Editor's Note:

Bumper stickers encourage people to “Think Globally—Act Locally.” NAI is doing that and more. With this 1997 issue of the Journal of Interpretation Research (JIR) comes the exciting news that the journal will be reaching new international audiences. JIR is now being translated into a Spanish version titled Boletín de Investigaciones en Interpretación. The translation is being done by a student chapter of the National Association for Interpretation at the University of Idaho under the supervision of Dr. Sam Ham. Moreover, we are planning to have the journal translated into Mandarin Chinese in the near future.

Translating JIR into other languages reflects NAI’s new emphasis on serving a worldwide network of interpreters. The journal will fill a tremendous void in nations where professional publications and interpretation training are unavailable. These efforts greatly expand the sphere of influence of the Journal of Interpretation Research and the authors who contribute to it.

NAI is thinking and acting globally. Please join us in our mission to enhance the interpretation of our world’s natural and cultural resources.

Ted T. Cable
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Journal of Interpretation Research
PERSONALIZING THE PAST:
A REVIEW OF LITERATURE WITH
IMPLICATIONS FOR HISTORICAL
INTERPRETATION

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Abstract:
The recent perspective known as meaning-making has advanced the belief that understanding interpretive site visitors’ frameworks and past experiences is critical to successful interpretation. How, then, do visitors make meaning of heritage site experiences and of the past in general? This review examines and synthesizes recent studies and considers their contribution to the theory and practice of historical interpretation. In sum, research suggests three major realms of experience from which visitors draw schemata that inform meaning-making at heritage sites: (a) associations with and knowledge of history, (b) experiences and behavior regarding the past in everyday life, and (c) expectations of and behavior at heritage sites. Using this literature as groundwork, three strategies for empirically driven historical interpretation are presented: (a) addressing the nature of history and visitors’ associations, (b) incorporating everyday life behaviors, and (c) interpreting for the social nature of the heritage site visit.

Keywords:
Historical interpretation; meaning-making; constructivism; heritage sites; visitors; visitor experience; schemata.

INTRODUCTION
From parks to battlefields, from museums to towns, heritage sites across the United States and throughout the world attract visitors and engage them in a process of communication about the past. Through exhibits, tours, reconstructions, and other media, interpretation professionals strive to offer meaningful presentations about “things of value which have been passed from one generation to the next” (Parks Canada, undated, p. 7). Yet a simple linear “sender-receiver” model of communication does not adequately describe the process by which visitors understand the past at heritage sites. When encountering interpretation created by site personnel, visitors bring to bear their own conceptions, experiences, and expectations to make sense of what they see, for “everyone is an historian” (Becker, 1932).

Note: Accepted September 1997.
Years ago, educational theorists such as John Dewey and Jean Piaget purported that people learn by placing new information within the context of their past experiences. In the late 1950s, Freeman Tilden’s first principle of successful interpretation advised us to “relate what is being displayed or described to something within the personality or experience of the visitor” (1957, p. 9). In the past 10 years, these ideas have been greatly expanded by a major intellectual perspective known as post-modernism, constructivism, or meaning-making. Affecting a range of disciplines concerned with the nature of information exchange, this perspective views the process of communication as a negotiation between parties in which information is created rather than transmitted (Dervin, 1981). The individual, or “reader,” with his/her store of past experiences, is the key to shaping the meaning of an encounter, or “text.” However, because meaning is also influenced by social and cultural norms, attitudes, and values that surround the communicators, patterns in meaning-making can be predicted.

What does this mean for historical interpretation? In the setting of a heritage site, visitors actively create meaning through their own contexts. Understanding visitors’ contexts for heritage site experiences—their perspectives, frameworks, past experiences—is essential to successful interpretation.

How, then, do visitors make meaning of heritage site experiences or, more broadly, of the past in general? A recent surge of interest in these questions among historians and social scientists has yielded new research, yet little of it has been systematically considered in relation to interpretation. Many of these studies, limited in their generalizability, have used qualitative methods and/or small samples. However, the collective findings suggest an emerging theoretical base. The purpose of this integrative review is to examine and synthesize a sampling of relevant literature and to present implications of this work for the theory and practice of historical interpretation.

