavorable comments were recorded by counselors.

*Attitude change.*—Knight (1953) seems to run counter to the rest of the field when he argues that while change is possible in the camping situation, it is not necessarily inherent in it. There is no reliable evidence that a summer, or a dozen summers, spent in camp will necessarily make any significant change in the individual.

*Conservation.*—Shomon (1964) reports that the fundamentals of conservation are learned best through personal experience in the outdoors. Citizens whose contact with the land has been severed cannot be expected to act intelligently on conservation matters.

*Camp as a society.*—Frey (1959) expresses a fairly common notion in the field that camp is a miniature society with roles, expectations, values, a structural hierarchy, and so forth. Donaldson and Donaldson (1955) qualify it to note that a camp is a children's community. Children have trouble identifying with a role of submission to the mandates of adult society. Mason (1930) prefers the higher abstractions that a camp is a society and is subject to the same social processes and is regulated by the same social controls as any other society.

*Benefits of camp.*—Julian Smith (1950) provides a useful summary of the social value of camping; it contributes to: 1) social living; 2) healthful living; 3) purposeful work experiences; 4) recreational living; and 5) outdoor educational activities.

### Quantitative Studies of Camping and Outdoor Education for Children and Youth

The studies are summarized in table 1. The information available on how these studies were done is often incomplete; some authors fail to

state their hypotheses explicitly, describe their data analysis, or describe their research design adequately. Studies that use published instruments (tests, scales, etc.) seldom provide information on validity and reliability.

As the reader will note from table 1, most of the research questions are of a practical rather than a theoretical nature and though the findings tend to support *a priori* hopes that the camp program has certain physical, mental, and social benefits, the actual statistical tests suggest very modest relationships. Questionnaires (21 studies) and systematic observation (10 studies) were far and away the most frequently used means of data collection. A wide range of scaling techniques were used to measure the influence of the camp experience. The findings suggest some reasonably consistent gains in social skills but few specific gains in nature appreciation or understanding. Finally, the reader should be aware that although these studies suggest that certain desired behavioral changes occur in natural settings, there is no comparative context or other means for determining whether the natural setting is the necessary condition for the observed change.

**Table 1.—Research techniques and findings of quantitative studies on urban children and camping experiences**

| Author      | Paraphrase of author's research questions  | Research design and methods  | Findings   | Instruments used                                     | Comments and author's suggestions for further research                                    |
|-------------|--|--|--|--|---|
| Barker 1969 | Does a session at camp improve a child's physical fitness?                             | Four tests - before and after 5 weeks at camp. Boys aged 10-13 N = 9.  | Gains on all 4 tests - only 1 was stat. sig. at .05.                         |  |   |
| YMCA n.d.   | Will a camp experience lead to greater achievement gains in school the following year? | Comparison of records of "culturally-deprived" inner-city children aged 10, 10 days at camp.                 | Not available at time of report.   |  |   |
| Barker 1958 | Will a camp experience produce an improvement in skills? (Not specified in abstract.)  | Interviews, questionnaires, rating scales on "underprivileged youth" aged 11, male, female.                  | Of all items tested, skills showed least improvement.                        |  | Greater followup and preparation for camping experience needed in interest of continuity. |
| Remer 1970  | Will a remedial reading program in a camp setting result in reading level gains?       | Tests administered before and after 4-1/2 weeks' camp. Boys and girls, grades 5-7. Also teachers' judgments. | 2/3 of the youngsters showed gains of from 1-5 years in reading grade level. | Gates Reading Tests, S.R.A. Reading Laboratory Test. |   |
| Barber 1958 | Will a camp experience produce an improvement in leadership?                           | See Barber above.  | Among those items tested, leadership showed least improvement.               |  |   |

CONTINUED

• 1.—continued

| Author   | Paraphrase of author's research questions   | Research design and methods  | Findings   | Instruments used   | Comments and author's suggestions for further research                     |
|----------|---|--|--|--|--|
| Anderson | Will secondary campers develop leadership skills?   | Ratings by counselors. Inner-city secondary school students.   | Counselors rated them as doing a good job.   |  | Leadership training is valuable.   |
| Thomas   | Is there a greater increase in interest in school after a camp experience?                                      | Case studies, sociograms, tests, questionnaires. Grade 6 pupils, 5 days at camp.   | School camping increases interest in schoolwork.   | California Test of Personality (Elementary)  | Author suggests use of control group rather than repeated measures.        |
| Beck     | Will a camp experience produce an increased interest in science subjects?                                       | Questionnaires, tests, evaluation of work, opinion survey. 5-6th-grade graders. N = 22.  | Noticeable increase in science interests by 5th-graders.   | Science-interest section of "What I Like To Do," (Chicago).  |  |
| Anderson | Is it possible to develop an instrument capable of measuring the change in camper attitudes towards a specific? | Attitude inventory at camps of varying lengths. Exp. and control. Girls, 9-15 years. 2 groups.   | Test proved to be more reliable than valid.  |  |  |
| Anderson | Will a camping experience provide a more favorable attitude toward teachers?                                    | Ten days at camp for "culturally deprived" inner-city children. Questionnaire, "My Teacher," given once. Age 10.   | Not available at time of report. A preliminary test indicates that 1/3 of the children view their teachers unfavorably.  |  |  |
| Remer    | See Remer above.  | Participants: 5-7th-grade boys and girls.<br><br>44 boys, 44 girls, 5-6th grade, lower middle socioeconomic class.   | Children's Aid Society workers report improved attitudes toward school and teachers.<br><br>Girls regard school more positively than boys, who changed positively a small degree after camp. |  |  |
| Wetzel   | How is culturally appropriate behavior learned?   | Comparison of behavior in segregated and integrated camps. All children of same social class. Instruments, interaction records, observations, assessments. | Children after integrated camp experience viewed members of the other race as individuals rather than stereotypes or racial objects.   |  | 2 weeks is not sufficient to produce a change of attitude.                 |
| Wetzel   | Do school campers experience greater social-emotional growth than non-campers?                                  | Camp group and control group. Grade 6.   | Campers showed gains in self-concept.  | Instruments included an unpublished self-concept checklist.  |  |
| Anderson | Will an outdoor education program favorably affect a camper's self concept?                                     | Test administered at beginning and end of camp. "Culturally deprived" children aged 10. Also given to secondary pupils.                                    | Gains in self-concept were significant at .05 level of confidence was found for secondary pupil campers. No appreciable change for the elementary pupil campers.                             | 2 unpublished scales, Sears Self-Concept Scale, and Waetzen-Liddle Self-Concept as Learners scale. | No change in secondary campers - may be due to an unanticipated influence. |
| Wetzel   | Will the self-concept of emotionally disturbed children be affected by a school-camp experience?                | Behavior analysis, teachers' postcamp evaluation. Age, sex, not given. N = 22.   | 6 of 22, self-concept up. 1 of 22, self-concept down.  |  |  |

CONTINUED

**Table 1.—continued**

| Author                          | Paraphrase of author's research questions  | Research design and methods  | Findings   | Instruments used  | Comments and author's suggestion further research |
|---------------------------------|--|--|--|---|---|
| Stack 1960                      |  | See Stack above.   | Failed to show a gain toward ego concept. 6th-grade students placed more value on associates than on selves.   |   |   |
| Yarrow et al. 1958              | See Yarrow above.  | See Yarrow above.  | Negro children's self-esteem increased during camp   |   |   |
| McCreary-Juhasz and Jensen 1968 | See above.   | See above.   | 8 of 22 set "more realistic" levels of aspiration.   |   |   |
| Goodman 1952                    |  | Analysis of case records, interviews, observations. Most children came from families with emotional tensions. Ages 7-15, male and female. N = 23 | 1/3 of campers made poor adjustment. Length of stay is important factor (poorly supported). Family background is not a predictor of adjustment.  |   |   |
| Janus 1967                      | Is there a relationship between personality and camp adjustment?                     | Precamp personality tests, postcamp adjustment scales developed for the study. Female college sophomores, 1 week stay.                           | Although separate personality characteristics may be significant, camp adjustment seems to be facilitated by generalized ego strength, flexibility and openness to new experiences.  | Barron's Ego Strength Scale (unpub.), Budner Tolerance-Intolerance of Ambiguity Scale (unpub.), Elias Family Opinion Survey, Edwards Pers. Reference Scale. |   |
| Putter 1963                     | What factors have a significant effect on children's adaptation to a resident camp?  | Test, sociometric tests, and counselor's ratings. 3-week encampment for 7-15-year-olds.  | No stat. sig. difference between adjustment of 1st and 2nd time campers. Income level of camper's family correlated negatively with adjustment for 1st- and 2nd- timers.   | Haggerty-Olsen Behavior Rating Scale.   |   |
| Bray 1945                       | What changes in selected social traits were exhibited by children in camp?           | Comparison between first and last week in camp. Boys and girls, 6-13 years, N = 41.  | All social traits had a higher mean in the second observation. "Important gains" in "cheerfulness," "companionableness," calmness, courage and consideration (stat. sig.).   |   |   |
| Dimock and Hendry 1929          | How to measure development of desirable social attitudes and behavior and character. | 6 age groups of boys, counselors' ratings, pencil and paper tests, questionnaires.   | Most useful methods for measuring results were the descriptive records of the boys' behavior and the behavior rating scales. Desirable changes in behavior are not an inevitable outcome. Amount of favorable change seems to decrease with increasing age. Character changes depend upon many factors: type of program, group pressures and opinion, kind of guidance. 1 or 2 months stay does not yield significant differences. |   | Authors would more objective                      |

CONT

**Table 1.—continued**

| Author                | Paraphrase of author's research questions  | Research design and methods  | Findings  | Instruments used   | Comments and author's suggestions for further research   |
|-----------------------|--|--|---|--|--|
| Henke and Kuhlen 1943 | Is children's social adjustment better at end of YMCA summer camp?   | Boys in 3 age groups; 8-18 yrs.; different socioeconomic classes; standardized tests at beginning and end.                                       | Stat. reliable diff. in <i>happiness</i> and <i>impulse judgment</i> scores; not on <i>sympathy</i> , <i>truthfulness</i> , <i>control</i> , <i>purpose</i> and <i>alienation</i> . "Underprivileged" boys may have been harmed by feelings of "inferiority." | Washburne Soc. Adj. Inventory; Rogers Test of Pers. Adj.; Sim's Scale of Socioeconomic Status (no information available); "Otis Intell. Test (A)"; Moreno's Sociometric Technique (no information available) | Greater variety of measurement and testing techniques. Socioeconomic class should be a constant.   |
| Knight 1955           | Are socially desirable traits reinforced by a camp experience?   | Experienced (campers) and control group (noncampers), 124 5th-grade pupils from 2 different schools; observations of behavior in test situation. | No difference in % of volunteers for extracurricular task. Campers were more reliable-worked longer and harder at the volunteer task.   |  | Can a brief stay produce a significant change in persons? Can difference in behavior be attributed to factors other than the camp program? |
| Kranzer 1958          | What are the objectively measured social, emotional, intellectual, physical, and democratic living effects of a 5-day school camping experience for 6th-graders? | Tests and sociograms, teacher's logs and counselor's narrative evaluations, questionnaire (presumably control and experience groups).            | Faster changes in social and democratic behavior in camp than might occur in classroom; teacher's opinion. Camping improves classroom behavior. No measurable effects related to sex or I.Q.  | Woods Behavior Pref. Record; Haggerty-Olsen-Wickman Behavior Rating Schedules; Baxter's Rating Scale of Teachers; Personal Effectiveness (unpub.)  |  |
| Stout 1939            | Does camp experience have an educational value (by which he seems to mean "improved behavior")?  | Gathered opinions, sent questionnaires to parents whose children had been to camp (boys and girls).  | Areas of perceived improvement: reliability (least), social relationships (greatest); emotional stability was also heavily checked.   |  |  |
| Baker 1966            | Measure of social relationship by concept of "social distance".  | 6th-graders, subjects and controls; tests given before and after camp and 3 months later   | Camping has a positive influence on a camper's social distance although difference between Ss and control seems too tenuous for anything more than conclusions  | Classroom social Distance Scale (Dunningham) (no information available).   | Future studies should focus on program content to identify determinants of change.   |
| Bozarth 1953          |  | 59 6th-graders at school-camp (5 days), case studies, questionnaires, tests, sociograms  | Increase of acceptance among children with a fading out of both "stars" and "isolates;" increase of mutual friendship.  |  | Author suggests use of control group rather than repeated measures.  |
| Davis 1960            | After a camping experience will children be chosen as friends more often?  | 32 8th-grade students, boys and girls, "home-made friendship test," before and after.  | Both boys and girls received significant (.05) more choices after camp than before.   |  |  |
| Hollenbeck 1963       |  | 225 6th-graders, 1 week camp, 3-question sociometric questionnaire.  | More willingness to work with members of the opposite sex after camp; clique merged with the group somewhat; isolates more integrated into the group.   |  |  |
| Stack 1969            |  | 5 6th-graders, lower-middle socioeconomic background 14 boys, 14 girls.  | 90% made new sociometric choices (mean 1.61) Boys formed more than girls; 6th-graders more than 5th.  |  |  |

Table 1.—continued

| Author                          | Paraphrase of author's research questions  | Research design and methods   | Findings   | Instruments used  | Comments and author's suggestions for further research  |
|---------------------------------|--|---|--|---|---|
| Baer                            | What differences in behavior in camp might be predictive of recidivism?                          | Forestry camp, 20 boys (recidivists) each in subject and control groups. Data collected from files and camp records. No stat. analysis.                             | No significant difference in backgrounds, except study group had more previous arrests than controls. Controls were higher on weekly merit list. Study group had more behavior problems. |   | Small number of cases; reliability of records questionable.   |
| McCreary-Juhasz and Jensen 1968 | What is the value of summer camp for emotionally disturbed children?                             | 22 children, 2 weeks in school camp. Teacher's evaluations and behavior analyses.   | Improved behavior noted in all cases but 1 (parents' responses): more realistic aspiration levels, greater self-confidence, better academic achievement.                                 |   |   |
| Cole 1957                       | Does a work camp for potential dropouts have more holding power than the regular school program? | Initial tests, follow-up interviews with questionnaires. 2 groups of potential dropouts, one of which attended camp, and a control group of well-adjusted students. | Camp experience Ss became more "friendly and cooperative," improved attitudes toward school; improved vocational and personal skills; better health and eating habits.                   | Calif. Mental Maturity Test, Stanford Read. Test, Wide-Range Ach. Test, Mooney Problem Checklist, Rotter Inc. Sentence Test, Calif. Interest Inventory. |   |
| Hollenbeck 1963                 | See above.   |   | Outdoor scenic experiences aroused new interests in many of the children. Science concepts were enriched by the camping experience.  |   |   |
| Kranzer 1956                    | See above.   | Questionnaires and evaluation forms.  | School camping stimulates classroom activities, aids good instruction.   |   |   |
| Sharp 1948                      | Does school camping experience affect learning about specific subjects?                          | Experience and control groups. Pencil and paper tests in arithmetic, science, health vocabulary, nature and opinion surveys.  | Significant difference (.05) in favor of experimental (campers) group.   |   | Results may have been affected by camping-oriented curriculum for experimental group prior to camp. |

## CONCLUSION

In general the qualitative studies find considerable positive influence for urban children in camp and outdoor education experiences. These studies emphasize the need to have camp and school life integrated. The authors believe that children and youths involved in camp and outdoor education programs gain in self-esteem, in attitudes toward school, in ability to interact with others, and in tolerance for other races and ethnic groups. These studies regularly report that the shift from urban to natural settings has a positive benefit for a child's awareness and attitude. However, some of these studies caution that a simple "one-shot" program, or simply

returning youths and children to "poor" environments, will not gain the desired social improvements.

The findings from the quantitative studies provide a less optimistic perspective. Though changes are reported, often they are not statistically significant or the change is slight and then only for a select few of the campers. Many of the quantitative studies seem to imply that change in behavior can as likely be attributed to a general alteration in the child's routine as to the natural setting of the camp. Other studies imply that the social class or social status of a child's family has a more crucial influence upon "benefit" from the program than does the specific camp experience.

Children from higher social classes and status groups seem "set" to benefit from the camp program, while others are less likely to benefit. Still most of these studies do indicate that for some persons there are some gains or benefits on certain measured dimensions.

It would seem that the quantitative studies are not finely enough tuned to identify the factors that permit these individual gains. On the other hand the qualitative studies may be overly hasty in extracting a general principle from too few cases. The question is not which set of studies is most correct; rather the need is for a shared humility regarding our very limited understanding. The nearly 50 years of studies summarized here represent a significant empirical and humane base of information. Our task is to use that base to explore more systematically the role that nature, camping, and outdoor education can play in the lives of urban children. And in that exploration there will be little time for managers or designers or scholars to pretend that theirs is the only correct path to understanding.

## LITERATURE CITED

- Baer, Benjamin Franklin.  
1947. **Forestry camp adjustment of juvenile recidivists.** Masters Thesis (Social Work), Univ. South. Calif.
- Barber, William R.  
1958. **A youth campership program.** Masters Thesis (Social Work), Univ. Denver.
- Barker, Jerry W.  
1969. **Summer camp experience improves fitness.** *J. Phys. Educ.* 67: 55-56.
- Beker, Jerome.  
1960. **The influence of school camping on the self-concepts and social relationships of sixth-grade school children.** *J. Educ. Psychol.* 51 (6): 352-356.
- Bozarth, Evelyn Schaner.  
1953. **A study of effects of public school camping upon sixth-grade children at Brentwood School and of the reaction of their parents.** Masters Thesis (Educ.), Univ. Tex.
- Bray, Margaret.  
1945. **Study of the changes in selected social traits exhibited by the campers in Sunshine Camp of Austin, Texas, in the summer of 1944.** Masters Thesis, North Tex. State Teach. Coll.
- Brimm, R. P.  
1959. **What are the issues in camping and outdoor education.** *Camping* 31:14-15.
- Burch, William R., Jr.  
1971. **Daydreams and nightmares: A sociological essay on the American environment.** Harper & Row, New York.
- Caulkins, E. Dana.  
1935. **Recreation camps for urban children.** *Child Study* 12 (April): 201-202.
- Chase, M. F.  
1968. **Values of camps controlled setting.** *Camping* 40:21.
- Cliff, Virgil A.  
1950. **Recreation and leisure time—problems and needs of negro children and youth.** *J. Negro Educ.* 19:333-340.
- Cole, Roy.  
1957. **An evaluative study of an extramural camping program for adolescent boys.** Doctoral Thesis, Wayne State Univ.
- Cooper, E. B.  
1945. **Interracial youth camp program.** *Calif. J. Secondary Educ.* 20:464-466.
- Curtis, Henry S.  
1938. **Children's camps of the Detroit area.** *Phi Delta Kappan* 21: (Dec.):128-130.
- Davis, O. L., Jr.  
1960. **The effect of a school camp experience on friendship choices.** *J. Educ. Sociol.* 33(7):305-313.
- Dimock, Hedley S., and Charles E. Hendry.  
1929. **Camping and character—a camp experiment in character education.** Association Press, New York.
- Donaldson, Lou, and George Donaldson.  
1955. **A camp is a children's community.** *Camping* 27: 13-14.
- Dryden, Maude L.  
1936. **New York tries out new methods of education.** *Recreation* 30 (May): 58-61, 89-91.
- Dryden, Maude L.  
1938. **Neighborhood day camping in New York City.** *Recreation* 32 (May):79-82, 112.
- Duveneck, F.  
1955. **How camp can help reduce racial tensions.** *Camping* 27:40-42.
- Frank, R. D.  
1968. **When inner-city children come to camp.** *Camping* 40:11-12.
- Frey, Louise A.  
1959. **Think of your camp as a small society.** *Camping* 31:14-15.
- Goodman, Harvey C.  
1952. **Some of the values in camp experiences for children as seen in a family agency.** Masters Thesis, N. Y. Sch. Soc. Work, Columbia Univ.
- Greene, C. Owen, and Catherine G. Greene.  
1957. **The value of co-ed camping.** *Camping* 29:24-25.
- Grubb, Gena.  
1943. **Camping is education.** *J. Health Phys. Educ.* 14 (May): 266-267, 288-90.
- Hanson, Robert F. and Samuel Gee.  
1968. **Project contact - a summer program for hard-to-reach youth in San Diego.** *Parks and Recreation* 3:43, 63.
- Harms, Ernest.  
1953. **Nature study - aid to mental health.** *Nature* 46 (March):201-4.
- Haskell, Helen.  
1959. **Nature study develops the ability to see.** *Camping* 31: 25-26.
- Henke, Milo W., and Raymond G. Kuhlén.  
1943. **Changes in social adjustment in a summer camp.** *J. Psychol.* 15:223-231.
- Hollenbeck, Irene.  
1963. **Outdoor education in Oregon.** *Sci. Educ.* 47:113-121.
- Janus, Samuel.  
1967. **Personality factors and their relationship to adjustment in a camping situation.** Doctoral Thesis, N. Y. Univ.
- Jensen, Barbara Ellen.  
1965. **Development of a camper attitude scale to evaluate attitudinal change toward a specific.** Doctoral Thesis, Univ. Iowa.
- Johnson, C. W.  
1959. **Learn truth from nature.** *Camping* 31:50.
- Kidd, J. R.  
1942. **The day camp and the young citizen.** *Recreation.* 36: 287-288.
- Knight, Norton B.  
1955. **The effect of camping experiences upon the social behavior of fifth-grade pupils—a critique of theoretical factors in the camp situation.** Mimeo. Pap. East. Mich. Univ.
- Knight, Stanford S.  
1953. **How camping can change social attitudes.** *Camping* 25: 11-12.

- Kranzer, Herman C.  
1958. **Effects of school camping on selected aspects of pupil behavior—an experimental study.** Doctoral Thesis, U.C.L.A.
- McCreary-Juhasz, Anne, and S. E. Jensen.  
1968. **Benefits of a school camp experience to emotionally disturbed children in regular classrooms.** *Excep. Child.* 34: 353-354.
- Mason, Bernard S.  
1930. **Camping and education.** McCall Co., New York.
- Myering, Harry R.  
1938. **Recording and analyzing problems of camp behavior.** *Phi Delta Kappan* 21 (Dec.): 122-124.
- Mower, Delite M.  
1934. **Camping as a factor in the child's development.** *Recreation* 28 (April): 31-34.
- Nash, Jay B.  
1950. **Why a school camping program.** *J. Educ. Sociol.* 23 (May): 500-507.
- Oyasoto, Thomas T.  
1953. **The value of camp experience to campers referred from the juvenile court to Camp Palama-by-the-Sea and Camp Erdman.** Masters Thesis, Univ. Hawaii.
- Persey, Leslie S.  
1941. **Do juvenile forestry camps pay?** *Am. For.* 47: 524-526.
- Putter, Harmon.  
1963. **A comparative study of first-time and experienced campers in relation to selected characteristics and experiences.** Doctoral Thesis, N. Y. Univ.
- Remer, Victor.  
1970. **Take a giant step—a remedial reading program in a camp setting.** *Child Welfare* 49:270-274.
- Rivera, Emilio.  
1966. **The disadvantaged and the university camp.** *Teach. Coll. Rec.* 67: 553-63.
- Seltzer, Robert D.  
1938. **Camping for the campers.** *Phi Delta Kappan* 21 (Dec.): 135-6.
- Sharp, Lloyd B.  
1930. **Education and the summer camp—an experiment.** *Teach. Coll. Columbia Univ. Contrib. Educ.* 390.
- Sharp, L. B.  
1948. **Extending education through camping.** *Life Camps*, New York.
- Shomon, Joseph J.  
1964. **Manual of outdoor conservation education.** *Educ. Bull.* 3, Nat. Cent. Div. Nat. Audubon Soc., New York.
- Smith, Julian W.  
1950. **The Michigan story of camping and outdoor education.** *J. Educ. Sociol.* 23: 508-15.
- Solomon, Ben.  
1948. **Recreation and delinquency.** *J. Educ. Sociol.* 21: 284-290.
- Spencer, Sue.  
1931. **Camp environment and experiences as used in treatment of teenage girls.** Masters Thesis, N. Y. Sch. Soc. Work, Columbia Univ.
- Statten, Taylor.  
1929. **Appraising the results of a summer camp.** *Relig. Educ.* 24: 565-571.
- Stack, Genevieve Carter.  
1960. **An evaluation of attitudinal outcomes of fifth- and sixth-grade students following a period of school camping.** Doctoral Thesis, Univ. Okla.
- Stout, Ralph A.  
1939. **The educational effect of camp experience.** Masters Thesis, Mass. State Coll., Amherst.
- Streckler, Irene.  
1944. **Camp used as an integral part of a family agency's services.** Masters Thesis, N. Y. Sch. Soc. Work, Columbia Univ.
- Thomas, J. W.  
1947. **Experimental use of summer camp as part of a remedial program for juvenile delinquents.** *Relig. Educ.* 32: 211-216.
- Wilson, G. T.  
1939. **Day camps—city streets to woodland trails.** *Camping* 40: (May) 11-12.
- Yarrow, Marian Radke, Leon J. Yarrow, and John D. Campbell.  
1958. **Interpersonal dynamics in a desegregation process.** *J. Soc. Issues* 14 (1): 3-62.
- YMCA of Metropolitan Washington, D.C.  
(No date.) **Project Lichtman Phase II.** YMCA, Washington, D.C.
- Zander, Alvin.  
1938. **Study of behavior of boy campers.** *Res. Q.* 9: 128-135.

#### Acknowledgments

This paper was prepared with the assistance of Merlin Shelstad and Elizabeth Wallace. In addition to ourselves, there were numerous abstractors: Frank Ziegenfus and Bart Young made especially heroic contributions. Partial support for this work was provided by a grant from the U.S. Forest Service. However, the opinions are solely those of the author.

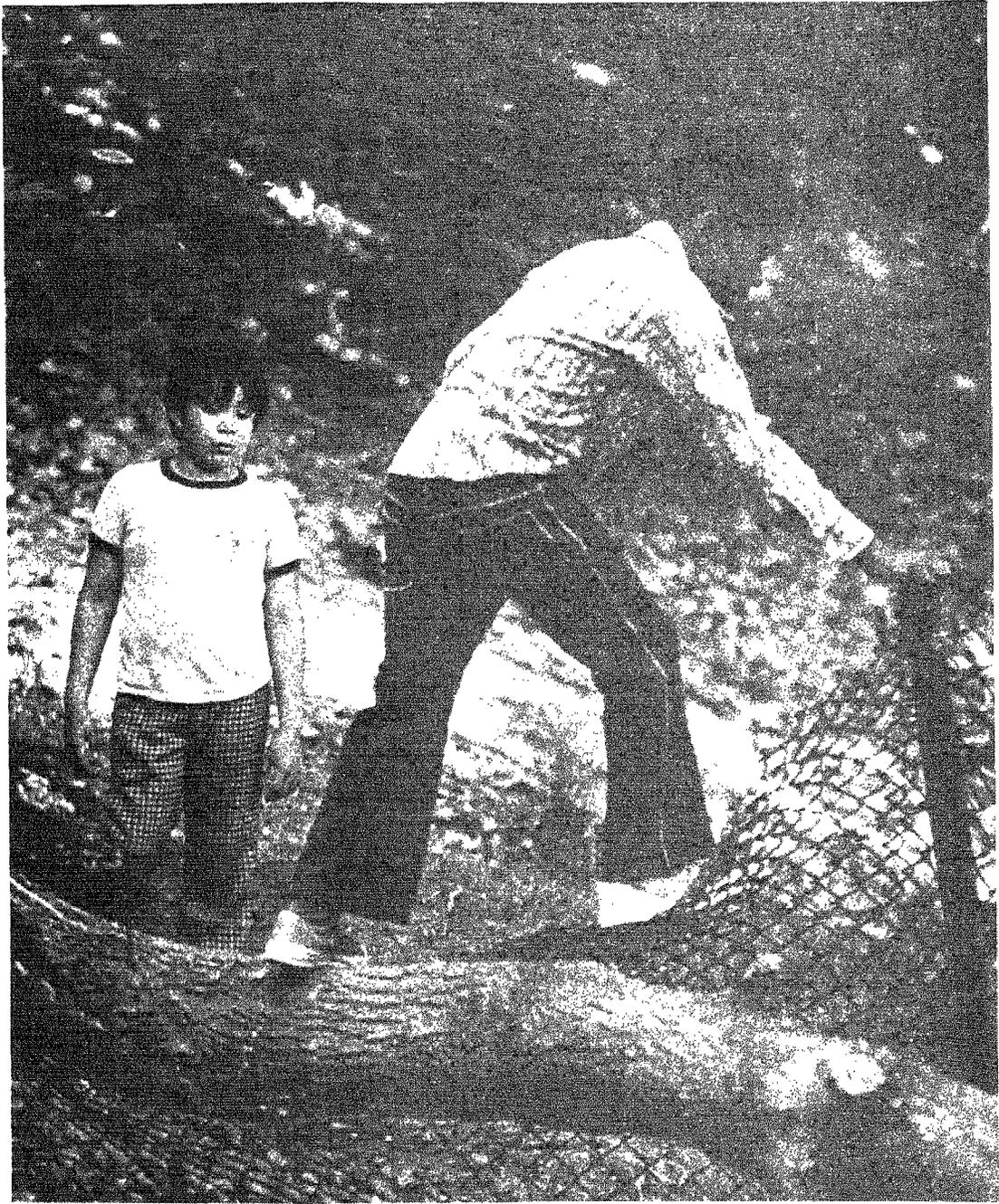


PHOTO BY WALT BLAIR

“If these findings are correct, they suggest that it is the white students who are “deprived”, because their preferences are less compatible with the urban environment in which they live” - George L. Peterson

# Recreational Preferences of Urban Teenagers: The Influence of Cultural and Environmental Attributes

by GEORGE L. PETERSON, *Professor of Civil Engineering,  
Technological Institute, Northwestern University, Evanston, Ill.*

---

**ABSTRACT.** The study tests the hypothesis that the recreational preferences of urban teenagers differ with age, sex, ethnicity, and measurable attributes of activity and environment. Photos of activities are used to measure preferences, and the photos are scaled for content by a detailed appraisal. The results show that sex and ethnicity modify the preference process, and that choices are sensitive to attributes of the activity and of the environment in which the activity takes place. Several additional propositions are suggested by the data.

---

## THE PROBLEM

**T**HE RESEARCH reported here is an attempt to expose cultural differences in recreation preference and perception among urban teenagers. The specific questions addressed are the following:

1. What are the outdoor recreation preferences and perceptions of various types of urban teenagers?
2. What activity and environmental attributes explain those preferences?
3. What interacting personal characteristics explain interpersonal variation?

Unfortunately, the page limit imposed by the editors does not allow full development of the conceptual framework of which this study is a part. Taken thus out of context, the results are in danger of appearing to be disjointed answers in search of meaningful questions, as is the case with much of the outdoor recreation research to date. Something more has to be said.

Briefly, traditional recreation planning views demand in terms of descriptive measures such as user-days of participation in various kinds of standard activities, perhaps at specific sites. The traditional approach to the supply problem is to attempt, within budget constraints, to accommodate the demand thus described. The

dangers and deficiencies of these approaches are many and serious, but we do not have room to expose them here.

Some of us have warned for a long time that wise recreation planning cannot occur without a functional understanding of why people make the choices they do, as well as of the consequences of participation, including personal and societal costs and benefits. To explain why people do what they do is not the same thing as to measure participation in user-days, nor is it the same thing as finding out what fraction of the population is attracted to fishing, what portion is attracted to skiing, etc. Much more is required, and it is the purpose of this paper to present a small part of the overall problem, a part concerned with explanation of preference in terms of 1) attributes of activity and environment, and 2) cultural differences among individuals.

## THE HYPOTHESIS

The empirical study is based on the hypothesis that attraction to outdoor recreation activities is a function of measurable attributes of the activity and of the environment in which the activity takes place. It is also based on the hypothesis that personal characteristics such as

sex, ethnicity, and age interact to affect the way attraction responds to activity and environmental attributes. The study is designed to test these hypotheses for urban teenagers and to describe some of the variables and relationships.

## STUDY DESIGN AND METHOD

Several thousand color photographs (transparencies) of outdoor recreation activities

were collected. A subset of 200 pictures was selected to represent as much diversity as possible with reasonable photographic quality. These 200 photographs were described quantitatively in terms of 78 activity descriptors and 33 environmental variables. The attributes used are listed in Table 1. The descriptions were done judgmentally on semantically described rating scales by a paid panel of 10 highly experienced recreationists. Reliability and internal validity

**Table 1.—Attributes used to describe the photos**

|  |  |
|--|--|
| <i>A. Activity descriptors</i>             |  |
| 1. Danger                                  | 57. Edible acquisition                 |
| 2. Skill of participants                   | 58. Material acquisition               |
| 3. Amount of training required             | 59. Invasion or conquest               |
| 4. Active (vs. passive)                    | 60. Formal defense                     |
| 5. Degree of social interaction            | 61. Informal defense                   |
| 6. Educational                             | 62. Usually performed alone            |
| 7. Amount of discomfort                    | 63. Professional help required         |
| 8. Social acceptability                    | 64. Professional help being used       |
| 9. Noisiness                               | 65. Performance                        |
| 10. Physical exertion required             | 66. Observance of performance          |
| 11. Advance planning required              | 67. Exploration and discovery          |
| 12. Dirtiness (vs. cleanness)              | 68. Special knowledge necessary        |
| 13. Originality                            | 69. Special knowledge helpful          |
| 14. "Naughtiness" (vs. niceness)           | 70. Specific environment               |
| 15. Constructiveness (vs. destructiveness) | 71. Fee required                       |
| 16. Degree unregulated (vs. regulated)     | 72. Manmade facilities                 |
| 17. Time required to get there             | 73. Sightseeing                        |
| 18. Time required to do it                 | 74. Solitude                           |
| 19. Opportunity for girl watching          | 75. Professional                       |
| 20. Opportunity for boy watching           | 76. Cross-country travel               |
| 21. Sexual interaction                     | 77. Meet new people                    |
| 22. Invasion or conquest                   | 78. Speed or sensation of it           |
| 23. Importance of teamwork                 |  |
| 24. Cost of equipment                      | <i>B. Environmental descriptors</i>    |
| 25. Degree of sensory stimulation          | 1. Manmade (vs. natural)               |
| 26. Performance for spectators             | 2. Crowded (vs. secluded)              |
| 27. Kind of travel involved                | 3. Enclosed (vs. spacious)             |
| 28. Social interaction                     | 4. Littered or polluted (vs. clean)    |
| 29. Opportunity to know people             | 5. Uniformity (vs. variety)            |
| 30. Rate of energy expenditure             | 6. Accessible (vs. remote)             |
| 31. Amount of work                         | 7. Developed (vs. undeveloped)         |
| 32. Age specific?                          | 8. Flat (vs. mountainous)              |
| 33. Degree of involvement                  | 9. Unregulated (vs. regulated)         |
| 34. Use of extensions                      | 10. Barren (vs. foliated)              |
| 35. Photographic composition               | 11. Planned                            |
| 36. " exposure                             | 12. Colorless                          |
| 37. " focus                                | 13. Visual complexity                  |
| 38. " color quality                        | 14. Chaotic (vs. ordered)              |
| 39. " lighting                             | 15. Unique (vs. common)                |
| 40. Overall photo quality                  | 16. Dangerous                          |
| 41. Center of attention                    | 17. Cold                               |
| 42. Control                                | 18. Dark                               |
| 43. Objective achievement                  | 19. Desecrated (vs. conserved)         |
| 44. Success experience                     | 20. Noisy                              |
| 45. Compete against nature                 | 21. Hard                               |
| 46. Competition                            | 22. Smooth (vs. rough)                 |
| 47. Construction and improvement           | 23. Arid (vs. humid)                   |
| 48. Destruction or injury                  | 24. Contrast                           |
| 49. Physical self-improvement              | 25. Urbanized (vs. wilderness)         |
| 50. Family association                     | 26. Altered by man (vs. original)      |
| 51. Possible to do alone                   | 27. Buildings                          |
| 52. Male sexual exhibition                 | 28. Run-down (vs. well-kept)           |
| 53. Female sexual exhibition               | 29. Vistas of far places               |
| 54. Girl watching                          | 30. Closed view (vs. open view)        |
| 55. Boy watching                           | 31. Old (vs. modern)                   |
| 56. Predatory                              | 32. Amount of capital investment       |
|  | 33. Reachable by public transportation |

were confirmed by analysis of correlations among conceptually related items. Reliabilities were high. For example, the reliability for a set of five environmental attributes describing the extent to which the environment has been altered by man was calculated to be 96 percent. The reliability estimated from a set of four attributes measuring the amount of skill or training needed by the participants in an activity was 94 percent. These were estimated by domain sampling. Numerous parallel-test reliabilities for other attributes ranged from 90 percent to 98 percent.

Using the 200 photographs as observations for each of the 78 activity descriptors and 33 environmental attributes, orthogonal factor analysis was applied to simplify the lists. Two activity models and one environmental model were derived. Space does not permit describing them here. Interested readers are referred to Hanssen (1971).

After quantitative content analysis, the set of photographs was reduced from 200 to 100 to eliminate redundancy and to make the subsequent work more manageable. Table 2 lists the photos.

A sample of 400 high-school students was drawn randomly from the rolls of the Evanston Township High School, with equal numbers for each sex, age (sophomore and junior), and ethnic group (black and white). The students chosen were invited to participate in the study. Participation was voluntary. Table 3 gives the sample sizes and response rates.

The participating students were shown large illuminated projections of the color slides, and asked to rate on numerical rating scales their answers to two questions:

1. How desirable do you personally find the idea of participation in the activity shown?

2. How much experience have you had participating in the activity shown?

The students were also asked to complete an early version of McKechnie's Environmental Response Inventory (McKechnie 1970). The purpose of this was to assess environmental aspects of personality.

Examination of the correlations among the response to the 100 photographs by the 200 subjects indicates that 1) the individual preference ratings contain information, and 2) an upper limit for reliability of the individual ratings is approximately 65 percent. Thus, a model that

attempts to explain the photo preference rating could not be expected to explain more than 6 percent of the total variance.

## SUMMARY OF RESULTS

Analysis of variance of the individual preference ratings reveals the following:

1. Blacks and whites differ significantly the process by which their preferences are generated.

2. Males and females differ significantly the process by which their preferences are generated.

3. Sophomores and juniors respond to the photos in similar ways. However, this should not be construed to mean that a wider age difference would not reveal differences.

Thus the preferences of blacks, whites, male and females for outdoor recreation activities must be explained, apparently, by different processes.

The photographs explain about 35 percent of the total reliable variance when the sample is stratified by sex and ethnic group. This leaves 65 percent of the reliable variation in preference that is unexplained by the photos and is perhaps attributable to interpersonal differences other than sex or ethnic background.

Analysis of the experience ratings reveals differences that are identical in direction but much smaller in degree.