**Mechanics of Meaning-Making: Schemata**

Studies have documented that museum and site visitors do indeed place what they encounter within the context of their existing knowledge and experience, as evidenced by their talk (Carson & Carson, 1983; Silverman, 1990). In talking with their companions, visitors engage in a set of “interpretive moves”—typical comments in which they identify what they see, compare it to other objects they know, and share what they know about it (Carson & Carson; Silverman). Overall, studies of visitor talk suggest that in response to interpretive media, such as labels and personal tours, visitors “personalize,” or connect with, new information in ways that are individually meaningful (Birney, 1982; Carson & Carson; Silverman).

Such personalizing occurs through the lenses we use to make sense of things, our “cognitive schemata.” As defined by social psychologists, cognitive schemata are the organized patterns of thoughts, rules, and generalizations derived from past experience that guide our selection, organization, and storage of information (Smith, 1982). Schemata affect what people attend to, remember, and subsequently make meaning of. The schemata of interpretive site visitors are likely to vary somewhat depending on the specific subject matter and the visitors’ backgrounds. Yet, as the meaning-making perspective suggests, schemata emerge in social and cultural contexts. Therefore, patterns of schemata are likely to exist within visitor populations.
Associations with and Knowledge of History
A starting point for exploring how people make meaning of the past has been the study of people's associations with terms such as history and the past. Regardless of the specific topic a visitor might encounter at a site, he or she is likely to have schemata about the concepts of history and the past that, consciously or unconsciously, contribute to his or her perspective. What definitions, ideas, and associations about history and the past do people carry with them? What patterns may exist among visitors?

Several museum audience studies have explored these questions. For example, a study conducted at the Minnesota Historical Society found that although randomly chosen Minnesotans considered “history” to be “dry, impersonal, and serious,” they felt that the “past” generally had more to do with their own lives (People, Places and Design Research, 1990). In a study conducted at the Pennsylvania State Museum, many people defined history as separated from recent times, often at the point of the respondent's birth or lifetime (Silverman, 1988). Such studies suggest that respondents think of “history” as something that is remote and distant from themselves, occurring before their lifetime and certainly before the present, whereas the “past” is more relevant and personal.

In a novel technique borrowed from psychology and art therapy, where drawing is used as a diagnostic indicator of feelings and attitudes, people have been asked to “draw history” (Scarpino, 1988). In this inquiry, college student informants were asked to take a piece of blank paper and “visually portray what comes to mind when they hear the word history” (Scarpino, p. 5). They then turned the paper over and wrote a paragraph describing how they fit into the pictures they had drawn (Scarpino, p. 5). In an analysis of 86 students' pictures, two predominant themes emerged: “history as a chronicle of warfare, and history as a process of change over time” (Scarpino, p. 6). As reflected in their explanatory paragraphs, most students did not see themselves fitting into history, echoing the finding of museum audience studies that people do not feel “connected to” or included in history.

Scarpino's study (1988) also shows the pervasiveness of certain associations and knowledge regarding history among college students, a finding seconded by Frisch (1989). In the latter study, students were asked to write down the first 10 names that popped into their heads in response to the prompt “American history from the beginning through the end of the Civil War.” Frisch found amazing uniformity among the names mentioned by 1,000 students surveyed between 1975 and 1988. Six names in particular appeared in students’ “top 10” list every year: Washington, Jefferson, Lincoln, Grant, Adams, and Franklin. The students’ lists revealed an almost exclusively political and military caste, focused on important events. Frisch interpreted this as evidence not only for the influence of high school history curricula but also for “a deeper set of cultural structures at work on the collective imagination of students year after year” (p. 1138), mediated perhaps as much through the heroes, legends, and myths of popular culture and mass media as the primary classroom.

In pilot stages of a national survey of Americans’ attitudes and habits having to do with the past, a majority of those sampled felt an obligation to know “basics” of
U.S. history, but not many felt that they did (Silverman, 1992). There was a sense among respondents, resonant with Frisch’s study (1989), that there is a body of knowledge about history to be learned but that this knowledge does not necessarily have much to do with people’s personal lives. On the other hand, respondents conveyed much more positive sentiment about the notion of the past, and many exhibited a strong and emotional connection to the past of their family and of their ethnic group (Silverman). In particular, many people spoke passionately about activities having to do with the past that connected them to their families and to previous generations, such as hobbies and collections (Silverman).