Table 4 shows the correlations among class over the 100 photos for the average preference and experience ratings. Sex differences are greater for the blacks than for the whites, and ethnic differences seem to be greater for the females than for the males. The greatest differences are across sex and ethnicity, and the differences in preference are much greater than the differences in experience, although the pattern of differences is the same. Table 4 also shows the correlations between average preference and average experience over the 100 photos for each class. Although these correlations are all quite low, the correlations for whites are lower than those for blacks, and the correlations for males are lower than those for females. Is this an indication that white males, for example, are more "frustrated" than black females in the satisfaction of their recreational desires? In all cases, the overall weakness of the

**Table 2.—Photographs used in the study**

|   |  |
|---|--|
| 1. Technical caving                       | 51. Folk dance                               |
| 2. Black kids flying kites                | 52. Go-carts                                 |
| 3. Big time track meet                    | 53. Ski-bogganing                            |
| 4. Pony ride                              | 54. Public park and fountain - London        |
| 5. Kids and dog in back yard              | 55. Family in pond near beach                |
| 6. Urban ice skating                      | 56. Hot catamaran racing                     |
| 7. Black kids riding a bicycle            | 57. Boy scout camping                        |
| 8. Family hike on mountain trail          | 58. Stream fishing in forest                 |
| 9. Toy sailboats on park pond             | 59. Forest auto camping                      |
| 10. Badminton at forested park            | 60. Vacant lot shuffleboard                  |
| 11. Kids swimming in a creek              | 61. Grand Prix auto racing                   |
| 12. Water skiing                          | 62. Miniature train ride                     |
| 13. Kids in sprinkler on front lawn       | 63. Roller coaster ride                      |
| 14. Pedal boat on park pond               | 64. Kids jumping from high dive (flips)      |
| 15. Pheasant hunting                      | 65. Miniature golf                           |
| 16. Surfing                               | 66. Pro baseball                             |
| 17. Child on ocean beach                  | 67. Pro football                             |
| 18. Crowded rec. vehicle camping          | 68. Urban zoo                                |
| 19. Slide in urban playground             | 69. Monkey bars at playground                |
| 20. Doubles tennis match                  | 70. Informal soccer                          |
| 21. Skeet shooting                        | 71. Remote powder skiing                     |
| 22. Outdoor concert                       | 72. Urban concrete beach                     |
| 23. Soap box derby                        | 73. Family trailer camping                   |
| 24. Horseback riding                      | 74. Giant slide                              |
| 25. Bicycling on lakeshore                | 75. White-water canoeing                     |
| 26. River floating                        | 76. House painting                           |
| 27. Rowing contest - race                 | 77. Sky diving                               |
| 28. Rowboat on remote lake                | 78. Kids on mud slide                        |
| 29. Swimming in surf                      | 79. Lying around on street benches           |
| 30. Motorboating                          | 80. High slide at swimming pool              |
| 31. Tour boat at Wisconsin Dells          | 81. Lady sunbathing in back yard             |
| 32. Kids playing football, spectators     | 82. Hot motor boat racing                    |
| 33. Touching raccoon at zoo               | 83. Open air ocean beach camping             |
| 34. Kids in playlot (black and white)     | 84. Nontechnical rock climbing               |
| 35. Spectators at big stadium game        | 85. Pigeons and people in urban park         |
| 36. Kids in sand on street (black)        | 86. Horse racing                             |
| 37. Hippie demonstration in park          | 87. Sandy beach at lake                      |
| 38. Pro golf                              | 88. Crowded lake beach                       |
| 39. Picnic and campfire - forest preserve | 89. Snowmobiling                             |
| 40. Kids wading in rocky creek            | 90. Kids high jumping                        |
| 41. Scuba diving                          | 91. Sleigh riding                            |
| 42. Slalom ski racing                     | 92. Kids playing hockey                      |
| 43. Casual golf                           | 93. Mountain tram ride - summer              |
| 44. Amateur flying                        | 94. Unique slide in playground (house ruins) |
| 45. Black fishing - Lincoln Park          | 95. Sailfish sailing                         |
| 46. Bear on road at Yellowstone           | 96. Track tobogganing                        |
| 47. Sightseeing in cave (guided)          | 97. Shoveling deep snow                      |
| 48. Technical cliff climbing              | 98. High mountain climbing                   |
| 49. Old man feeding pigeons - contact     | 99. Flowered hills above ocean               |
| 50. Kids fooling around on corner         | 100. Large boat sailing                      |

**Table 3.—Sample sizes and response rates**

| Race   | Sex       | Class     | Photo Study   |                    | Environmental response inventory |     |    |
|--------|-----------|-----------|---------------|--------------------|----------------------------------|-----|----|
|        |           |           | Random sample | Voluntary response |                                  |     |    |
| White  | Male      | Sophomore | 50            | <i>N</i> 31        | 37                               |     |    |
|        |           | Junior    | 50            | % 62               |                                  |     |    |
|        | Female    | Sophomore | 50            | 35                 |                                  | 70  |    |
|        |           | Junior    | 50            | 29                 |                                  | 58  |    |
|        | Black     | Male      | Sophomore     | 50                 |                                  | 17  | 34 |
|        |           | Female    | Junior        | 50                 |                                  | 21  | 42 |
|        | Sophomore |           | 50            | 22                 | 44                               |     |    |
|        |           | Junior    | 50            | 20                 | 40                               |     |    |
| Totals |           |           | 400           | 200                | 50                               | 114 |    |

**Table 4.—Correlations among sex and ethnic classes over the 100 photos for preference and experiences**

|            | Preference |      |      |      | Experience |      |      |      |
|------------|------------|------|------|------|------------|------|------|------|
|            | WM         | WF   | BM   | BF   | WM         | WF   | BM   | BF   |
| Preference |            |      |      |      |            |      |      |      |
| WM         | 1.00       | .75  | .64  | .36  | .10        | --   | --   | --   |
| WF         | --         | 1.00 | .42  | .57  | --         | .37  | --   | --   |
| BM         | --         | --   | 1.00 | .64  | --         | --   | .38  | --   |
| BF         | --         | --   | --   | 1.00 | --         | --   | --   | .56  |
| Experience |            |      |      |      |            |      |      |      |
| WM         | --         | --   | --   | --   | 1.00       | .92  | .83  | .77  |
| WF         | --         | --   | --   | --   | --         | 1.00 | .77  | .78  |
| BM         | --         | --   | --   | --   | --         | --   | 1.00 | .86  |
| BF         | --         | --   | --   | --   | --         | --   | --   | 1.00 |

correlations indicates that there is considerable disparity between preference and experience.

The relationships between preference and the activity and environmental attributes that describe the photos, and the relationships between experience and the attributes are interesting but too extensive to present here in complete detail. The multiple correlations as well as individual correlations indicate that preference and experience are significantly sensitive to the attributes that have been measured in the photos. However, no sweeping generalizations have emerged, and it is simply not meaningful to propose such things as linear equations at this time. Rather, some illustrative propositions about partial relationships will be presented.

Table 5 shows the correlations with a group of activity variables that clustered together in the factor analysis. These variables seem to measure the degree of "involvement" or "commitment" of the participant in the activity. The correlations show that the males are attracted to activities that have these attributes, while the females tend to be repelled. These tendencies are strongest for the white males and the black females. Experience, on the other hand, is negatively correlated in all cases.

Table 6 shows the correlations of preference and experience with the variables in one of the primary environmental factors. This factor measures the degree of urbanization and human modification of the environment in which the recreation activity takes place. It seems clear that the whites tend to prefer activities that take place in unaltered environments, while the black females are attracted to activities in altered environments. Experience is positively correlated with urbanization and development, and this tendency is strongest for the blacks, especially the black females. Are these preferences affected by differences in experience? It would seem not, because of the similarity in the experience correlations. Something else is going on.

The results of the environmental personality assessment support the environmental correlations. The white students tend to be pastoral and nonurban in their environmental dis-

**Table 5.—Correlations of preferences and experience with the attributes in activity factors**

| Activity attributes                    | Preference |      |      |      | Experience |      |      |      | Factor loading |
|--|------------|------|------|------|------------|------|------|------|----------------|
|  | WM         | BM   | WF   | BF   | WM         | BM   | WF   | BF   |                |
| Skill of participants                  | +.31       | +    | -    | -.18 | -.42       | -.43 | -.55 | -.55 | .93            |
| Amount of training required            | +.32       | +    | -    | -.19 | -.43       | -.44 | -.57 | -.56 | .93            |
| Active vs. passive                     | +.31       | +    | +    | -    | -.20       | -.22 | -.35 | -.40 | .92            |
| Amount of work involved                | +.31       | +    | -    | -    | -.25       | -.29 | -.42 | -.47 | .92            |
| Degree of physical exertion            | +.27       | +    | -    | -    | -.23       | -.25 | -.40 | -.44 | .91            |
| Success experience                     | +.21       | +    | -.22 | -.24 | -.38       | -.37 | -.55 | -.52 | .90            |
| Special knowledge or training required | +.31       | +    | -    | -.25 | -.48       | -.48 | -.59 | -.47 | .88            |
| Degree of involvement                  | +.35       | +    | +    | -    | -.32       | -.32 | -.45 | -.47 | .87            |
| Rate of energy expenditure             | +.27       | +    | +    | -    | -          | -    | -.26 | -.31 | .87            |
| Special knowledge or training helpful  | +.35       | +    | -    | -.26 | -.40       | -.45 | -.53 | -.56 | .87            |
| Degree of discomfort                   | +.34       | +.19 | -    | -    | -.28       | -.29 | -.47 | -.49 | .84            |
| Achievement of predetermined objective | +          | +    | -.30 | -.27 | -.34       | -.33 | -.51 | -.45 | .77            |
| Invasion or conquest                   | +          | +.19 | -.24 | -    | -.24       | -.17 | -.39 | -.29 | .75            |
| Competition                            | +          | +    | -.21 | -    | -.20       | -.18 | -.35 | -.26 | .72            |
| Professional participants              | +          | +    | -    | -    | -.33       | -.30 | -.46 | -.34 | .70            |
| Performed for spectators               | -          | +    | -.19 | +    | -.18       | -    | -.29 | -    | .67            |
| Informal defense of something          | +          | +    | -.20 | -    | -.18       | -    | -.34 | -.23 | .66            |
| Formal defense of something            | +          | +.19 | -.17 | -    | -          | -    | -.23 | -    | .65            |
| Formal performance                     | +          | +    | -    | -    | -.23       | -.17 | -.34 | -.21 | .65            |

**Table 6.—Correlations of preferences and experience with the attributes in environmental factors**

| Environmental attributes             | Preference |      |      |      | Experience |      |      |      | Factor loading |
|--------------------------------------|------------|------|------|------|------------|------|------|------|----------------|
|                                      | WM         | BM   | WF   | BF   | WM         | BM   | WF   | BF   |                |
| Developed vs. undeveloped            | -.36       | -    | -.23 | +.31 | +.29       | +.39 | +.26 | +.45 | .97            |
| Planned vs. unplanned                | -.36       | +    | -.24 | +.34 | +.32       | +.43 | +.29 | +.48 | .96            |
| Altered by man vs. original          | -.36       | -    | -.24 | +.29 | +.26       | +.38 | +.23 | +.45 | .96            |
| Degree of capital investment present | -.36       | -    | -.23 | +.30 | +.24       | +.37 | +.23 | +.43 | .95            |
| Manmade vs. natural                  | -.38       | -    | -.27 | +.32 | +.29       | +.41 | +.26 | +.48 | .94            |
| Urbanized vs. wilderness             | -.36       | -    | -.21 | +.27 | +.24       | +.37 | +.22 | +.43 | .93            |
| Regulated vs. unregulated            | -.31       | +    | -.24 | +.33 | +.30       | +.36 | +.25 | +.43 | .92            |
| Accessible vs. remote                | -.39       | -    | -.17 | +.33 | +.40       | +.46 | +.38 | +.53 | .91            |
| Crowded vs. secluded                 | -.33       | +    | -.23 | +.38 | +.28       | +.38 | +.22 | +.41 | .86            |
| Many buildings vs. no buildings      | -.37       | -    | -.22 | +.23 | +.20       | +.32 | +.20 | +.37 | .86            |
| Modern vs. old                       | -          | +    | -    | +.41 | +.32       | +.40 | +.27 | +.39 | .86            |
| Reachable by public transportation   | -.43       | -    | -.24 | +.26 | +.33       | +.46 | +.31 | +.50 | .85            |
| desecrated vs. conserved             | -.27       | +    | -.19 | +.31 | +.18       | +.34 | +    | +.39 | .75            |
| Noisy vs. quiet                      | -          | +.30 | -    | +.37 | +          | +.30 | +    | +.26 | .74            |
| Enclosed vs. spacious                | -.38       | -    | -.33 | +.18 | +.33       | +.40 | +.28 | +.42 | .71            |

positions, while the black students tend to be urban and not pastoral. These findings should not be generalized beyond the sample, but within the sample, the environmental personality test supports the validity of the measured responses to and content of the photos. If these findings are correct, they suggest that it is the white students who are most "deprived", because their preferences are less compatible with the urban environment in which they live. Of course, this assumes that other things are equal.

Classification of the photographs according to patterns of differences in preference reveals still more interesting information. Four comparisons were made for each photo: white males vs. white female, white male vs. black male, black male vs. black female, and white female vs. black female. In other words, preference comparisons were made for each photo across ethnicity within sex, and across sex within ethnicity. Each comparison has two possible outcomes. For example, in comparing white males and black males with regard to their average preference for a given photo, either the photo will be more preferred by the white males, or it will be more preferred by the black males. (Because of the sample sizes, the probability of a tie is extremely small, and this outcome, though logically possible, can be ignored.) With two possible outcomes for each of four comparisons, there are sixteen logically possible patterns of difference. There were no photos in four of these categories, and seven of the categories contain 88 percent of all the photos. This clustering of differences into certain patterns strongly in-

dicates that there are systematic and nonrandom sorting processes at work.

Table 7 identifies 88 photos that fell into the seven most common categories. The numbers in the right hand columns are the average preference ratings for the group of students in question. A rating of 5 indicates indifference. Numbers greater than 5 indicate attraction, while numbers less than 5 indicate aversion. The aversions are indicated by parentheses. The column headings WM, BM, WF, BF mean "white male, black male, white female, and black female," respectively. A "+" by the column heading means that the photos in the group were more preferred by that class of students than by any other.

This report has only touched briefly on selected aspects of a rather complicated study that has been going on for several years. Lack of space has prevented elaborate development of the conceptual framework of which the study is a part, but the basic premise is that effective design, management and planning of natural outdoor recreation resources requires an *explanation* of the processes by which people make their choices as well as an exposure of the *consequences*, both perceived and actual, both personal and societal, of participation in various alternative activities. To *explain* attractive is to understand the decision rules people use in making their choices. It is grossly inadequate to deal with descriptive measures of participation levels (e.g., user-days) for categorized activities. The explanatory rules should be formulated in terms of the *attributes* of activity and environ-

**Table 7.—Patterns of differences in preference among student groups**

*Type I:* Preferred more by whites and males

|    | +WM                                   | BM  | WF    | BF          |
|----|---------------------------------------|-----|-------|-------------|
| 75 | White-water canoeing                  | 8.0 | 6.7   | 7.3 (4.2)   |
| 56 | Hot catamaran racing                  | 7.8 | 6.2   | 7.8 5.8     |
| 28 | Rowboat on remote forested lake       | 7.5 | 7.4   | 6.8 (4.9)   |
| 26 | River floating - rubber boat - family | 7.5 | 6.8   | 7.4 5.2     |
| 44 | Amateur flying                        | 7.5 | 6.7   | 6.9 5.4     |
| 41 | Scuba                                 | 7.4 | 6.6   | 7.1 5.9     |
| 84 | Nontechnical rock climbing            | 7.3 | 6.2   | 6.7 (3.7)   |
| 53 | Ski-bogganing                         | 7.2 | 6.9   | 7.2 5.1     |
| 8  | Family hiking - mountain trail        | 7.2 | 6.3   | 7.0 5.7     |
| 98 | High mountain climbing                | 7.1 | 5.9   | 6.1 (4.0)   |
| 65 | Miniature golf                        | 6.9 | 6.2   | 6.6 5.0     |
| 77 | Sky diving                            | 6.8 | 5.8   | 6.2 (4.4)   |
| 92 | Kids playing hockey                   | 6.6 | 6.9   | 5.7 (4.6)   |
| 47 | Sightseeing in cave with guide        | 6.4 | 5.6   | 5.9 (4.4)   |
| 27 | Rowing contest - team                 | 6.2 | 6.0   | 6.0 (4.1)   |
| 38 | Pro golf                              | 6.1 | (4.7) | 5.2 (3.2)   |
| 43 | Casual golf                           | 6.0 | 5.2   | 5.2 (3.5)   |
| 48 | Technical cliff climbing              | 5.6 | (4.2) | (4.9) (2.4) |
| 1  | Technical caving                      | 5.6 | (4.0) | (4.6) (2.9) |

*Type II:* For males, preferred more by blacks. For females, preferred more by whites; for whites, preferred more by females; for blacks, preferred more by males

|    | WM                                     | BM    | WF    | BF          |
|----|--|-------|-------|-------------|
| 30 | Motorboating                           | 7.0   | 7.5   | 7.3 6.6     |
| 14 | Pedal boat on park pond                | 6.4   | 7.4   | 7.0 .3      |
| 59 | Forest auto camping                    | 6.7   | 7.3   | 6.9 6.3     |
| 73 | Family trailer camping                 | 6.9   | 7.2   | 7.1 6.8     |
| 57 | Boy scout camping                      | 6.6   | 7.2   | 7.0 6.2     |
| 5  | Kids and dog in backyard               | 6.5   | 6.6   | 6.9 6.4     |
| 68 | Urban zoo                              | 6.0   | 6.6   | 6.9 6.4     |
| 18 | Crowded rec. vehicle camping           | 6.4   | 6.8   | 6.7 6.2     |
| 46 | Bear on road at Yellowstone            | 6.2   | 6.5   | 6.7 5.9     |
| 37 | Hippy demonstration in park            | (4.7) | 5.3   | 5.9 (4.9)   |
| 22 | Outdoor concert                        | (4.5) | 5.5   | 5.3 5.1     |
| 79 | Lying around on benches in street park | (4.9) | 5.5   | 5.5 4.1     |
| 85 | Pigeons and people in urban park       | (4.4) | (4.5) | 5.2 (4.4)   |
| 50 | Kids fooling around on corner          | (4.1) | 5.1   | 5.1 (4.5)   |
| 76 | House painting                         | (3.6) | (4.5) | (4.3) (3.3) |

*Type III:* Preferred more by blacks and females

|    | WM  | BM    | WF    | +BF     |
|----|---|-------|-------|---------|
| 63 | Roller coaster                            | 6.8   | 7.9   | 7.2 8.1 |
| 74 | Giant slide                               | 7.0   | 7.9   | 7.5 8.0 |
| 54 | Public park and fountain in London        | 5.7   | 6.4   | 6.8 7.8 |
| 72 | Urban concrete beach                      | 5.9   | 7.3   | 7.0 7.6 |
| 86 | Crowded lake beach                        | 5.5   | 7.1   | 6.5 7.5 |
| 80 | High slide at swimming pool               | 6.8   | 7.4   | 7.3 7.3 |
| 4  | Pony ride                                 | 6.0   | 6.5   | 6.9 7.2 |
| 9  | Toy sailboats on park pond                | (4.8) | 5.4   | 6.2 6.5 |
| 62 | Miniature train ride                      | (4.5) | 5.7   | 5.5 6.4 |
| 13 | Kids in sprinkler on front lawn           | (4.7) | 5.5   | 6.4 6.4 |
| 34 | Black and white kids together in play lot | (4.5) | 5.4   | 5.6 6.4 |
| 19 | Slide in urban playground                 | (4.4) | (4.6) | 5.9 6.3 |
| 49 | Old man feeding pigeons in the park       | (4.8) | (4.8) | 5.4 6.2 |
| 69 | Monkey bars at playground                 | 5.0   | 5.1   | 6.0 6.1 |

*Type IV:* Preferred more by whites. For whites, preferred more by females; for blacks, preferred more by males

|     | WM                             | BM  | +WF | BF      |
|-----|--------------------------------|-----|-----|---------|
| 29  | Swimming in surf               | 8.0 | 7.3 | 8.2 6.7 |
| 99  | Flowered hills above the ocean | 6.8 | 6.5 | 8.0 6.4 |
| 11  | Kids swimming in a creek       | 7.3 | 7.3 | 8.0 7.1 |
| 12  | Water skiing                   | 7.6 | 7.5 | 7.9 7.0 |
| 95  | Sailfish sailing               | 7.6 | 6.7 | 7.9 5.9 |
| 100 | Large boat sailing             | 7.3 | 6.9 | 7.9 5.4 |
| 83  | Open air ocean beach camping   | 7.3 | 7.2 | 7.8 6.3 |
| 91  | Sleigh riding                  | 7.3 | 7.0 | 7.8 6.5 |
| 33  | Touching a raccoon at the zoo  | 6.2 | 6.1 | 7.4 6.0 |
| 97  | Shoveling deep snow            | 6.5 | 6.2 | 7.0 5.4 |
| 93  | Mountain tram ride - summer    | 6.4 | 6.4 | 6.9 5.3 |

CONTINUED

**Table 7.—continued**

| Type V: Preferred by whites and females   |  | WM    | BM    | +WF   | BF    |
|---|--|-------|-------|-------|-------|
| 25  | Bicycling on the lakeshore                   | 8.2   | 7.6   | 8.2   | 7.9   |
| 40  | Kids wading in a rocky creek                 | 7.1   | 6.5   | 8.0   | 6.9   |
| 17  | Child at ocean beach                         | 6.9   | 6.9   | 8.0   | 7.3   |
| 64  | Kids doing acrobatics from high dive         | 7.2   | 6.9   | 7.7   | 7.0   |
| 71  | Remote powder skiing                         | 7.1   | 5.8   | 7.6   | 6.0   |
| 42  | Slalom ski racing                            | 7.0   | 5.8   | 7.4   | 6.0   |
| 20  | Tennis match - doubles                       | 6.6   | 5.8   | 7.0   | 6.9   |
| 16  | Surfing                                      | 6.6   | 5.5   | 6.9   | 6.2   |
| 94  | Unique playground slide (house ruins)        | 6.0   | 5.6   | 6.8   | 6.0   |
| 78  | Kids on mud slide                            | 5.1   | (4.4) | 6.0   | (4.9) |
| Type VI: Preferred by blacks and males  |  | WM    | +BM   | WF    | BF    |
| 67  | Pro football                                 | 6.8   | 8.3   | 6.2   | 6.5   |
| 32  | Football game - kids and spectators          | 6.4   | 8.0   | 5.8   | 6.6   |
| 52  | Riding go-carts                              | 7.4   | 8.0   | 7.5   | 7.4   |
| 66  | Pro baseball                                 | 7.3   | 7.9   | 7.1   | 7.1   |
| 3   | Track meet - big time                        | 6.4   | 7.8   | 7.7   | 7.7   |
| 61  | Grand Prix auto racing                       | 6.3   | 7.2   | 5.2   | 6.8   |
| 46  | Black fishing at Lincoln Park                | 6.4   | 7.1   | 5.9   | 7.0   |
| 21  | Skeet shooting                               | 5.3   | 7.0   | (3.5) | (4.4) |
| 23  | Soap box derby                               | 6.3   | 6.9   | 6.3   | 6.9   |
| 15  | Pheasant hunting                             | (4.3) | 6.9   | (2.4) | (3.0) |
| Type VII: Preferred more by females. For males, preferred more by blacks; for females, preferred more by whites |  | WM    | BM    | +WF   | BF    |
| 39  | Picnic and campfire at forest preserve       | 7.2   | 7.3   | 7.9   | 7.4   |
| 24  | Horseback riding                             | 7.2   | 7.2   | 7.8   | 7.6   |
| 10  | Badminton at a forest-rimmed park            | 6.5   | 6.9   | 7.8   | 7.4   |
| 87  | Sandy beach at lake                          | 6.6   | 7.1   | 7.7   | 7.2   |
| 2   | Black kids flying kites                      | 6.1   | 6.1   | 7.6   | 7.2   |
| 55  | Family in pond at beach                      | 6.2   | 6.8   | 7.0   | 6.7   |
| 81  | Lady sunbathing in back yard                 | (4.8) | 5.5   | 6.4   | 5.9   |
| 51  | Folk dance                                   | (3.9) | (4.4) | 5.7   | (4.6) |
| 36  | Black kids playing in pile of sand on street | (3.9) | (4.4) | 5.3   | (4.9) |

ment that are the objects of attraction (a la *Lancaster 1966*), the perceived experiential consequences that generate attraction (a la Driver), and the personal needs and motives that underlie the whole process. Even when this is done, the planning framework will not be complete without clarification of the actual consequences, so that it can be determined whether and in what ways participation in given activities is socially productive or whether it is nonproductive consumption of pleasure.

The following propositions are among those supported by the results of this study:

1. For high school students, there are significant differences in the decision "rules" by which males, females, blacks, and whites make their recreation choices.

2. When students are stratified by sex and ethnic background so as to separate these processes, then measurable differences among recreation activities explain a significant portion of the real variations in preference. The un-

explained interpersonal difference (about two-thirds of the reliable variance in this study) is perhaps attributable to variables not measured in the study, either of the activity and environment or of the person.

3. Experience is not strongly correlated with preference, but the correlation is somewhat stronger for blacks and females than for whites and males.

4. Preferences can be partially explained in terms of measurable attributes or activity and environment. There are strong sex and ethnic differences in the attractiveness of many attributes. For example,

- a. Activities requiring skill, training, physical exertion, etc., tend to be attractive to males, especially white males, and unattractive to females.
- b. The degree of urbanization of the environment is negatively related to white preferences and positively related to black female preferences.

c. Experience has a strong positive relationship with the degree of environmental urbanization for all groups. There is much more commonality in experience than in preference.

5. There are types or classes of activities that tend to be preferred by the various sex-ethnic groups. For example:

a. There is a tendency for whites and males to be more attracted than blacks to such activities as white-water canoeing, climbing, and sky diving. Black females tend to find such activities unattractive, while white males tend to find them very attractive.

b. Activities that take place in urban parks, urban beaches, and amusement parks tend to be more attractive to blacks and females than to whites or males.

c. Whites and females tend to be more attracted than blacks or males to bicycling, skiing, tennis, etc.

d. Competitive physical sports such as football, baseball, track, etc., tend to be preferred more by blacks and males than by whites or females.

Although the above propositions and others that the data may suggest are interesting, they should be generalized and used with caution. To say, for example, that the differences observed in this study between blacks and whites at Evanston High School are true for all blacks and whites, or to apply the findings strictly to specific individuals would be irresponsible.

At this point the discussion ought to turn to interpretation and explanation of the findings. Why do these differences exist? Are they inherent or learned? Should they be recognized

and reenforced by the supply process, or is it more desirable to preserve diversity while diffusing racial or sexual differences? Unfortunately, such discussion must occur elsewhere, for there is not room here. As yet the information is incomplete, and intelligent planning decisions cannot be made until motives, constraints, consequences, and social and cultural influences are better understood. In the meantime, the best rule is, perhaps, free choice and diversity of opportunity. That there are differences in recreational preference among individuals is well known, and has been further emphasized in this study. That these differences are related systematically to sex and race is perplexing but not surprising. What, if anything, should be done about such differences must be left to politics and further research.

#### Acknowledgment

The research reported in this paper was supported in part by a grant from the Environmental Control Administration of the U. S. Public Health Service (5 RO1 00301).

#### LITERATURE CITED

- Hanssen, J. U.  
1971. **A quantitative description of the content of outdoor recreation activities and environments.** Res. Rep. submitted for M.S. degree. Dep. Civil Eng., Tech. Inst. Northwest. Univ.  
Lancaster, K.  
1966. **A new approach to consumer theory.** J. Polit. Econ. 74:132-157.  
McKechnie, G.  
1970. **Measuring environmental dispositions with the environmental response inventory.** EDRA 2, Proc. 2nd Annu. Environ. Des. Res. Assoc. Conf.



PHOTO BY WALT BLAIR

“Children almost never relate to the natural environment in a solitary fashion; they are members of social groups such as families, friends, or school classes, and relate to the environment as members of these groups” - Robert G. Lee

## Observations in Public Settings

by ROBERT G. LEE, Assistant Professor, Department of Forestry and Conservation, College of Natural Resources, University of California, Berkeley.

---

**ABSTRACT.** Straightforward observation of children in their everyday environments is a more appropriate method of discovering the meaning of their relationships to nature than complex methodologies or reductionist commonsense thinking. Observational study requires an explicit conceptual framework and adherence to procedures that allow scientific inference. Error may come from those being studied, the investigator, or the sampling procedure. Systematic observation is one of the most useful ways of learning about the complex interrelationships of a child's world.

---

**T**HE BEHAVIOR of children in natural settings is exceedingly complex. Researchers have responded to this complexity in two ways: One tendency has been to rely on highly technical methods of collecting and analyzing data. This approach assumes that a complex situation can be understood best by a complex methodology. The other tendency is to make reductionistic evaluations of children and their relationships, basing them on tenuous theories about human behavior. An example of reductionistic thinking is the almost exclusive emphasis placed on the individual child by educators, researchers, and the designers of children's environments. This emphasis on the individual often reflects a normative stance that abstracts the child from its milieu and treats the child as an *ideal* to be achieved rather than a *reality* to be grasped through empirical study.

Both reductionistic thinking and complex methodology overlook the advantages of systematic observation of natural behavior. Some of the most important scientific discoveries (the work of Charles Darwin, for example) have resulted from direct observation of complex phenomena. Therefore, let us follow the advice of the pragmatists and turn from the "thin abstractions" to the "thick facts".

### OBSERVATION DEFINED

Observation as a research method differs from the everyday process of observing our surroundings. As part of that process, we constantly note what other people do and interpret their actions by drawing inferences as to their *meaning* for us or for others. We impute motives to others in order to explain why they act as they do. Our commonsense inclination leads many of us to impute a need for natural environments to children living in urban environments. Yet we know almost nothing about these children and the circumstances of their lives. Thus, our everyday awareness may not be the best tool for discovering the *actual* relationships between these children and their environment. Observation as a scientific data collection method requires us to suspend our tendency to impute meaning to the behavior of others; it leads us to discover meaning by systematically examining natural behavior.

What are the basic elements in the act of scientific observation? Webster's New World Dictionary defines observation as ". . . the act or practice of noting and recording facts and events, as for some scientific study". The practice of noting and recording events is always

structured by a theoretical or practical problem; only selected attributes or events are noted and recorded. We may be concerned with the natural objects children use in play and choose to ignore the children's social status, race, place of residence, and other characteristics that we consider irrelevant to the purpose of the study.

To be *systematic*, observation must be guided by an explicit conceptual framework and behavior must be noted and recorded in accordance with rules permitting scientific inference. The term *natural behavior* refers to behavior that can be observed as it occurs in an everyday situation or natural setting, uninfluenced by the actions of the observer. Natural behavior can be noted and recorded only if observation is unobtrusive.

Three procedural features are essential for noting and recording natural behavior (Jones et al. 1975):

- 1) behavioral events must be recorded in their natural settings at the time they occur, not retrospectively;
- 2) trained impartial observer-coders must be used; and
- 3) behaviors must require little if any inference by observers to code.

Only directly observed behavior is noted. Excluded are reports of behavior from interviewees, third parties, or self-reporting questionnaires. These methods do not record behavior at the time it occurs, nor in its natural setting. Third-party or self-reports do not use impartial observers. Trained, impartial observers are required because in this instance the observer is the research instrument, and what the observer notes and records (codes) becomes data.

## A CONCEPTUAL FRAMEWORK FOR GUIDING OBSERVATIONS

It is a common misconception that an understanding of behavior will emerge if we simply view others with an "open mind". However, such "immaculate perception" is a myth. We see reality through the lens provided by our culture, subculture, and institutional affiliations; reality is filtered and structured by our language, myths, habits, and formal rules.

The importance of a conscious conceptual framework guiding the observer is obvious from Whorf's statement that "We dissect nature

along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face." As members of a culture and speech community "We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way . . ." (Whorf 1947:214). Knowingly or not, every observer employs some sort of conceptual framework to order the data-gathering process. Meaning is not a property of the behavior itself. Behavior acquires meaning because of its relationship to a particular context (Schefflen 1974).

To illustrate: Milton Leitenberg (1963), a biologist who was accustomed to making detailed observations of natural phenomena, was traveling in Nova Scotia when he stopped to visit a small town. The town was economically depressed, having previously been supported by coal mines that were now closed. Toward evening, as he sat watching the children play, he noticed that their game differed from any he had played as a child in the United States or had seen during 20 years as an apartment dweller in New York City. Leitenberg suggested that the unusually cooperative character of the game was related to the depressed economic situation of the townspeople.

Perhaps the play sequence indicates some relationship between the degree of social cooperation, simultaneous lack of aggressiveness and other competitive or fearful components in children's games, and the economic situation of the parents. (p. 5)

In Western society our cultural bias leads us to think of children as *individuals* and treat their relationships to other people, culture, place, and time as constraints or opportunities for individual development. There is an underlying assumption that the individual child is inherently "close to nature" and that this inclination has been inhibited by artificial environments, abstract institutional symbols, and authoritarian social relationships.

It is entirely possible that our everyday attitudes toward children are not the best framework for guiding systematic observations. A logic that focuses our attention on the *relationships* between behavior and its context may be more appropriate for discovering the meanings of the natural environment to children.

The framework I propose interprets the

meaning of a child's behavior in terms of social, cultural, physical, and temporal contexts. Every child is *socially located*, beginning with the immediate family and extending to relatives, school, church, neighbors, community authorities, and many more individuals and groups. Children are also *culturally informed* about how they should behave toward other people and objects in their environment. Learning about the natural environment is part of the acculturation process. The social definition of *place* is always an important context for a child's behavior. Children learn to associate particular forms of behavior with places, such as sidewalks, parks, schools, and churches. Finally, the *sequence of events* also constitutes a context for behavior. The life of a child is punctuated by temporally prescribed activities, such as the school year, summer vacation, recess, and "after school". So when we ask what it means for a child to explore nature, we must specify the context within which we wish to examine meaning. The subjectively perceived meaning of nature to the individual is only one of many contexts in which behavior may be studied.

An illustration of how this conceptual framework may be used to guide naturalistic observation is my observation of a park in San Francisco's Chinatown (*Lee 1973*). The park was in the center of Chinatown, surrounded by Chinese restaurants, shops, and apartment houses. It was built on a hill and had two levels of approximately equal size. The primary users of the park were propertyless low-income residents, who used it as a place to join others for conversation, games of chance, or to observe local social life. Chinese residents of higher status used the park only as a pathway or for local ceremonies.

From daylight until 7:30 a.m. the park was used as a training ground for the Chinese martial arts. From 8 to 11 a.m. elderly men slowly gathered on the upper level to play traditional Chinese games and visit. Activity was greatest between 11 a.m. and the late afternoon. Between midmorning and late afternoon mothers brought small children to play in the children's playground, at the northeast corner of the lower level. When the weather was favorable they were joined in the late morning by elderly women who came to sit in the sun and visit. Adult women seldom used other sections of the park except as a pathway. At noon,

Caucasian white-collar and construction workers sat on benches throughout the park to eat their lunch. Tourists used the park both as a pathway and as an attraction from midmorning until evening. In the afternoon and early evening younger Chinese men who had been working during the day came to visit and play games of chance. Throughout the day black and white Skid Row indigents wandered about the park, begging from tourists, sleeping, and drinking. Older children, ranging in age from 10 to 15, used the park as a place to gather and play after other people had left for the day.

These observations showed that the relationship between children and the park was imbedded in a complex network of cultural, social, temporal, and spatial relationships. This made it very difficult to talk abstractly about the meaning of a child's behavior toward the environment, because a child's behavior toward the environment was a result of the interaction of many different contexts. I observed that children spent very little time in the park itself. Instead they made extensive use of playgrounds, streets, sidewalks, alleys, and shops. Community workers and children expressed a need for more developed recreation facilities, such as playing fields, basketball courts, swimming pools, and playgrounds. Contact with nature, by itself, was not an experience that was valued highly by adults or children. The meaning of recreation was closely linked to the intensely social character of behavior in outdoor spaces.

## PROCEDURES FOR GATHERING UNBIASED DESCRIPTIONS

There are advantages and disadvantages to every method of gathering data. Direct observation may be a better method than interviews for discovering relationships between children and their environments because people, particularly children, are unaware of how most of their behavior is related to various contexts (*Hall 1966, Schefflen 1974*). Even if people are able and willing to tell the researcher how they feel about particular objects in their environment, they may not be conscious of the degree to which their behavior depends on what happens in their surroundings. Many of these relationships can be discovered when observation is structured by

a logical framework and conducted in a way that reduces the introduction of error.

In studies of people there are three usual sources of error (*Webb et al. 1966:12*):

- 1) Error may be traced to those being studied;
- 2) Error may come from the investigator; and
- 3) Error may be associated with sampling imperfections. Error produced by those studied is far less when observation is used instead of interviews or questionnaires. *Webb et al (1966:1)* warned that:

Interviews and questionnaires intrude as foreign elements into the social setting they would describe; they create as well as measure attitudes; they elicit atypical roles and responses. . .

From many years of experience in the use of observation for studying children, techniques have been developed that minimize the influence of the observer on the behavior of the child (*Willem's 1965*).

Error from the investigator is far more likely to threaten validity when observations are used instead of questionnaires. The human observer is the data-gathering instrument, and is subject to boredom, fatigue, or distraction. Lack of reliability (interobserver agreement) also threatens the quality of observational data; different observers may vary in the kinds of behavior they note and code. These sources of error can be reduced substantially by careful training of the observers and use of standardized observation schedules. Mechanical recording instruments such as photographs, film, and tape recordings also reduce error from the observer. Multiple observers not only reduce the error in aggregated data but also make it possible to measure reliability (*Reiss 1971*).

Sampling errors may be introduced when access to populations of interest is restricted, or where populations vary over time or geographical area. Access to children interacting with their everyday environments is particularly difficult. Most studies have relied on samples structured by time, place, or institutional organization, such as school classes. *Barker and Wright (1951)* avoided sampling error by censusing the behavior of a child. They noted and recorded the minute-by-minute behavior of a boy for an entire day, using eight observers in succession. This yielded a complete description of a child in his natural situation, from home and school to places of play. Even though the external validity of such naturalistic

observations is limited, the data enable the researcher to connect particular acts to specific social, physical, and temporal contexts. *Barker and Wright's* studies are convincing evidence that it is difficult, if not impossible, to generalize about the behavior of children without specifying the immediate milieu.