What do these studies suggest about the meaning-making processes of those visiting heritage sites? There are surely visitors who are history buffs, hobbyists, or professionals whose schemata are likely to differ. However, the site visitors, students, and “typical” Americans sampled in these studies appear to think of and relate to the subject of history with little personal connection or detailed knowledge, doing so out of a sense of duty. As a result, their approach to a heritage site and to historical interpretation might well be characterized by a similar sense of obligation or distance, or an expectation of feeling that way. The results of these studies also echo visitors’ needs to “personalize” the past: the more people can relate the subject to their own lives or ancestry, the less they think of it as history per se and, more importantly, the more enthusiasm and interest they seem to hold for the subject.

Experiences and Behavior Regarding the Past in Everyday Life

While the term history seems to connote a large body of distant information for people, it is true that “every person [sic] is an historian” (Becker, 1932). Because “the past” and people’s family history seem to generate stronger feelings of connection for people, what are the ways that people engage the past in their own lives? How might these ways and associated schemata impact people’s experiences at interpretive sites?

Researchers from a variety of fields have described a number of everyday behaviors, rituals, and hobbies related to the past (Glassie, 1982; Katriel & Farrell, 1991; Silverman, 1996; Unruh, 1983). Many of these studies use intensive methods such as ethnography to learn about the meaning of the activity from the perspective of the participants themselves. Although variations are likely to exist among different kinds of people, the literature suggests at least five common characteristics of people’s everyday engagements with the past: (a) the use of significant others as sources of information about the past, (b) the frequency of the life story as a medium for learning about the past, (c) the importance of objects and artifacts as symbols, (d) the pervasiveness of “professional” historical skills among laypeople, and (e) the impact of firsthand experience on one’s perception of a past event. Each of these characteristics seems likely to contribute to people’s schemata when visiting heritage sites.

First, in everyday life, people turn regularly to family members and other trusted individuals with whom they have personal relationships for information about the past. In his 1982 ethnography of an Irish border community called Ballymenone, folklorist Henry Glassie studied the range of ways in which people in the commu-
nity “make history.” Glassie showed that histories are told by many different types of individuals and that these histories serve a multitude of personal and social ends.

Although Americans learn about the past from a number of different sources—such as books, television, and history teachers—the source they most frequently reported as trustworthy in a pilot survey was the personal account given by grandparents and older relatives (Silverman, 1992). While the selective memory of these individuals may well be problematic, informants explained that they still highly valued the accounts given by significant individuals they knew and respected. Thus, in daily life, people seem to gain knowledge of the past from personal contact. This may explain people’s interest in and enthusiasm for first-person interpretation at heritage sites, where information is often conveyed by characters who are family members or trusted community members.

Second, people learn about the past through the format and content of life stories. Literature on reminiscence and oral history suggests that people use common themes and life events to characterize themselves and others, such as birth, childhood, marriage, career, and other life-cycle events (Unruh, 1983; Lo Gerfo, 1984). Research also suggests that people learn about their relatives and ancestors through stories they are told about their ancestors’ lives (Unruh). Given these studies, it is no surprise that visitors to heritage sites often respond favorably to “the new social history” focus of historical interpretation, in which nationally significant events are related to “the common experiences of everyday people” (Knudson, Cable, & Beck, 1995). Particularly effective are interpretive presentations about people’s life styles, social conditions, and life decisions (Silverman and Korn, 1994).

Third, abundant evidence exists that objects serve as symbols of past times, events, and relationships (Csikszentmihalyi & Rochberg-Halton, 1981; Silverman, 1996). Research on souvenirs suggests that people use objects routinely as reminders in their lives (Gordon, 1986), whereas studies of people and common household possessions document the use of objects for contemplation of past experiences, accomplishments, and relationships within families (Csikszentmihalyi & Rochberg-Halton). Given this behavior, it is easy to understand why most people visiting heritage sites respond to historical artifacts they see with stories and reminiscences from their own lives (Sharpe, 1982; Silverman, 1990).