## CONCLUSION

Many significant relationships are below the level of our everyday awareness. Commonsense thinking has resulted in so much emphasis on the dyadic relationship between an individual and the natural environment that the importance of other objects in a child's life has been ignored. Children almost never relate to the natural environment in a solitary fashion; they are members of social groups such as families, friends, or school classes and relate to the environment as members of these groups. The meaning of the environment also changes with time, place, and cultural context. Membership in a culture informs children how to behave toward nature in general and toward specific natural environments.

Many teachers, environment designers, and recreation specialists are concerned with enhancing children's awareness of and feeling for the natural environment. A great deal of idealism and emotion is associated with this objective. However, it is my observation that commitment, no matter how strong, will be insufficient for achieving even a small part of this ideal without factual information on the complex of relationships in a child's life. Systematic observation of children in public settings is one of the most useful ways of getting this information.

## LITERATURE CITED

- Barker, Roger G., and H. F. Wright.*  
1951. *One boy's day: A specimen record of behavior.* Harper and Bros., New York.
- Burch, William R., Jr.*  
1964. *Observation as a technique in recreation research.* In *Land and leisure: concepts and methods in outdoor recreation.* (D. W. Fischer, J. E. Lewis, and G. B. Priddle, eds.) Maaroufa Press, Chicago.
- Jones, Richard R., J. B. Reid, and G. R. Patterson.*  
1975. *Naturalistic observation in clinical assessment.* In *Advances in psychological assessment* Vol. 3. (P. Reynolds, ed.) Jossey-Bass, San Francisco.
- Hall, Edward T.*  
1966. *The hidden dimension.* Doubleday, Garden City, N.Y.

- Lee, Robert G.  
1973. **Social organization and spatial behavior in outdoor recreation.** Unpub. Ph.D. diss., Univ. Calif., Berkeley.
- Leitenberg, Milton.  
1963. **The natural birth of a hypothesis.** *Am. Behav. Sci.* 17(Oct.):3-5,9.
- Reiss, Albert J., Jr.  
1971. **Systematic observation of natural social phenomena.** *In Sociological methodology* 1971. (H. L. Costner, ed.). Jossey-Bass, San Francisco.
- Schefflen, Albert E.  
1974. **How behavior means.** Anchor Books, Garden City, N.Y.
- Webb, Eugene J., D.T. Campbell, R. D. Schwartz, and L. Sechrest.  
1966. **Unobtrusive measures: nonreactive research in the social sciences.** Rand McNally, Chicago.
- Willems, Edwin P.  
1965. **An ecological orientation in psychology.** *Merrill Palmer Q.* 11 (Winter):317-343.
- Whorf, Benjamin L.  
1947. **Science and linguistics.** *In Readings in social psychology.* (T. M. Newcomb and E. L. Hartley, eds.) Henry Holt and Co., New York.
-



PHOTO BY WALT BLAIR

“The fact that children are pictured so rarely in situations where they can demonstrate problem-solving ability in a realistic (non-magical) way deprives children of opportunities for identifying with and internalizing the image of a competent child” - Gwen Hamlin, Yona Nelson-Shulman, and Sheree West

## Children's Television: An Environmental Learning Resource?

by GWEN HAMLIN, YONA NELSON-SHULMAN, and SHEREE WEST, all of the Environmental Psychology Program, City University of New York.

---

*ABSTRACT.* This study was designed to explore the environmental information currently available on those television programs most frequently watched by children 2 to 11. The aspects investigated were: range and type of environments shown, relative proportions of time spent on interior and exterior scenes, and verbal expressions and actions related to the environment. Exterior environments were classified by topography, density of habitation, and land use. Saturday morning and prime-time programs were compared on these dimensions. All of the data were analyzed for environmental themes. Implications of the results and some directions for future research are discussed.

---

CHILDREN LEARN about their world in a variety of ways. Learning happens in countless environments: in the explicitly educational classroom situation, through direct personal action and experience in the world, and also through indirect, mediated experience. Television is one source of such indirect experience. Although its explicit function is most commonly entertainment rather than education, its potential for affecting viewers attitudinally, cognitively, and/or behaviorally has been established by recent extensive research on TV as a source of social learning (*Leibert, Neale, and Davidson 1973*). Our question in this research was: what is the potential for environmental learning through television?

Attitudes, expectations and information regarding human relationships with the land, with nature, and with the built environment are expressed constantly on television. Children can see different landscapes, and can learn (whether accurately or not) about various geographical regions of the world, as well as about natural and earth-science processes. Various types of built environments and the activities appropriate to them are shown. Children thus

have the opportunity to see a range of lifestyles and their environmental supports. All of these may contribute to an expanding internal representation of the child's world.

TV has been criticized as a passive medium, a one-way communication process which deprives children of the time and incentive to explore their own environment selectively and to learn by asking questions and receiving feedback (*Bettelheim 1960*). On the other hand, the characters and stories viewed on TV may spark an active and creative fantasy play in children at other times and places. Furthermore, TV may expose children to a wider range of action possibilities, general information, and environmental learning than they would ever have direct personal access to, thus expanding their cognitive options and potential modes of behavior.

The classic communication model provided the conceptual framework for our investigation of the potential contribution of television to children's environmental learning. The model sets up three distinct areas to be investigated: 1) the communicators and their intentions; 2) the message (i.e., program content); 3) the audience

and its reception and processing of the message. Clearly, any television program reflects the multiple input of writer, director, producer, network and sponsor, and their individual and collective values and vested interests as well as generalized cultural assumptions of appropriateness, aesthetics, and morality. This study touched on only part of the greater system at work. It was an initial attempt to deal with the second area of the available message, by isolating and analyzing the environments presented through this medium.

Our aim was to find out what environmental information is available to children on popular television. What programs do most children watch; what are they about; what kinds of environments are represented; and in what format? What uses are made of environments and what explicit references are made to environments that express underlying values and attitudes? What are the major themes dealing with environmental issues? Finally, what are the roles that children play in relation to their physical setting; how do they deal with environmental problems; and what environmental skills do they demonstrate that might be of instructional value to their viewers?

We supposed that conventional social assumptions about children and environments might be revealed by comparing Saturday-morning with prime-time programming. Is children's performance in various environments

handled differently when an adult audience is anticipated? Programs that are shown on Saturday morning are designed specifically for children, whereas prime-time programs (broadcast during the heavy-viewing hours from 8 to 11 p.m.) are aimed at adults as well.

## METHOD

We used the Nielsen ratings for the first two weeks in January 1975 to determine which of the Saturday morning and evening prime-time programs were seen by the largest numbers of children. Of prime-time programs, only hour-long series were selected (table 1). Nielson estimates that 9 million children from 2 to 11 watch these programs regularly. We recorded a total of 20 viewing hours (10 from Saturday morning and 10 from prime time). We watched two episodes from each series and videotaped them for later analysis.

Each scene was described by reducing its visual narrative to a capsule scenario (scene changes were determined primarily by change of setting). With each change of setting, plot developments were noted. Setting was described in terms of location (e.g., California), topography (e.g., flat desert), land use/building type (e.g., commercial, low-rise) and degree of habitation (urban, suburban, rural, uninhabited). Frequently, settings were categoriz-

Table 1.—Programs viewed

| Program                        | Format       | Principal setting                         | Main characters (all animated animals are anthropomorphized) |
|--------------------------------|--------------|---|--|
| SATURDAY A.M.                  |              |   |  |
| Devlin                         | Animated     | Nomadic (circus)                          | girl, teen boy, young man (siblings)                         |
| Hong Kong Phooey               | Animated     | Urban                                     | dogs <sup>a</sup> , cat <sup>a</sup> , adults                |
| Jeannie                        | Animated     | Suburban                                  | teens, female genie, immature genie                          |
| Land of the Lost               | Live action  | Artificial set: prehistoric jungle, caves | girl, boy, father  |
| Pink Panther                   | Animated     | Various and abstract                      | Panther, ant, aardvaark, anonymous humans                    |
| Run, Joe, Run                  | Live action  | Nomadic                                   | trained dog, male trainer                                    |
| Shazam                         | Live action  | Nomadic                                   | teen young man <sup>a</sup> , older man                      |
| Sigmund and the Sea Monsters   | Live Action  | Artificial set: suburban beach and house  | 2 boys, older 'Aunt', sea monsters                           |
| Superfriends                   | Animated     | Metropolitan, air, and underwater         | 2 children, assortment of superheroes <sup>a</sup>           |
| The New Adventures of Gilligan | Animated     | Tropical island                           | young man, adults  |
| EVENING (all are live action)  |              |   |  |
| Emergency                      | Adventure    | Metropolitan                              | Male adults (public servants)                                |
| Little House on the Prairie    | Family drama | 19th century, prairie                     | nuclear family   |
| Six Million Dollar Man         | Adventure    | Various international                     | male adult <sup>a</sup>                                      |
| The Rookies                    | Adventure    | Metropolitan                              | male adults (public servants)                                |
| The Waltons                    | Family drama | 1930's, Virginia mountains                | extended family with grandparents                            |

<sup>a</sup> Character with supernatural powers

ed on the basis of context, since the landscape was only glimpsed or was not in clear focus. Distinctions between suburban-commercial and urban categories were particularly difficult to make, as they are, in fact, typically blurred in American cityscapes. Other salient visual qualities (e.g., climatic conditions) were recorded and the setting was designated, whenever possible, as exterior or interior.

All verbal references to the environment (factual statements, emotional responses, puns, etc.) were transcribed, as were any salient actions upon the environment, e.g., carving initials into a tree. Each interior and exterior shot was timed to determine its respective contribution to the total time. Finally, themes and global messages emerging from a content analysis of verbal expressions and environmentally related actions or plot developments were noted and analyzed.

## DESCRIPTION OF PROGRAMS VIEWED

Of the top 10 Saturday morning programs we viewed, 6 were animated and 4 were live-action productions. Three programs maintained stable settings, while the rest offered a wider variety of settings within and between episodes. Three programs featured characters whose nomadic lifestyles brought them to a new local each week. Only two programs were primarily urban. Four programs featured animals as main characters and four had main characters with some kind of super power.

All of the five prime-time programs viewed were live-action dramas, utilizing both locations and realistic sets. Three were action-adventure series, two of which were based in specific metropolitan areas. The third varied its location weekly, often suggesting international settings. The protagonists of these series were adult men.

The other two series were both rural, set in the past, and featured families with children.

Few programs showed children under 12. On Saturday morning, when programs are aimed specifically at children of that age, only 4 of the 10 regularly showed children as protagonists. Adolescents were shown in four others. Altogether, of the 29 episodes viewed, only 11 featured a child as a main character (7 of 19 on Saturday; 4 of 10 in prime time). Of the two evening series featuring families, children were central to the plot in two of the four episodes. Young people were shown in urban situations only twice, both briefly on Saturday morning.

## RESULTS

Of Saturday morning program time, 59.2 percent was devoted to exterior scenes, while 40.2 percent of the time the action took place inside. The remaining 0.6 percent used abstract settings which fit into neither category. The percentages were reversed for prime time: 40.5 percent of the total were exterior scenes, while 59.5 percent were interior scenes (table 2). Much of the exterior time in prime time was devoted to quick establishing shots (5 to 10 seconds for a long shot or pan shots used to provide a frame of reference), or to what we came to call "in-transit" sequences. These were typically chase scenes, where the environment added to the sense of risk and suspense, or transitional scenes, which eased the flow from one set location to another.

Table 3 summarizes the exterior environments by general type of landscape on a rough continuum of density of habitation and type of land use. In the overall sample, the predominant landscapes (30.5 percent of total exterior time) were rural and sparsely inhabited, as exemplified by the dry scrub and grassy hills typical of southern California. The

**Table 2.—Time spent in interior and exterior settings by Saturday and evening shows**

| Time period | Interior |      | Exterior |      | Other |     | Total  |       |
|-------------|----------|------|----------|------|-------|-----|--------|-------|
|             | Min.     | %    | Min.     | %    | Min.  | %   | Min.   | %     |
| Saturday    | 161.19   | 40.2 | 237.54   | 59.2 | 2.48  | 0.6 | 401.21 | 100.0 |
| Evening     | 283.03   | 59.5 | 192.23   | 40.5 | —     | —   | 475.30 | 100.0 |
| Total       | 444.22   | —    | 429.82   | —    | 2.48  | —   | 876.51 | —     |

**Table 3.—Exterior time devoted to landscape types in Saturday and evening hours**

| Landscape type                                   | Saturday      |                         |                          | Evening       |                         |                          | Total exterior |                          |
|--|---------------|-------------------------|--------------------------|---------------|-------------------------|--------------------------|----------------|--------------------------|
|  | Minutes       | % of Sat. exterior time | % of total exterior time | Minutes       | % of eve. exterior time | % of total exterior time | Minutes        | % of total exterior time |
| Urban  | 10.47         | 4.4                     | 2.4                      | 21.20         | 11.0                    | 4.9                      | 31.67          | 7.4                      |
| Suburban commercial                              | 6.74          | 2.8                     | 1.6                      | 14.87         | 7.7                     | 3.5                      | 21.61          | 5.0                      |
| Suburban residential                             | 26.75         | 11.3                    | 6.2                      | 9.30          | 4.8                     | 2.2                      | 36.05          | 8.4                      |
| Small town/campus 1.51                           | 0.6           | 0.4                     | 38.00                    | 19.8          | 8.8                     | 39.51                    | 9.2            |                          |
| Rural/sparingly inhabited                        | 45.31         | 19.1                    | 10.5                     | 85.73         | 44.6                    | 19.9                     | 131.04         | 30.5                     |
| Wild/uninhabited                                 | 71.21         | 30.0                    | 16.6                     | 10.40         | 5.4                     | 2.4                      | 81.61          | 19.0                     |
| Subtotal   | 161.99        | 68.2                    | 37.7                     | 179.50        | 93.3                    | 41.7                     | 341.49         | 79.5                     |
| Public recreational                              | 27.25         | 11.5                    | 6.3                      | 9.38          | 4.9                     | 2.2                      | 36.63          | 8.5                      |
| Other surfaces (air, water, etc.)                | 34.12         | 14.4                    | 7.9                      | 88            | 0.5                     | 0.2                      | 35.00          | 8.1                      |
| Not accounted for (technical difficulties, etc.) | 14.18         | 5.9                     | 3.3                      | 2.52          | 1.3                     | 0.6                      | 16.70          | 3.9                      |
| <b>Total</b>                                     | <b>237.54</b> | <b>100.0</b>            | <b>55.2</b>              | <b>192.28</b> | <b>100.0</b>            | <b>44.7</b>              | <b>429.82</b>  | <b>100.0</b>             |

activities most frequently shown in these dry rocky hills were high action chase sequences. Rural scenes of ponds, woods, or dirt paths, on the other hand, were usually settings for social interaction and intimate encounters between family and friends. Wild, uninhabited landscapes were second in frequency (19.9 percent). Urban settings accounted for only 7.4 percent of the total exterior time for all programs, and suburban commercial strips were seen least (5.0 percent).

The Saturday morning programs showed a much greater variety of landscape types, including more exotic and wild, uninhabited regions; e.g., deserts, mountains, tropical islands, jungles, etc. Often these settings served as remote or mythical supports for events more freely fantasized than those usual in evening programs. Most prime-time exterior scenes (93.3 percent) fell into one of the six density/land use categories shown in table 3, as did a smaller majority (68.2 percent) of the Saturday morning landscapes. Not all scenes could be categorized along those dimensions, however: 8.5 percent of the total exterior time showed public recreation settings, e.g., racetracks, fairgrounds, zoos, and stadiums. Of this category, 74.4 percent was contributed by the Saturday morning programs. Other surfaces, e.g., air, water, underwater, etc. accounted for 8.1 percent of the total exterior time, with 97.5 percent of that category attributable to Saturday morning programs.

On Saturday morning, the predominant category was wild, uninhabited landscape (30.0 percent of Saturday exterior time). The next most frequent was rural, sparsely inhabited (19.1 percent), followed by suburban residential (11.3 percent). Urban exteriors accounted for only 4.4 percent of Saturday time, with small town/campus appearing least often (0.6 percent).

The predominant landscapes in prime time, on the other hand, were rural, sparsely inhabited (44.6 percent of evening exterior time), and small town/campus (19.8 percent), contributed primarily by two programs—*The Waltons* and *Little House on the Prairie*—which feature the same rural locales each week. Urban landscapes were third in amount of evening exterior time at 11.0 percent. Wild, uninhabited landscapes (5.4 percent of evening exterior time) and suburban residential exteriors (4.8 percent) appeared least frequently.

Four of the most frequent environment-centered themes are discussed below with brief illustrative references from the specific programs in which they appear.

Being marooned, lost and/or isolated—generally as the result of some natural disaster—provides the *raison d'être* and continuous plot line for the two most popular (according to a recent Nielsen statistic) Saturday morning programs. In *The New Adventures of Gilligan*, a shipwreck has left an odd assortment of people

stranded on an island, which provides a physical context for weekly adventures and mishaps. In *Land of the Lost*, a father, son, and daughter find their camping trip disrupted when an earthquake catapults them into a prehistoric time dimension. One episode of *Devlin* dealt with the experience of being trapped in a narrow mountain pass by an avalanche that followed an unexpected blizzard. In both *Devlin* and *Land of the Lost*, the environment is depicted as hostile and threatening, requiring the protagonists to muster their resources in dealing with the challenge of the situation. The characters in *Gilligan* also cope quite successfully with the situational demands of their island existence, but the environment is seen as more supportive, adding credence to the myth of easy and bountiful living on tropical islands.

A number of environments evoked responses of aesthetic appreciation. In *Shazam*, Mentor and Billy admire the tranquility of their mountain surroundings: "...especially up here where it's so peaceful and quiet." Sandy, in *Devlin*, is awe-struck at the same mountain snowfall which unnerved her older brother: "It's beautiful—look, it's snow. . . Like a kid's fairy tale!" Francie, in *The Rookies*, reminisces about "just walking through the park—it was beautiful, really beautiful." Most notable of all is 8-year-old Laura's soliloquy while fishing with her beloved Johnny: "What a pretty song. Squirrels playing and fish jumping—this is such a cheerful place. At times like this, I feel all warm and sparkling inside" (*Little House on the Prairie*).

Environments were also seen as refuges where people go to elude their pursuers. Although the rural, sparsely inhabited landscape often provides this escape, e.g. fleeing to the hills to escape police (*The Rookies*), the urban environment also provides multiple opportunities for flight and retreat. Microenvironments are often used for this purpose, e.g. hiding in alley trashcans (*The Waltons*) and in the doorways of dimly-lit urban streets (*Six Million Dollar Man*) as well as losing oneself in downtown traffic to shake off the police (*The Rookies*). Some imaginative hiding places included a tennis court, a filing cabinet, an underwater algae forest, the inside of a dam, and a clubhouse.

The clubhouse represents a subcategory of this major thematic element, since it is not only

a refuge where two boys hide their sea-monster friend, but it is also a private place where the boys can meet and plan in secrecy without fear of intrusion from the adult world (*Sigmund and the Sea Monsters*). Interior settings are not the only places where people seek and find privacy: "Let's go outside where we can be private," says a character in *Little House on the Prairie*. Closely related to private places are settings for confidential talks, which range from conventional interiors, e.g. bedrooms, to the front steps of houses and schools, and very often to natural settings, e.g. gardens, ponds, waterfalls, dirt roads, and trees.

Another major theme that overlaps considerably with the concept of environment as refuge is the theme of running away. This category includes not only the characters who are fleeing from the police in various episodes of *The Rookies*, but also situations where children or animals run from a place of security and close familial ties to strange and unfamiliar places that demand rather complex adaptive strategies. Joe is the fugitive dog in the series *Run, Joe, Run* who is erroneously thought to be dangerous and must constantly flee his pursuers in alien terrain. In an episode of *The Waltons*, When Jim-Bob, the youngest boy in the family, feels ignored and misunderstood, he runs away from his rural home to the next town, where he attempts to buy a train ticket for "Japan or Washington". One segment of *Jeannie* features Babu, a genie, who thinking himself jinxed, runs away from his suburban home to a more rural setting where he encounters some unfriendly strangers. In all instances the runaways are sought by concerned family and friends and entreated to return home. Going home is, of course, the thematic counterpart to running away or getting lost — and the warm and supportive qualities of home are strong underlying themes in at least three series: the title of *Little House on the Prairie* physically describes the locus of the Ingals' homestead; Walton's Mt., Va. is where *The Waltons* live and work (most significant action takes place in and around the house in these two cases); and the sole objective of the family stranded in *Land of the Lost* is to return home. In each of these programs, the physical environment clearly shapes the lifestyle pictured.

Frightening and dangerous places often figure into the plots to create an atmosphere of

tension, adventure, and excitement and provide a context for displays of bravery and risk-taking, hence the final theme focuses on demonstrations of environmental competence. In only three episodes are children actively dealing with their fears and coping realistically with situational crises. Holly, the young girl in *Land of the Lost*, and Chad, a blind boy in one episode of *Shazam*, manage to rise above their handicaps and the overprotection of well-meaning adults by rescuing others whose lives are endangered. Most of problems faced by television characters, however, are dealt with by adults — many of whom are also equipped with super powers. In fact, out of 29 episodes, 10 featured characters with superhuman powers — none of them children. Implications of these findings for the development of environmental competence in children will be discussed in the next section.

## DISCUSSION AND FUTURE RESEARCH

These results reflect general social attitudes about children and current programming theories as well as the different potentials for environmental learning inherent in the formats of evening and Saturday morning programs. One convention that appeared consistently is the placement of children in natural settings. Perhaps our cultural mythology perpetuates the notion of a link between the characteristics stereotypically assigned to children—simplicity, openness and uninhibited behavior—and the undomesticated outdoors. Our society has conventionally thought that the “natural” environment is the most suitable arena for a child’s play and exploration and that the child should therefore be happiest in such a context. The city is seen as inimical to children in the harshness of its build environment. Restrictions are imposed by adults because of perceived physical and social dangers. In the television programs we monitored, we saw no children demonstrating skills or coping with problems in urban settings, although other characters that children may or may not identify with (animals and older adolescents) were occasionally seen acting in urban scenes.

The fact that children are pictured so rarely in situations where they can demonstrate problem-solving ability in a realistic (non-

magical) way deprives children of opportunities for identifying with and internalizing the image of a competent child. Super power and technological intervention as the usual means of problem-solving on these TV programs may reinforce the child’s notion of finding magical rather than skill- or initiative-derived solutions to ecological problems.

Such conventions about a child’s relationship to the environment and the expectations of his performance within that environment emerge fairly consistently in both Saturday and prime-time programs. The differences between the two are largely in the kinds of environments shown and the kinds of action that take place. These differences probably reflect the anticipated differences in viewing audiences.

Exterior environments provide the potential for a great variety and quantity of action. It is known that action is a prime ingredient in holding children’s attention to the screen (*Liebert, Neale, and Davidson 1973*). On Saturday morning, mythical or remote exterior environments were often settings for that action and adventure. In prime-time shows, most of the fast-paced action sequences again take place outside, but verbal dramatic developments, perhaps of more interest to adults, are usually set indoors.

Since children do watch both Saturday morning and evening programs, the differences in settings may communicate conflicting images of the wider world beyond home. On Saturday morning, events that are exciting, adventurous, or challenging usually happen in exotic foreign places, in wild uninhabited places, or at least in places outside the home. While the situations that develop may or may not be realistic, they present an intriguing view of a world larger than that experienced by most children, or even most adults.

The evening programs we viewed split into an interesting dichotomy. On the one hand, there was a melange of violent, criminal and/or institutional processes generated in an urbanized world in which men were the main participants. On the other hand, programs featuring family life are set in the past and depict ‘home’ as a secure rural haven. Do children infer from this that the city is a frightening, dangerous place unsuitable for children and a secure home is only a remnant of our rural past?

Furthermore, what notions of lifestyle are

children absorbing? Several Saturday morning shows support the American romance of nomadic or highly mobile lifestyles inviting exploration of unknown environments. Some evening programs, on the other hand, reinforce the value of a stable, rooted home environment. The presentation of lifestyles in the context of certain environments, e.g., conventional suburban settings or nostalgic rural settings, may contribute to idealized images and expectations of how one "should" live and of options other people enjoy. It is possible that the comparison of his or her own lifestyle with those shown on television may contribute not only to the child's learning about the world but also, by reflection, to an emerging self-definition.

We should note that although Saturday morning shows often depicted more unusual environments, the "created" (drawn or modeled) settings were (with a few exceptions) highly stereotypic, abstracted representations of the suggested environments. If these are informing a child's image of parts of the world, it is on a highly generalized level. The "live" locations of evening programs, on the other hand, provide incidental information about more ordinary environments in much greater detail. For many young children, even these "ordinary" environments are different from anything they have experienced, and thus may be a source of environmental learning.

Although the settings of the evening programs were more detailed and realistic than most Saturday morning settings, landscapes were often viewed in glimpses. The scenes were short, and the screen was filled almost entirely by close-ups of people, car interiors, etc. Landscapes were often more suggested than shown, seen in fragments out of car windows, or blurred by panning or a shallow depth of field. One reason that so much of the landscape was seen in glimpses and fragments was the great amount of time spent in vehicles and on the streets. We are reminded of recent discussions of landscapes seen from moving vehicles and the educational and orienting functions that could be served in real urban landscapes by the different perspectives available in a trip through the city (*Appleyard, Lynch, and Myer 1964; Carr and Lynch 1968*).

In a sense children are carried as passively through television landscapes as they are in vehicles, but the images on television are even

less connected and the scales of environments change much more abruptly in adjacent scenes of TV programs. The choice of perspective is also not available to the viewer of a television scene as it is to the car passenger. Learning to integrate different scales and perspectives of environment-landscape into a coherent image is a cognitive task which children achieve with varying levels of competence at different stages of development (*Hart and Moore 1973*). Future research should investigate the child's ability to integrate individual scene pieces into a unified image of a landscape based on the context of the program and to identify a type of landscape, as well as its region or place in the world.

This study has approached only one phase of the communications model, the message content. The other two facets, the choices and intentions of the producers of the message and the manner in which the information is assimilated and incorporated by child viewers, must also be investigated to elucidate the process of children's environmental learning through television. This conceptual and methodological approach is equally applicable to other popular media, e.g. movies, comic books, advertising, music, etc.

It is our hope that this presentation will spark an interest in media-based environmental learning. Decisions about environments are made by and for people who environmental attitudes and values have been shaped not only through formal education and direct experience but also through indirect and informal resources.

#### Acknowledgments

We thank Ronald R. Erickson of the City University of New York for his invaluable technical and conceptual assistance on this project.

#### LITERATURE CITED

- Appleyard, Donald, Kevin Lynch, and John R. Myer.  
1964. *The view from the road*. M.I.T. Press, Cambridge, Mass.
- Bettelheim, Bruno.  
1960. *The informed heart. Autonomy in a mass age*. Free Press, Glencoe, Ill.
- Carr, Stephen, and Kevin Lynch.  
1968. *Where learning happens*. *Daedalus* 97:1277-1291
- Hart, Roger, and Gary Moore.  
1973. *The development of spatial cognition: a review*. In R. Downs and D. Stea (eds.), *Image and Environment*. Aldine Publishing Co., Chicago.
- Leibert, Robert M., John M. Neale, and Emily S. Davidson.  
1973. *The early window: effects of TV on children and youth*. Pergamon Press, Inc., New York.



PHOTO BY WALT BLAIR

“Observers of children have long been aware of how children use make-believe play to cope with traumatic events in their lives” - Anne Robertson

# A Method for Observing Young Children's Make-Believe Play

by ANNE ROBERTSON, *Department of Psychology, Yale University.*

---

**ABSTRACT.** The influence of toy "realisticness" on the make-believe play of 20- and 26-month old boys and girls was studied by recording their play behaviors when they were presented with specific toys and play suggestions. Results indicate that age changes in make-believe play with the less realistic toys reflect increased competence in symbolic transformation, whereas age changes in play with the more realistic toys reflect social learning, which may differ for boys and girls.

---

**T**HE EXPERIMENTAL METHOD described in this paper was used in a study of the effect of age, sex, and toy type on the make-believe play of children 20 and 26 months old. The children were observed playing in their most familiar and natural setting—at home with their mothers watching. While this study focused on the early development of make-believe play, aspects of its experimental design and methodology might well be used in investigating the more general question of how different settings affect behavior. One could, for instance, examine which types of play and interaction were most characteristic of children using different areas of a camp or playground.

The theoretical basis for this research comes largely from the work of Jean Piaget, the Swiss developmental psychologist. Piaget (1951) has long been concerned with the child's cognitive development and regards the varying types of play one observes in children of different ages as reflections of the increasing complexity of the child's intellectual ability. Piaget's developmental sequence of play included three types—practice play, symbolic play, and games with rules. Although these three types of play coexist in older children and adults, they first appear and predominate during particular stages of the child's cognitive growth. In the first 18 months of life a child engages primarily in practice play,

in which pleasure is found in repeating and solidifying a skill which has already been mastered—for example, a baby playing pat-a-cake. Examples of this sort of play in adulthood would include playing a musical instrument or riding a bicycle for pleasure.

At about 18 months the child becomes capable of what Piaget calls symbolic thought. This development is reflected both in the growth of language and in the appearance of make-believe play. In make-believe play the child is able to shape the world to his fantasy temporarily, rather than having to shape his behavior and thought to the demands and constraints of the environment. With the development of make-believe play a child can use behaviors he has already mastered for his own purposes. A 1-year-old must concentrate on making a stack of blocks just stand up; a 3-year-old is able to use his building skill to create an imagined airport or house.

Games with rules are the third form of play described by Piaget. These games predominate from around 6 or 7 years of age into adulthood. This type of play includes sports and board games, in which the player accepts a set of arbitrary rules and shapes his behavior to them.

A number of researchers view make-believe play as significant both to a child's cognitive growth and his emotional growth. Studies done

by Sara Smilansky (1968) of Israel suggest that a complex form of make-believe play, which she calls "sociodramatic play", may be important for later success in school. Sociodramatic play is the sort of role-playing engaged in by 4- and 5-year-olds around a theme, such as playing house or cowboys and Indians. Since such play involves a degree of abstract thinking, and is directed by the child's imagination rather than by the demands of the environment, it may provide necessary training for the abstract, internal thought processes needed in reading and problem-solving.

Observers of children have long been aware of how children use make-believe play to cope with traumatic events in their lives. Often a child will take an active role in play that parallels a situation in which he was passive; for example, a child might play doctor and pretend to give her doll a shot the day after she had received a shot herself. Further, fantasy play is a primary tool in psychotherapy with young children. Through a child's play the therapist may come to understand conflicts that are interfering with the child's normal development. Resolutions may also be achieved through play.

My study investigated the effect of how realistic the toys were on the make-believe play of 20- and 26-month-olds. A brief description of early make-believe play will help clarify why this may be an important factor. Early in the development of make-believe play a child may pretend to drink from an empty cup. He tips head back to drain the last drops of the imagined liquid, then smacks his lips with pleasure. Sometime later he may pretend to drink from a shell or closed fist and perhaps offer a sip to his teddy bear. In these sequences of play, the child apparently disconnects a well-established motor activity (such as drinking) from its customary function (consumption) and context (with a full cup). Also, as the child matures, he has less and less need for realistic props to support his attempts at make-believe. At first he pretends to drink with an empty cup, but later with just a closed fist.

The relationship of the amount of structure or realisticness provided by an object to make-believe play has interested other researchers (Markey 1935; Fein 1973, 1975). Although 4- and 5-year-olds are able to pretend with few or no props (pretending to be Batman just by claiming to be and running around), realistic props

may be necessary to the make-believe play of younger children. For older children with well-developed imaginative capacities, very specific realistic props may even restrict play.

Piaget's view of the process of symbolic or make-believe play is useful in understanding the relationship of materials to it. Piaget speaks of "symbolic transformations"; he means by this that in pretending to drink from an empty cup a young child must symbolically transform the empty cup into a full one. In pretending to drink from a wooden block, though, an additional transformation is required: imagining the block to be a cup. So, more symbolic work seems to be required from the child by less structured objects. While this symbolic work may be easy and fun for an older child, it may be impossible for a younger child without the cues provided by realistic objects. The implication is that with cognitive growth, pretend play may become less dependent on the physical presence of highly realistic or prototypical objects such as cuplike cups, trucklike trucks and babylike dolls.

I studied whether the relation between the structuredness of materials and make-believe play varies as a function of age by presenting 20- and 26-month-old girls and boys with materials that differed in their similarity to real cups, trucks, and dolls. Sex differences in early make-believe play were also examined in this study, but those results will only be mentioned briefly.

## METHOD

The subjects were 28 Caucasian boys and girls, chosen randomly from hospital birth records. Restrictions on the sample were that no child have more than one sibling and that the parents live together. Most of the children came from middle-class homes.

Each child was observed twice at home with his or her mother present. Each session consisted of three distinct segments—two play episodes of 10 minutes each (in which the procedure was identical but the toys were different), separated by approximately 40 minutes of intervening tasks which were the same for all children. Two visits were approximately 2 weeks apart and lasted about an hour. Since each child was observed twice with each of the two toy sets (toy sets A and B were presented at each visit but not in the same order), the experimental design was one of

repeated measures in which each child served as his own control. Using two visits also made it possible to assess the effect of the unfamiliarity of the experimental situation and the experimenters. Since play is one of the first behaviors to drop out when a child is anxious or uncomfortable, it is essential that the child become familiar with the experimenters and experimental procedures.

*Materials.* There were two toy sets, each containing 17 objects, 4 of which were identical in both sets. Examples of the object categories were: cup, spoon, bowl, doll, truck, crib, phone. The highly realistic or "highly prototypical" (HP) toy set contained 13 objects which were either familiar household things or toys (crib, telephone, truck). The doll was a detailed representation of a baby. The 13 objects in the "less prototypical" (LP) set were roughly matched by function (things for drinking, for eating, for sleeping) but lacked the detail of their highly prototypical counterparts; e.g., a bed and a truck were matched to two boxes of different sizes, the coffee mug was matched to a plastic container of roughly the same size, the toy telephone was matched by a toilet-paper tube balanced on two blocks, and the baby doll was matched to a stuffed cloth figure.

*Experimenters.* Two female experimenters visited the home. One experimenter (*E1*) presented the toys to the child and administered the intervening tasks, while the other (*E2*) recorded the child's behavior.

*Warm-up* The initial 5 to 10 minutes of each session were spent in helping the child feel at ease with the experimenters. Either *E1* or the child's mother showed the child a picture book while the other adults chatted. By the end of 10 minutes *E1* took the first set of toys from the suitcase, arranged them on the floor in a predetermined way and invited the child to play with them.

*Play episodes.* Each 10-minute play episode began with 2 minutes of free play during which *E1* sat near the child but did not participate in his play. During the remaining 8 minutes of the episode *E1* made five play suggestions at specified time intervals and in a fixed sequence.

When making a play suggestion, *E1* indicated or brought into view the appropriate toys for that particular play theme; for example *E1* indicated the toy truck while saying, "Dolly wants to go for a ride; please take dolly for a ride." If

the child did not respond to the first verbal suggestion, it was repeated approximately 30 seconds later. Beyond this, however, the child was not coaxed into following *E1*'s requests.

During each play episode, *E2* continuously described the child's activities into a tape recorder. A signal was recorded on the tape every 10 seconds. Even though there was a lag between the occurrence of an activity and the oral description of it, the relative duration and sequence were preserved. The language used to record the child's behavior consisted of about 50 core verbs which described the child's use of objects (e.g., pushes truck, fingers doll, claps blocks) and his interactions with other people involving objects (e.g., gives mother doll, shows *E1* bottle). All of the child's behavior during the play episodes was recorded and transcribed, but only those behaviors subsequently coded as "pretends" will be considered here.

Actions, but not verbal labels, were scored "pretends" if they contained an element of make-believe. For example, a child's going through the motions of drinking from an empty cup was scored "pretend", but his pointing to an empty cup and saying "coffee" was not. A child's behaviors were coded "pretend" if they: (a) involved treating something inanimate as though it were animate (feeding a doll); (b) resembled normal, functional activities but occurred in the absence of necessary materials (drinking from an empty bottle); (c) were not carried through to their usual outcome (putting on a hat, but not going outside; closing eyes, but not sleeping); or (d) were typically performed by someone else (brushing hair, dialing a telephone).

Observation reliabilities were determined from tape recorded observations of filmed play sequences. Observer agreement for object contact was 82 percent, for activity it was 80 percent and for coding a behavior "pretend" it was 87 percent.

*Measures.* The four taped play episodes for each child were transcribed, the "pretends" coded and the following measures compiled for each play episode:

1) Pretend Frequency was the sum of all those behaviors coded "pretend" within a 10-minute observation period.

2) Variation of Pretend was the number of pretend activities which were unique in action, objects, or relevant vocalizations. For example, stirring with a spoon in a red cup five times was

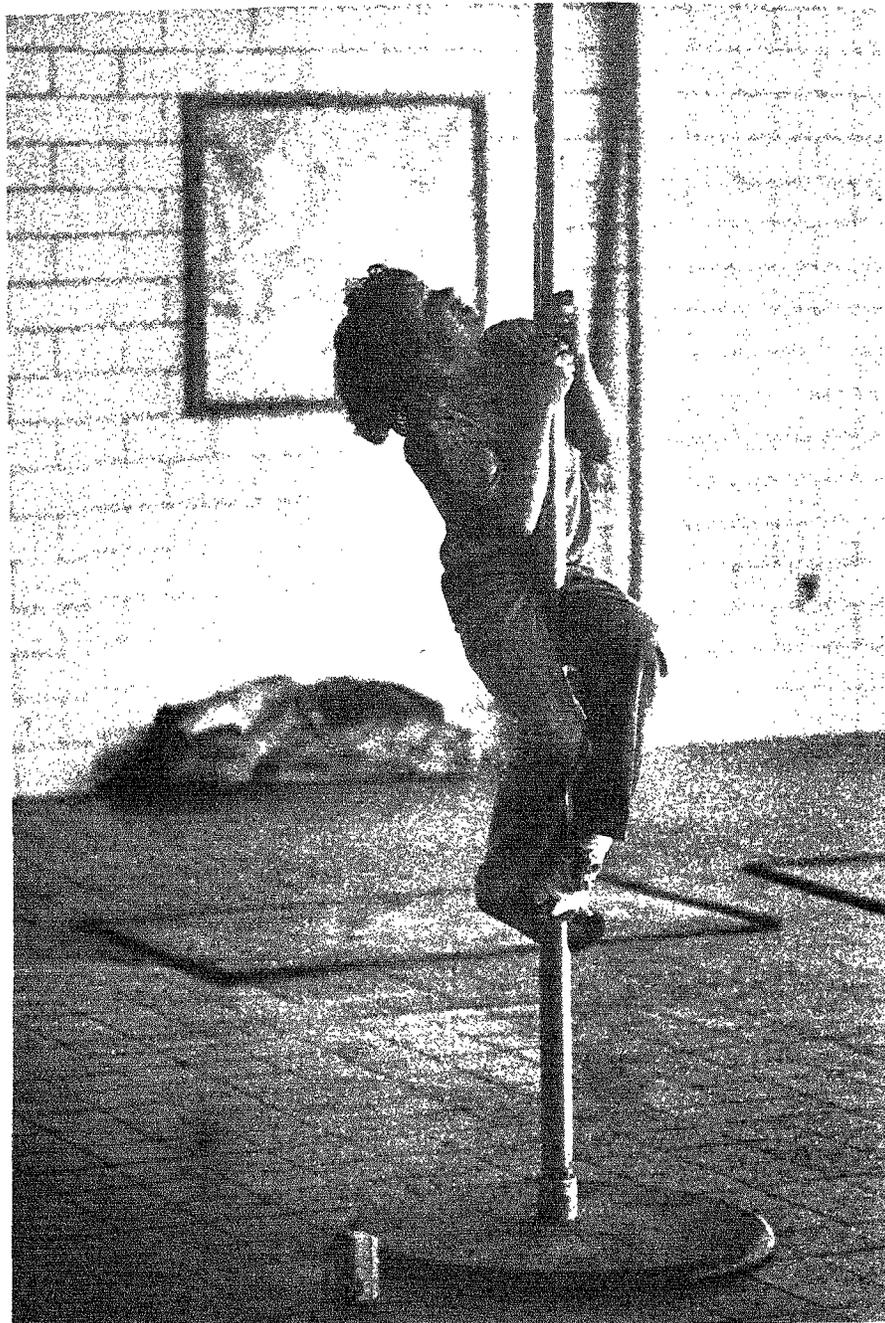


PHOTO BY WALT BLAIR

"He is full of potentialities, visions of the future, and questions concerning his fulfillment of himself"  
- A. Laverne Dickerson

# The Youth Conservation Corps and Adolescents' Self-concept

by A. LAVERNE DICKERSON, *Social Science Analyst, USDA Forest Service, Northeastern Forest Experiment Station.*

---

**ABSTRACT.** Four dimensions of self-concept were measured at the beginning and the end of the Youth Conservation Corps's 1971 pilot program. The overall evaluation of the program had found no changes in self-concept, but factor analysis identified some significant differences. The campers' perceptions of their adequacy decreased, while their perceptions of their personal worth and social skills increased. These changes differed with the sex, age, and family income of the participants and with the type, location, sponsoring agency, and management style of the camps.