Fourth, many people who are not interpretive site professionals routinely cultivate skills critical to the profession, such as saving, organizing, and exhibiting. In a study of households in a Pennsylvania community, Musello (1986) found that the organization and display of furniture, heirlooms, and possessions were significant ways in which relationships and status were communicated and maintained. People treated each other’s homes as museums, where the residents themselves acted as site interpreters for their guests. In a study of scrapbook keeping, Katriel and Farrell (1991) described three distinct components to the activity—saving, organizing, and sharing—and examined how young girls practiced these skills. Thus, although people may not be conscious of the similarities, many are well versed in skills used in heritage site work simply as a result of living. When visiting heritage sites, therefore, visitors may be more interested in the processes of interpreting and exhibiting than site professionals tend to realize or accommodate.

Last, but perhaps most importantly, those who live through a specific historical
event or time period are likely to think about it differently than those who have not. In particular, those with experience may have specific memories and personal associations and may be more likely to feel personally connected to the event than those without (Schuman & Scott, 1989). Although this is obvious, it has ramifications for site visiting. While those who have lived through a historical period or event may not always choose to speak about their memories, their schemata of the particular subject are likely to be far more ingrained than those of people who have not experienced a particular subject or event firsthand.

As these studies suggest, the five components of people’s experiences with the past in daily life are common ways in which people naturally relate to the past. Therefore it is not surprising that these behaviors do not get left at the door when people visit heritage sites; rather, they provide some of the perspectives through which people can connect to or find relevance in that which they encounter (Sharpe, 1982; Silverman, 1990). Additional empirical study is needed to further understand the precise role of these behaviors in visitors’ heritage site experiences.

*Expectations of and Behavior at Heritage Sites*

The third major area of experience from which people draw schemata is their expectations of, associations with, and behavior at heritage sites. The past 20 years have witnessed a major increase in research examining museum and heritage site visitors and their experiences. Although behavior and interest vary somewhat by population and context, there appear to be some commonalities to visitors’ expectations of and behaviors at sites in general (Falk & Dierking, 1992). Four areas in particular seem likely to affect visitors’ meaning-making processes at heritage sites: (a) expectations, (b) agendas, (c) companions, and (d) respect for site personnel.

First, people have ideas and expectations of what a site or a museum is and what can and should be found there. Studies suggest that people expect to see artifacts in museums (Silverman, 1993). At historic sites, people appreciate authenticity and realism and expect to encounter events that they have not experienced personally (Silverman). Visitors may feel surprised and upset if these expectations are not met.

Second, all visitors have their personal agendas for a site visit (Falk & Dierking, 1992). Although site personnel may want visitors to have an educational experience, visitors’ own agendas might be to have relaxing or social experiences (Falk & Dierking; Silverman, 1990). Visitors’ expectations and agendas are likely to influence what visitors notice, do, and remember, as well as how they rate their satisfaction with the visit (Falk & Dierking).

Third, the greatest influence on that personal agenda may well be the companion or companions with whom one visits a site (Draper, 1984; Falk & Dierking, 1992). Although some people do attend sites alone, site visits overwhelmingly occur in the company of others, such as friends and family members (Draper; Falk & Dierking). Not only does the choice of companion(s) for a visit affect a visitor’s agenda, but companions may affect visitors’ conversation, focus, and even the meaning that is made of interpretive material (Hilke, 1989; Silverman, 1990).

Fourth, despite the fact that visitor agendas appear to be highly personal, there is evidence that visitors generally show respect for appropriate norms of behavior in sites and museums (Falk & Dierking, 1992). They also value the knowledge of
site personnel (Falk & Dierking). For example, visitors typically express interest in learning information from site personnel directly (Silverman, 1990) and through interpretive labels and signs (Falk & Dierking).

Thus, while visiting a site, people are likely to draw schemata from this third realm of experience as well—their expectations of, previous experiences with, and current desires for the visit as influenced by their personal agendas, their companions, and the site personnel.