---

## INTRODUCTION

IT IS VERY IMPORTANT in the development and management of a Federal social program that a special effort be made to assess its success and failures. We need to learn answers to such questions as: Were the program's objectives stated clearly? Did the program meet the needs of its participants and society?

The overall evaluation of the 1971 Youth Conservation Corps pilot program has been published (*Marans, Driver, and Scott 1972*). One of the recommendations made was a closer look at the dimensions of self-concept. This has been done (*Dickerson 1973*) and some of the findings are presented here with the hope that those interested in children, nature, and the urban environment will find in them some insights, hunches, or ideas.

## BACKGROUND

The Youth Conservation Corps was established in the Departments of Agriculture and Interior when the 91st Congress approved Public Law 91-378 on August 13, 1970. During the summer of 1971, approximately 2,400 youth of both sexes, ages 15 to 18, from all social, economic, and racial groups participated in the YCC program. The camps were located in 38

states and the District of Columbia. The sponsoring agencies and the number of camps they were responsible for were: In the Department of the Interior, Bureau of Indian Affairs, 3; Bureau of Land Management, 2; Bureau of Reclamation, 4; Bureau of Sport Fisheries and Wildlife, 12; National Park Service, 9; and in the Department of Agriculture, Forest Service, 34. There were 33 coed camps, 8 female camps, and 23 male camps. Fourteen of the camps were non-residential. Thirty-eight residential camps were open 7 days a week and 12 residential camps operated 5 days a week. Duration of camp sessions and the number of camps with each length of session were: 4 weeks: 6, 7 weeks: 4, 8 weeks: 4, and 9 to 12 weeks: 5.

Eight objectives, originating from Section 1 of Public Law 91-378, were adopted by the Departments of Agriculture and Interior at the beginning of the program: Two concerned work accomplishment, two environmental learning, and four personal and social development. A detailed description of this cooperative effort may be found elsewhere (*Marans, Driver, and Scott 1972; Dickerson 1973*).

## SELF-CONCEPT

What is self-concept? There is no unanimity

about the meaning of the term or its theoretical foundation. The interrelatedness of self as both object and process is discussed in the writings of many. (For a detailed discussion, see *Marans, Driver, and Scott 1972*.) Here, self-concept is viewed as the way of looking at and thinking about those aspects of his person that the individual perceives and toward which he develops opinions and attitudes (*Dewey and Humber 1966*). The adolescent is at the stage of development where he is deeply concerned with such questions as: Who am I? What will I become? What kind of work will I do? Why am I having problems with my friends? In short, feelings, thoughts, and behavior at this stage are mainly determined by concept of self. "Whatever the self is, it becomes a center, an anchorage point, a standard of comparison, an ultimate real. Inevitably, it takes place as a supreme value." (*Murphy 1947: 536*).

Rapid physical changes accompanied by internal physiological and psychological changes intensify the adolescent's concern with self, regardless of his socioeconomic or cultural background. And if these changes are not enough, ambiguities in our society confound his concept of self. One moment he is treated like a child; the next moment he is expected to act as an adult. His social duties and responsibilities may be those of an adult while his social rights and privileges may be those of a child. Criminal and violent behavior abounds, yet we speak of morals and ethics. All of these add to the adolescent's confusion about himself. He is full of potentialities, visions of the future, and questions concerning his fulfillment of himself. This is an interesting time of life at which to study self-concept; body changes and important life decisions are intensifying the awareness of and concern with the concept of self.

I believe that experience with natural environments can help the adolescent improve his concept of himself.

Three of the four personal and social development objectives of the YCC program formed the basis for selecting the dimensions of self-concept to be examined in this research:

1. To acquire increased self-dignity.
2. To acquire increased self-discipline.
3. To better work with and relate to peers and adults.

Self-dignity, self-discipline, and relationships with peers and adults are important objectives,

especially for an age group whose attempts at social differentiation and integration appear to be directed by such value themes as acceptance, self-identification, and intimacy (*Gordon 1971: 832*). Searching the literature for instruments applicable to this study, we became aware that most researchers on self-concept found these dimensions of personality to be relatively basic and therefore stable over time. (*Bachman 1970, Brownfain 1952, Taylor 1953, Engel 1956*). Therefore, if any changes took place during this study, they would be quite significant.

There are four ways to measure changes in self-dignity, self-discipline, and relationships with peers and adults. The first identifies and measures observable behavioral responses related to these attributes; the second measures the individual's perceptions of himself; the third measures other peoples' perceptions of the individual; and the fourth measures some combination of the first three. Because time, money, and personnel were limited, the second method was selected—measuring what the individual thinks of himself, at the beginning and at the end of the YCC Experience.

The following are working definitions of the dimensions of self-concept:

*Self-esteem* is "an evaluation which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, significant, successful, and worthy. In short, self-esteem is a *personal* judgment of the worthiness that is expressed in the attitudes the individual holds toward himself." (*Coopersmith 1967: 4-5*).

*Self-development* is the degree to which a person had developed his positively valued abilities and potentialities into skills and competencies. (*French and Kahn 1962*).

*Social skills: peers* refers to the individual's perception and evaluation of his acceptance by others of his own age.

*Social skills: adults* refers to the individual's perception and evaluation of the worth of adults, and his understanding of and his acceptance by them.

To measure these dimensions, I asked YCC participants to respond to 45 statements at the beginning and at the end of their experience. Five responses were offered, ranging from "almost always true" to "never true". Numbers

from 1 to 5 were assigned to each of the responses in such a way that a higher score would reflect more positive self-perception. The total score on each of the five dimensions of self-concept was the sum of the scores on each item in the dimension. For example, if a dimension was measured by seven items, the total score would range from 7 to 35. An explanation of how these instruments were designed can be found in *Youth and the Environment (Marans, Driver, and Scott 1972)*.

## ANALYSIS

Factor analysis of responses to the 45 statements suggested the following dimensions of self-concept:

*Personal worth* is a way of looking at and thinking about valued personal abilities and potentials, ones the individual perceives and toward which he develops opinions and attitudes that contribute to his feelings of self-worth (includes 21 statements).

*Adequacy* is a way of looking at and thinking about valued personal abilities and potentials, ones the individual perceives and toward which he develops opinions and attitudes by comparing them with certain standards he has set for himself (six statements).

*Social skills: adults* and *Social skills: peers* retained the definitions presented earlier (six and seven statements respectively).

Research has shown that an organization's style of management and its attention to the personal values of its members influence their performance and their satisfaction with the organization (Likert 1967). Therefore, the final questionnaire included several questions about camp administration and organization. A single index was constructed, the Participation-Interpersonal Relations Index (PIRI) (Marans, Driver, and Scott 1972) to combine adolescents' perceptions of (1) the extent to which they participated in governing their camp, and (2) the degree of friendliness, confidence, trust, willingness to communicate, and supportiveness shown by the camp's staff.

Twelve characteristics of the adolescent and the camp were considered. Adolescent characteristics were sex, age, race, family income, and place of residence. Family income was categorized by the adolescent as under \$5,000; \$5,000 to \$9,999; \$10,000 to 14,999; or \$15,000

and over. Each participant categorized his place of residence as urban (cities of more than 100,000), suburban (small cities or towns of less than 100,000), or rural. Camp characteristics were sponsoring agency, coed or non-coed, residential or nonresidential, size, length of session, region where located, and PIRI.

With 12 independent variables (adolescent and camp characteristics) and 4 dependent variables (self-concept dimensions), some of the cells in the matrix had too few responses for multivariate analysis. Simple analysis of covariance was used instead.

## RESULTS

Five characteristics of the subjects and seven characteristics of the camps were expected to correlate with variations in adolescents' self-concepts. F-ratios, the results of analysis of covariance, were computed for the four dimensions of self-concept. Significant relationships are presented in table 1.

Scores on the *personal worth* scale were correlated with age, sponsoring agency, session length, and PIRI. *Adequacy* scores showed significant differences on one adolescent characteristic and four camp characteristics: family income, residential or nonresidential camp, sponsoring agency, region, and session length. Three characteristics were significantly related to differences in scores on social skills: adults: session length, PIRI, and residential or nonresidential camp. *Social skills: peers* scores revealed significant differences for the variables sex, coed or non-coed camp, sponsoring agency, session length, and PIRI.

The overall evaluation of the YCC program (Marans, Driver, and Scott 1972) found no change in self-concept as a result of the experience. But as shown above, the factor analysis that collapsed five self-concept dimensions into four identified some significant differences among both adolescent and camp characteristics. A look at the subgroups of characteristics that showed significant differences can give us some clues to the variation.

### Personal Worth

Participants at Forest Service camps showed the most growth in feelings of personal worth (see table 2). Decreases were recorded at camps

**Table 1.—Significance of relationships between characteristics of camper and camp, and four aspects of self-concept (F-Ratio)**

| Characteristic             | Personal worth | Adequacy | Social skills: adults | Social skills: peers |
|----------------------------|----------------|----------|-----------------------|----------------------|
| Camper                     |                |          |                       |                      |
| Sex                        |                |          |                       | **                   |
| Age                        | *              |          |                       |                      |
| Race                       |                |          |                       |                      |
| Size of place              |                |          |                       |                      |
| Family income              |                | *        |                       |                      |
| Camp                       |                |          |                       |                      |
| Sponsoring agency          | **             | **       |                       | *                    |
| Coed/non-coed              |                |          |                       | **                   |
| Session length             | *              | **       | *                     | **                   |
| Residential/nonresidential |                | ***      | ***                   |                      |
| Camp size                  |                |          |                       |                      |
| PIRI                       | **             |          | *                     | **                   |
| Camp region                |                | **       |                       |                      |

\*p ≥ .05  
 \*\*p ≥ .01  
 \*\*\*p ≥ .001

**Table 2.—Scores on “personal worth” before and after camp, by age of camper and camp variables**

| Variable                             | Before |        | After  |        | Difference | N    |
|--------------------------------------|--------|--------|--------|--------|------------|------|
|                                      | Mean   | SD     | Mean   | SD     |            |      |
| Age                                  |        |        |        |        |            |      |
| 15                                   | 81.075 | 10.515 | 80.335 | 11.043 | -0.740     | 307  |
| 16                                   | 81.624 | 10.085 | 81.921 | 10.935 | 0.297      | 391  |
| 17                                   | 81.506 | 9.846  | 82.328 | 10.047 | 0.822      | 326  |
| 18                                   | 82.202 | 8.230  | 82.689 | 9.086  | 0.397      | 106  |
| Sponsoring agency                    |        |        |        |        |            |      |
| Bureau of Indian Affairs             | 76.969 | 10.531 | 75.750 | 11.648 | -1.219     | 56   |
| Bureau of Land Management            | 82.265 | 7.856  | 81.676 | 10.057 | -0.589     | 34   |
| Bureau of Reclamation                | 81.917 | 9.546  | 82.531 | 8.762  | 0.614      | 96   |
| Bureau of Sport, Fisheries, Wildlife | 79.984 | 10.024 | 79.197 | 10.546 | -0.787     | 127  |
| Forest Service                       | 81.880 | 9.883  | 82.538 | 10.387 | 0.658      | 692  |
| National Park Service                | 82.592 | 10.406 | 81.456 | 11.447 | -1.136     | 125  |
| Session length                       |        |        |        |        |            |      |
| 4 weeks                              | 82.193 | 9.432  | 83.467 | 10.023 | 1.274      | 212  |
| 8 weeks                              | 81.388 | 10.081 | 81.293 | 10.593 | -0.095     | 836  |
| 12 weeks                             | 80.102 | 10.230 | 81.000 | 11.391 | 0.898      | 82   |
| PIRI                                 |        |        |        |        |            |      |
| Low                                  | 80.853 | 10.350 | 79.620 | 11.137 | -1.233     | 292  |
| Medium                               | 81.328 | 10.067 | 81.803 | 10.609 | 0.475      | 543  |
| High                                 | 82.471 | 9.354  | 83.492 | 9.571  | 1.021      | 295  |
| Overall average                      | 81.504 | 9.971  | 81.680 | 10.575 | 0.176      | 1130 |

run by four agencies; the greatest decrease was at Bureau of Indian Affairs camps. Could different policies and procedures have affected these scores?

Decreases in personal worth felt by the 15-year-old participants could be the result of immaturity. Older participants usually performed better in work, recreation, and social situations. These successes seem to have produced feelings

of pride and self-worth for many of the 17-year-olds. Could it be that the 15-year-olds judged themselves by the values of the entire group and that their judgments reflected their low status in that group?

The participants in 4-week camps showed a greater increase in *personal worth* scores than participants in either shorter or longer camps. Although this has not been reported previously

in the literature, I have observed that campers' apathy seems to increase after 4 weeks in camp.

The greatest significant difference for *personal worth* was associated with PIRI.

### Adequacy

Most of the changes in *adequacy* scores were negative (see table 3). Could these changes reflect unrealistic expectations generated by the selection procedures? Perhaps the thrill of being chosen (often as the only representative of a school) elevated participants and encouraged them to formulate plans to solve major environmental problems. Even though they developed and implemented plans to solve problems and completed many important projects, the reality was that many things still needed to be accomplished and some problems were too complex for quick solutions. This speculation is based on personal conversations with participants in northeastern and northwestern camps. The general theme was that much more needed to be done to improve

and maintain the natural environment than had been anticipated.

### Social skills: adults

The participants in 12-week camps showed the greatest increase in this dimension. It seems that time enabled them to understand the adults in their environment better (see table 4.)

The closeness of the nonresident camp staff to the participants while they were trying to overcome obstacles seemed to influence the participants' perceptions of adult relationships. Medium participation in camp governance and involvement in planning and problem solving (PIRI) provided the best climate for changes in adult relationships.

### Social skills: peers

There was a significant increase in girls' perceptions of *social skills: peers* (see table 5). Evidently girls are more concerned than boys with their relations with peers. Rosenberg's study verified this finding.

**Table 3.—Scores on "adequacy" before and after camp, by family income and camp variables**

| Variable                             | Before |       | After  |       | Difference | N    |
|--------------------------------------|--------|-------|--------|-------|------------|------|
|                                      | Mean   | SD    | Mean   | SD    |            |      |
| Family income                        |        |       |        |       |            |      |
| Under \$5,000                        | 21.371 | 3.574 | 21.067 | 3.685 | -0.304     | 105  |
| \$5,000-\$9,999                      | 22.224 | 3.310 | 21.619 | 3.626 | -0.605     | 357  |
| \$10,000-\$14,999                    | 22.558 | 3.080 | 22.391 | 3.198 | -0.167     | 353  |
| \$15,000 and over                    | 22.337 | 3.228 | 21.971 | 3.421 | -0.366     | 315  |
| Sponsoring agency                    |        |       |        |       |            |      |
| Bureau of Indian Affairs             | 20.714 | 3.489 | 19.893 | 3.535 | -0.821     | 52   |
| Bureau of Land Management            | 23.059 | 2.741 | 22.176 | 3.546 | -0.883     | 34   |
| Bureau of Reclamation                | 21.948 | 3.537 | 22.656 | 3.340 | 0.708      | 96   |
| Bureau of Sports Fisheries, Wildlife | 22.291 | 3.239 | 21.520 | 3.527 | -0.771     | 127  |
| Forest Service                       | 22.289 | 3.160 | 22.176 | 3.202 | -0.113     | 692  |
| National Park Service                | 22.968 | 3.360 | 21.064 | 4.304 | -1.904     | 125  |
| Session length                       |        |       |        |       |            |      |
| 4 weeks                              | 21.741 | 3.314 | 21.811 | 3.037 | 0.070      | 212  |
| 8 weeks                              | 22.353 | 3.241 | 22.600 | 3.471 | -0.247     | 836  |
| 12 weeks                             | 22.939 | 3.077 | 21.207 | 4.305 | -1.732     | 82   |
| Resident/non-resident                |        |       |        |       |            |      |
| Residential                          | 22.170 | 3.277 | 21.900 | 3.378 | -0.270     | 943  |
| Nonresidential                       | 22.840 | 3.088 | 21.941 | 3.886 | -0.899     | 187  |
| Camp region                          |        |       |        |       |            |      |
| North                                | 22.131 | 3.343 | 22.677 | 3.360 | -0.546     | 390  |
| South                                | 22.515 | 3.481 | 21.611 | 4.012 | -0.904     | 262  |
| West                                 | 22.274 | 3.044 | 22.257 | 3.192 | -0.017     | 478  |
| Overall average                      | 22.281 | 3.254 | 21.907 | 3.465 | -0.374     | 1130 |

**Table 4.—Scores on “social skills: adults” before and after camp, by camp variables.**

| Variable             | Before |       | After  |       | Difference | N    |
|----------------------|--------|-------|--------|-------|------------|------|
|                      | Mean   | SD    | Mean   | SD    |            |      |
| Session length       |        |       |        |       |            |      |
| 4 weeks              | 20.316 | 3.348 | 20.670 | 3.209 | 0.354      | 212  |
| 8 weeks              | 20.367 | 3.670 | 20.695 | 3.757 | 0.328      | 836  |
| 12 weeks             | 19.829 | 3.845 | 21.183 | 4.292 | 1.354      | 82   |
| Resident/nonresident |        |       |        |       |            |      |
| Residential          | 20.403 | 3.635 | 20.749 | 3.675 | 0.346      | 943  |
| Nonresidential       | 19.893 | 3.550 | 20.610 | 3.843 | 0.717      | 187  |
| PIRI                 |        |       |        |       |            |      |
| Low                  | 20.363 | 3.792 | 20.423 | 3.868 | 0.065      | 292  |
| Medium               | 20.252 | 3.652 | 20.877 | 3.876 | 0.625      | 543  |
| High                 | 20.397 | 3.408 | 20.742 | 3.159 | 0.345      | 295  |
| Overall average      | 20.319 | 3.624 | 20.726 | 3.702 | 0.407      | 1130 |