**Implications and Directions for Historical Interpretation**

The meaning-making perspective suggests that understanding visitors’ contexts for heritage site experiences—their frameworks and past experiences—is essential to successful interpretation. Lacking detailed understanding of visitors’ contexts, many heritage sites do not currently accommodate or facilitate visitors’ meaning-making processes well. Focused on successfully communicating specific factual information or perspectives, concerned with the question of whether the visitor “got the message,” site interpreters are often amused by, dismissive of, and sometimes annoyed by visitors’ comparisons, reminiscences, and accounts of previous site visits. However, all of these behaviors provide evidence of visitors’ meaning-making processes at work. Studies suggest that if little opportunity exists for visitors to personalize what they encounter, many may leave heritage sites feeling that history is remote and irrelevant to their lives. Many more may never set foot on a site to begin with.

The literature reviewed in this article illuminates three important realms of experience from which visitors are likely to draw schemata that inform meaning-making at heritage sites, offering groundwork for the development of more empirically driven interpretive strategies. Given these realms, what interpretive strategies might provide a better “fit” for visitors’ meaning-making processes at heritage sites? Three critical directions hold promise: (a) addressing the nature of history and visitors’ associations, (b) incorporating everyday life behaviors, and (c) interpreting for the social nature of the heritage site visit.

**Addressing the Nature of History and Visitors’ Associations**

The literature about visitors’ associations with and knowledge of history suggests that many people appear to feel disconnected from history, believing it has little to do with them (People, Places and Design Research, 1990; Scarpino, 1988; Silverman, 1992). However, visitors generally look to sites and site personnel for guidance and information (Falk & Dierking, 1992). Given these two findings, interpreters at heritage sites may be wise to do more interpretation of the very concept of history. Exploring the nature of history through a visitors’ center exhibit, an introductory panel, or a discussion during a tour, for example, might be a way to affect visitors’ negative feelings and schemata regarding history. Interpretation of the nature and importance of history throughout time and in our lives might help visitors see the subject as relevant to themselves and worthy of their enthusiasm and interest.

Historical interpretation at heritage sites could do more to encourage audiences to explicitly compare what they believe or know to new information or perspec-
tives they might encounter at the site. Through such techniques as labels that ask visitors questions and feedback books for visitor comments, for example, visitors could be encouraged to share their knowledge and ideas with other visitors, helping them to grasp the concept that everyone is a historian (Becker, 1932).

When presenting information about the past, historic sites could more frequently present conflicting views or interpretations and discuss where they came from. By guiding visitors to compare their own and other conflicting perspectives on a given subject, heritage sites could interpret the importance of evaluating perspectives and sources. Through such techniques, visitors could be encouraged to reflect upon and share their associations with and knowledge of history more explicitly, becoming more involved in and personally “connected” to the process of history.

Incorporating Everyday Life Behaviors

Given the literature describing people’s experiences and behaviors regarding the past in everyday life, it seems clear that historical interpretation can be made more comfortable, familiar, and engaging for audiences if it were to incorporate more everyday life behaviors and ways in which people naturally engage with the past. Four strategies appear to be particularly promising: (a) the narrative format of the life story, (b) the content of life stories, (c) trusted narrators, and (d) the meaning of objects in people’s lives.

Whether learning about loved ones and ancestors or getting to know strangers, people are used to thinking and hearing about the past through the narrative format of the life story (Glassie, 1982; Silverman, 1992). Although this is sometimes used at heritage sites, particularly in first-person interpretation, the literature suggests that the life story format holds much promise as a familiar form to which visitors can easily relate.

Similarly, people are familiar with the content of life stories—stages, events, trials, tribulations, challenges, and decisions—made by people in their lives, and the impact of these decisions (Lo Gerfo, 1984; Unruh, 1983). Life story content often deals with basic human values and concerns—growing up, partnerships, challenges, threats—topics with which most people can naturally empathize. Heritage site interpretation should strive to tell stories in such human terms and, whenever possible, explicitly encourage life comparison and empathy through label text, exhibits, and tours. While the “new social history” approach of most historic site interpretation (Klundtson, Cable, & Beck, 1995) has already moved in this direction, the literature on people and the past helps to explain why further movement in this direction is promising and why the natural responses of visitors should be embraced and facilitated openly in site interpretation.

In daily life, the literature suggests, people often learn about the past from significant individuals whom they trust, such as older relatives and family members. Yet, at many interpretive sites, stories are told and information is conveyed by an omniscient, unidentified voice. Here, a better “fit” could be forged by using more first-person interpretation and identified narrators in site interpretation. Role-played characters, simulated diaries, and actual journals are techniques that can be used.
more often in historical interpretation, as are reminiscences of a variety of individuals close to a particular person or event. Although some of these techniques are currently used at heritage sites, further applications and variations in this area seem worth exploring, particularly in light of new developments in interactive computer technology. For example, using interactive technology, a visitor might provide information on his or her own background and then be provided with an animated or computerized exhibit “ancestor” of similar background to act as a trusted personal source or narrator.

The literature on everyday life behaviors also indicates the widespread importance of objects as symbols of the past (Csikszentmihalyi & Rochberg-Halton, 1981; Silverman, 1996). Instead of ignoring visitors’ own reminiscences and personal reactions to objects and site displays, heritage site interpretation would be wise to afford more opportunities for visitors to share those responses—through special programs or tours, feedback books, bulletin boards, and response cards. In these ways, visitors can more readily connect and contribute to heritage site interpretation.

While visitors certainly appreciate seeing authentic artifacts in museums and sites, they also appreciate interpretation of those artifacts as possessions in people’s lives, with specific meanings and stories, just as they are likely to have. Once again, “historical” significance may be communicated most effectively to visitors in the personal possessions, words, and reflections of an identified individual reminiscing just as visitors do.

In summary, people relate to the past in their own lives through a variety of behaviors and activities. To help facilitate visitors’ personal connections at heritage sites, site interpretation can and should use, integrate, and encourage these everyday behaviors more explicitly and fully.

Interpreting for the Social Nature of the Site Visit

Of all the aspects of visitors’ expectations and behaviors at heritage sites documented within the literature, the social nature of the visit seems least well accommodated by traditional site interpretation. Despite the fact that visitors often go to sites in the company of significant others and draw upon each other’s knowledge and experiences extensively to make meaning of what they encounter (Draper, 1984; Silverman, 1990), few interpretive strategies at heritage sites explicitly acknowledge, facilitate, or accommodate these basic behaviors. For example, label text, site signage, and site programming could explicitly encourage visitors to discuss and compare their respective memories of events, associations with topics, or knowledge of historical issues. Interactives could be designed to draw upon and use the exchange of information between companions that usually occurs naturally. Further, interactive computers could facilitate the building of databases of reminiscences and information among different visitor groups. While some heritage sites and museums use such strategies, the potential for—and need to further accommodate—the social nature of the site visit experience now seems clearly supported by literature on people and the past.
CONCLUSION
As options for leisure activities and tourist destinations continue to grow, heritage sites need to consider how to engage current visitors more effectively as well as how to attract new audiences. Historical interpretation may hold the key to both of these goals. To be effective, however, that interpretation must be based on a solid understanding of the nature of visitor behavior.

Fostering such understanding of visitors, the meaning-making perspective has highlighted the centrality of visitors' past experiences in shaping the current meaning of site interpretation and yielded several intriguing studies on people's engagement with the past. Collectively, this literature illustrates how visitors “personalize the past” and provides a growing empirical base for strategies of historical interpretation that facilitate and support visitors' personalizing. It is only through ongoing evaluation of such strategies and further research into the nature of visitors’ experiences that heritage site professionals may actually improve the art of interpretation, that is, the ability to communicate about “things of value...from one generation to the next” (Parks Canada, no date, p. 7). Perhaps equally importantly, it is through further evaluation and research in these areas that we will also advance the science of interpretation—our understanding of the processes, what works, and why. The future of interpretation depends on it.

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THE RELATIVE EFFECTIVENESS OF INTERPRETIVE PROGRAMS DIRECTED BY YOUTH AND ADULT NATURALISTS IN A NATIONAL FOREST

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Abstract:
A field experiment was designed to measure effectiveness of interpretive programming at the San Bernardino National Forest in southern California. The focus of this experiment was to evaluate a newly created youth naturalist program designed by the U.S. Forest Service. During the summer of 1996, 439 visitors completed questionnaires at either a campfire talk or a trail hike. The questionnaires measured their knowledge, attitudes, and/or feelings about how the programs were delivered. Results indicated that interpreters at the campfire talk and the trail hike were successful in accomplishing the stated objectives of knowledge and attitude change. Youth naturalists were equally effective as adults on several, but not all, performance measures.