**Table 5.—Scores on “social skills: peers” before and after camp, by sex and camp variables**

| Variable                             | Pre-test |       | Post-test |       | Difference | N    |
|--------------------------------------|----------|-------|-----------|-------|------------|------|
|                                      | Mean     | SD    | Mean      | SD    |            |      |
| Sex                                  |          |       |           |       |            |      |
| Boys                                 | 26.361   | 4.104 | 26.344    | 4.104 | -0.017     | 687  |
| Girls                                | 26.718   | 4.039 | 27.097    | 4.090 | 0.379      | 443  |
| Sponsoring agency                    |          |       |           |       |            |      |
| Bureau of Indian Affairs             | 26.250   | 4.060 | 25.911    | 3.604 | -0.339     | 56   |
| Bureau of Land Management            | 26.412   | 3.831 | 27.297    | 4.509 | 0.882      | 34   |
| Bureau of Reclamation                | 26.198   | 4.017 | 26.656    | 3.641 | 0.458      | 96   |
| Bureau of Sports Fisheries, Wildlife | 26.315   | 4.231 | 26.047    | 4.491 | -0.268     | 127  |
| Forest Service                       | 26.577   | 4.041 | 26.832    | 4.120 | 0.255      | 692  |
| National Park Service                | 26.640   | 4.317 | 26.304    | 4.072 | -0.336     | 125  |
| Coed/non-Coed                        |          |       |           |       |            |      |
| Coed                                 | 26.351   | 4.171 | 26.645    | 4.112 | 0.294      | 643  |
| Girls                                | 27.022   | 3.926 | 27.607    | 3.929 | 0.585      | 135  |
| Boys                                 | 26.574   | 3.964 | 26.256    | 4.134 | -0.318     | 352  |
| Session length                       |          |       |           |       |            |      |
| 4 weeks                              | 26.528   | 4.179 | 27.259    | 4.152 | 0.731      | 212  |
| 8 weeks                              | 26.494   | 4.004 | 26.548    | 4.069 | 0.007      | 836  |
| 12 weeks                             | 26.024   | 4.578 | 25.963    | 4.327 | -0.061     | 82   |
| PIRI                                 |          |       |           |       |            |      |
| Low                                  | 26.397   | 4.043 | 25.990    | 4.125 | -0.407     | 292  |
| Medium                               | 26.494   | 4.191 | 26.691    | 4.203 | 0.197      | 543  |
| High                                 | 26.617   | 3.918 | 27.186    | 3.853 | 0.569      | 295  |
| Overall average                      | 26.501   | 4.080 | 26.639    | 4.113 | 0.138      | 1130 |

While boys and girls are both highly concerned with being well-liked by others, girls more consistently give this value top priority. They are more likely to stress values of interpersonal harmony and success (likeable; easy to get along with; friendly, sociable, and pleasant; a person who knows how to get along well with all kinds of people; well-liked by many different people). (1965: 254)

Campers at Bureau of Land Management camps showed the greatest gains in perceptions

of *social skills: peers*. Campers at Bureau of Reclamation and Forest Service camps were second and third respectively. These agencies differed in the proportions of time devoted to social and recreation activities and to work and educational activities.

There was a negative relationship between length of camp session and *social skills: peers*.

The high motivation, enthusiasm, and zest for fellow campers waned after 4 weeks.

Participants in camps with high PIRI demonstrated growth in peer perceptions. Participation and leadership in these camps took place in informal groups, teams, and work gangs. The pleasure of human association with peers was enhanced by success in helping to plan the camp program. The interpersonal portion of the PIRI reflects the way significant others (camp staff) supported, trusted, and showed confidence in the participants.

## CONCLUSIONS

Working to improve the environment through the YCC program changed certain dimensions of participants' self-concepts. Decreased perceptions of adequacy and increased perceptions of *personal worth, social skills: adults, and social skills: peers* were noted at the end of the program. These changes differed with sex, age, and family income of participants and with the type, location, sponsoring agency, and participation-interpersonal relations index (PIRI) of the camp.

Certain dimensions of self-concept appear to change over a short time. The casual atmosphere, the purpose of the YCC program, and the informal relationships with adults and peers at the camps seemed to affect the four dimensions of self-concept measured in this study. It seems logical that over a longer period of time, changes in parts of a whole should bring about a change in the whole.

The YCC program has many values other than enhancing selected dimensions of self-concept. The program serves as a type of career education, exposing young men and women to careers in forestry, resource management, and the sciences. It also helps to improve the environment and maintain our natural resources, and that is very important.

## Acknowledgments

Data for this study were collected by the Survey Research Center during its evaluation of the 1971 Youth Conservation Corps program. The Center is a part of the University of Michigan's Institute for Social Research. Special thanks to B. L. Driver, Robert W. Marans, and John C. Scott for their encouragement and cooperation throughout the initial evaluation.

## LITERATURE CITED

- Bachman, Jerald G.  
1970. *Youth in transition*. Vol. 2. Braun-Brumfield. Ann Arbor, Mich.
- Brownfain, J. J.  
1952. *Stability of the self-concept as a dimension of personality*. *J. Abnorm. Soc. Psychol.* 47:597-606.
- Coopersmith, Stanley.  
1967. *The antecedents of self-esteem*. Freeman, San Francisco.
- Dewey, Richard, and W. J. Humber.  
1966. *An introduction to social psychology*. Macmillan, New York.
- Dickerson, LaVerne Thornton.  
1973. *An exploration of the effects of the Youth Conservation Corps experience on selected dimensions of adolescents' self-concept*. Ed. D. diss., Sch. Educ., New York Univ., New York.
- Engel, Mary.  
1956. *The stability of self-concept in adolescence*. Diss., George Peabody Coll. Teach.
- French, John P. R., Jr., and Robert L. Kahn.  
1962. *A programmatic approach to studying the industrial environment and mental health*. *J. Soc. Issues*, 18: 1-47.
- Gordon, Chad.  
1971. *Social characteristics of early adolescence*. *Daedalus* 100(4): 931-960.
- Likert, Rensis.  
1967. *The human organization: its management and value*. McGraw-Hill, New York.
- Marans, Robert W., B. L. Driver, and John C. Scott.  
1972. *Youth and the environment*. Univ. Mich. Press, Ann Arbor.
- Murphy, Gardner.  
1947. *Personality*. Harper, New York.
- Rosenberg, Morris.  
1965. *Society and the adolescent self-image*. Princeton Univ. Press, Princeton, N. J.
- Taylor, D. M.  
1953. *Consistency of the self-concept*. Ph.D. Diss., Vanderbilt Univ.

“In today’s society, a filling-station ethic prevails. Children are bused to camp for their measured portion of nature recreation, as if to a spiritual tuneup” - Ruth Hamilton Allen

# Urban Children in Natural Environments: A Field Study in Sociobiology

by RUTH HAMILTON ALLEN, *Council of Governments,  
Washington, D.C.*

---

**ABSTRACT.** Six nature programs for urban children were studied from 1970 to 1974. Social networks in the camping programs and children's choices of locations for various leisure activities were examined. Return rates were found to correlate significantly with the intricacy of the social networks.

---

## CHILDREN'S CAMPING PROGRAMS

Children from cities attend a variety of camping programs to experience the wonders of nature. In order to better understand the actual relationships between urban children and natural environments, I spent four summers observing city children at six camping programs.

The programs include: an urban nature center, a museum natural history program for inner-city children, an urban YMCA day camp, a neighborhood house camp, a scout camp, and a private charitable organization's resident camp. Major differences in the structure and organization of these programs are shown in table 1. These programs are representative of the main types available to urban children whose parents do not have the time or the inclination for family camping.

More than 40 percent of the children studied received financial aid to attend camp. The children were mainly 8 to 13 years of age at the time of the interviews. Boys and girls of all races attended all camping programs.

## SOCIAL NETWORKS

Social networks can be defined as private and more or less permanent structures that bind individuals into complex lines of communication and transportation (*Moreno 1934*). Moreno sees

social networks as a container, or a bed that carries and mingles currents and opinions (*Moreno 1960*).

Social networks among urban children in natural environments take several forms. First, there are existing social networks that are moved to camp. Siblings, cousins, neighbors, or school friends at camp together constitute existing social networks. Volunteer staff who bring their children to camp form another existing social network in the camp. Second, there are clusters of returnees who have shared previous seasons of camping together. Third, there are strong attachments developed in one season, especially between children and counsellors. If adult staff interact face to face with children, favorite children may be invited back for a second year.

## Children's Social Networks and Leisure Preferences

Social networks are associated with children's leisure preferences. In individual interviews, 363 children were asked what they do in particular places when they can do what they like to do (*Allen 1977*). The leisure locales given were: home, yard, school, neighborhood, in town (parks, museums and beaches) and out of town (special vacation places and trips to visit relatives). Children were also asked about their companions for each reported activity. These companions are the ingredients of social networks.

**Table 1.—Major characteristics of six camping and conservation programs for urban children**

| Sponsor                                  | Type of program          | Return rate    | Year established | Size of site | Distance children travel | Average length of visit | Primary season       | Sex of director (s) |
|--|--------------------------|----------------|------------------|--------------|--------------------------|-------------------------|----------------------|---------------------|
|  |                          | <i>Percent</i> |                  | <i>Acres</i> | <i>Miles</i>             | <i>Weeks</i>            |                      |                     |
| Public city park nature program          | Specialized conservation | 32             | 1947             | 46           | 0-5                      | Variable (0-8 hr)       | Fall, winter, spring | M                   |
| Private university museum summer program | Specialized conservation | 6              | 1968             | 1-50         | 0-5                      | 3 (half day)            | Summer               | F                   |
| Public charitable day camp (YMCA/YWCA)   | Centralized camping      | 22             | 1948             | 72           | 0-25                     | 2                       | Summer               | F,M                 |
| Private neighborhood house day camp      | Centralized camping      | 35             | 1952             | 70           | 0-25                     | 2                       | Summer               | M                   |
| Public scout resident camp               | Decentralized camping    | 27             | 1912             | 7-1100       | 5-100                    | 2                       | Summer, winter       | F,M                 |
| Private charitable resident camp         | Decentralized camping    | 29             | 1887             | 1000         | 5-100                    | 4                       | Summer, winter       | F                   |

Variations in leisure preferences by locale are shown in table 2. The 10 leisure categories are a synthesis of 6,463 separate responses and over 630 reported leisure activities. The categories of competition, chance, simulation, and vertigo are from a classification of games by Caillouis (1961). *Nature* includes fishing, hiking, camping, gardening and activities with pets. *Competition* encompasses baseball, football, basketball, and street games like hockey, handball, stickball, and tag. *Simulation* refers to pretending games such as dolls, house, doctor, cops and robbers, cowboys and Indians, and store. *Chance* includes cards, bingo, and commercial board

games. *Vertigo* means games which stimulate or upset the centers of balance, such as, running, jumping, bicycling, swimming, climbing, and swinging. *Travel* means sightseeing and trips to shop, vacation, or visit relatives. *Construction* includes creative activities like sewing, painting, building models and commercial craft kits, coloring, and drawing. *Quiet* encompasses solitary and sedentary endeavors such as reading, talking on the telephone, listening to music, eating, and watching television. *Work* refers to domestic chores such as cooking, cleaning, running errands, and helping with younger children in the family. *Negative* includes teasing

**Table 2.—Locations preferred by campers for various types of leisure activities, in percent of respondents**

| Type of activity | Location |      |              |        |         |             |
|------------------|----------|------|--------------|--------|---------|-------------|
|                  | Home     | Yard | Neighborhood | School | In town | Out of town |
| Nature           | 3        | 12   | 5            | 1      | 7       | 11          |
| Competition      | 6        | 61   | 37           | 45     | 13      | 4           |
| Simulation       | 13       | 4    | 5            | 3      | 0       | 0           |
| Chance           | 22       | 1    | 3            | 5      | 1       | 0           |
| Vertigo          | 2        | 16   | 29           | 16     | 26      | 16          |
| Travel           | 0        | 1    | 11           | 2      | 48      | 64          |
| Constructive     | 12       | 1    | 2            | 9      | 2       | 1           |
| Quiet            | 37       | 2    | 4            | 10     | 1       | 2           |
| Work             | 4        | 1    | 2            | 6      | 1       | 1           |
| Negative         | 1        | 1    | 2            | 2      | 1       | 1           |

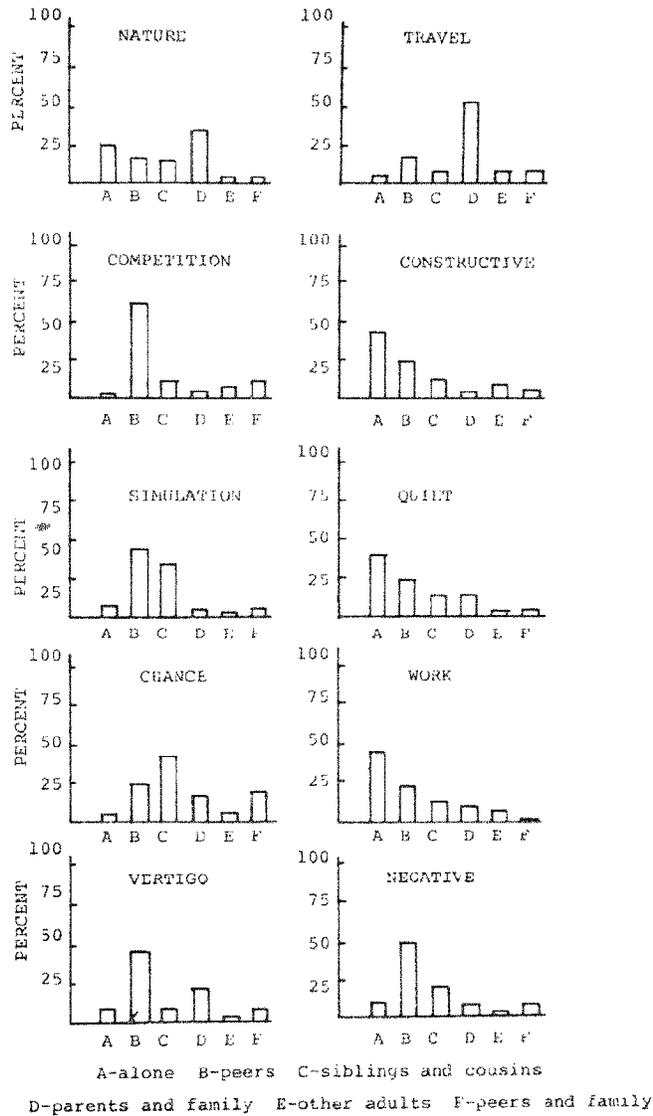
people, fighting, getting into trouble, and aimless activities like "hanging around" or "fooling around."

Note that nature-related activities occupy a small portion of children's reported leisure, even though the children were attending a nature-oriented outdoor program at the time of the interview. The children reside mainly in cities like New York and New Haven, and the constraints

and orientations of an urban lifestyle are reflected in their reports of leisure preferences. Competitive street games are the dominant activities.

Companions most often chosen for each category of leisure activity are given in figure 1. Competition, stimulation, chance, and negative activities are most often carried out with peers or siblings and cousins. Nature-related activities

**Figure 1.—Companions most often chosen for each category of leisure activity (in percent).**



and travel are more frequently with adult family members. Constructive, quiet, or work activities are often solitary endeavors.

#### Return Rates and Social Networks

A careful analysis of attendance records shows several things about social networks, children, and nature. Return rates can be derived by comparing names and addresses on attendance lists for consecutive years. For the six programs examined in 1972 and 1973, return rates varied from 6 percent to 35 percent. The lower figure is for a program that does not recruit in the same schools in consecutive years. The higher figure is more typical of cohesive neighborhood programs.

The nature experiences returnees and newcomers have in camp differ. Returnees have special knowledge of past events and camp lore. They know about natural features and ritual ceremonies. They lend stability and continuity. The slow replacement of group members provides a sense of belonging to a community that is recognizable year after year. In subtle ways, returnees contribute to the persistence of programs and social networks.

Social networks, in turn, influence recruitment patterns, the program's reputation with children, and the degree of cohesiveness among past staff and former campers. When these adult returnees are present they serve important functions. They orient newcomers, provide volunteer labor, donate money and material goods in times of scarcity, and generally foster the altruistic sentiments of the group.

#### The Significance of Social Networks in Children's Camps

This subtle role of nature in the lives of urban children has to be seen in the context of existing social networks. Too frequently, program managers think only in terms of the number of children served. In today's society, a filling-station ethic prevails. Children are bused to camp for their measured portion of nature recreation, as if to a spiritual tuneup.

Too little attention is paid to return rates and patterns of existing social networks in camps. Only one camp director routinely calculated return rates.

The physical isolation of most camp settings fosters a special feeling of community cohesion.

The fixed location of the camp property is also important for the maintenance of social networks and group cohesion.

There is a sense of symbolic ownership of the land and the land-water interface among the people who return to children's camps. This group of people would ordinarily not control this resource of the more affluent. Four of the programs I studied have access to land they do not actually own; its use is made possible by donations from wealthy patrons.

## LOOKING AHEAD

Suburban development is common on the fringes of all the programs. The wildness is largely symbolic. Camps face a number of serious problems: rising costs and strict health and safety standards that favor day and half-day programs over longer visits to natural environments. There is also a significant drop in the birth rate, which is already being felt in the larger organized programs. The professionalization of everyone and the increased participation of women in the labor force are changing the patterns of available volunteers.

The practice of busing children away from city neighborhoods ignores the more difficult task of making the places where poorer children live fit for growing children. Too often children have little time to get lost in fantasy play or explore nature because the behavior norms of school are fostered in camp.

Nevertheless, camps for urban children will probably continue to provide low-cost vacations in natural settings. The challenge to managers is to provide urban children with variety, accessibility, and extensions of existing social networks.

The challenge to researchers is to see beyond myths and assumptions to what is actually happening to urban children in natural environments. A new synthesis of theory and methods of sociobiology (*Wilson 1975*) provides many clues for uncovering patterns of behavior in naturalistic settings. Social networks, kin groups, and face-to-face interactions observed at camp can be better understood in sociobiological terms.

#### Acknowledgment

Special thanks to Professor William R. Burch.

Jr. of Yale University, for consistent encouragement, advice, and help with this research project. It was partially funded by U.S. Forest Service grant number 9570-48-447700.

### LITERATURE CITED

Allen, Ruth Hamilton.

1977. **Social organization, group cohesion and persistence of children's outdoor programs: A field study in sociobiology.** Ph.D. thesis, Yale Univ. 184 p.

Caillois, Roger.

1961. **Man, play, and games.** Free Press, New York, 208 p.

Moreno, J.L.

1934. **Who shall survive? A new approach to the problems of human relationships.** Beacon House, Beacon, N.Y. 440 p.

Moreno, J.L. (ed).

1960. **The sociometry reader.** Free Press, Glencoe, Ill., 773 p.

Wilson, Edward O.

1975. **Sociobiology: The new synthesis.** Belknap Press, Harvard Univ. Press, Cambridge, Mass., 697 p.