Keywords:
Forests, interpretation, environmental education programs, effectiveness.

Note: Accepted September 1997. This study was funded by the USDA Forest Service, Pacific Southwest Research Station (Cooperative Agreement No. PSW-96-0015CA).
INTRODUCTION
Public input and involvement in all federal land management plans has been required since Congress passed the National Environmental Policy Act and the National Forest Management Act in 1969 and 1976, respectively. Interpreters can assist resource managers with these and other legislative mandates by effectively communicating with recreationists in wildland settings. Often persuasion efforts are needed because of increased visitation and the conflicts associated with different user groups. Additionally, numerous controversies surround the “wise” use of natural resources. According to many government agencies, the public needs to understand the benefits of multiple-use management. Predicting, understanding, and managing human behavior will not only reduce visitor conflicts but also ultimately yield greater public support for a variety of conservation practices.

Unfortunately the effects of communication strategies in outdoor settings are poorly understood. This problem is compounded by the lack of funding, time, and personnel to conduct evaluation-based research on interpretation. In the current budget-cutting era, government agencies must explore many different options as they try to do “more with less.” Administrators often hire youth naturalists to replace permanent staff, perhaps sacrificing program quality in the process. Although considered an innovative and cost-cutting solution, the relative effectiveness of adult versus youth naturalists has not been measured. The profession needs to reevaluate methods and techniques used to achieve educational goals, as suggested by Carlson (1995), instead of relying on intuition or financial considerations to direct outdoor recreation policy.

LITERATURE REVIEW
The primary way of communicating with wildland recreationists is through interpretive services, including both personal and nonpersonal approaches. However, interpretation is far more than providing information to visitors. Tilden (1957, p. 8) defined interpretation as “an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information.” Wagar (1976) suggested that “effective” interpretation was the result of attention to the presentation, retention of the information, changed attitudes, behavioral change, and appreciation. Because it is unlikely that visitors could achieve the aforementioned cognitive, affective, and behavioral goals on their own, many natural resource professionals believe that visitors should be “assisted” in developing positive attitudes and behavior (Holtz, 1976).

Research has shown that people can modify their knowledge, attitudes, and behavior through a variety of approaches (Petty & Cacioppo, 1981). Because so many variables are involved, persuasiveness depends on which factors are manipulated (Reardon, 1981). For example, an interpretive message contains several persuasive components, including the effects of information and modeling.

Information-based Approaches
A common method of interpretation involves a personally delivered message to
visitors. Generally speaking, information processing is a difficult way to change attitudes because the belief system of the recipient must be restructured. If successful, the effects of this method are presumed to be long-lasting (Pett & Cacioppo, 1981). Consistent with the message-learning approach, Hendee (1972) stated that favorable attitudes toward the environment should accrue from the presentation of complete and relevant information. However, several studies have not supported this claim. Moore (1983) reported a low correlation ($r = .11$) between students’ attitudes and knowledge of animals. LaHart (1981) reported that knowledge and attitudes about the environment were related but apparently have little influence over each other. In an experimental study, Morgan and Gramann (1989) found that an automated slide/tape show positively increased students’ knowledge toward nonpoisonous snakes but did little to modify their attitudes.

**Observational Learning Approaches**

Modeling is thought to produce attitude change via some cue or association in the environment that evokes positive emotions. This principle relies on associating attitude objects with affective cues, which, in turn, arouse emotional responses from subjects. People modify their attitudes by observing (rather than directly experiencing) the behavioral consequences of others. Persuasion by this method is considered to be easier than using an information-based approach, but with more temporary effects (Pett & Cacioppo, 1981).

In some cases, modeling has been shown to have a powerful effect on attitude formation (Bandura 1969; Bandura et al., 1969). Other studies have found modeling to have a positive though nonsignificant, effect on attitudes. For example, Morgan (1996) reported that modeling approaches were highly effective for modifying children’s attitudes toward snakes but were ineffective with females alone. In another study, Morgan and Jarrett (1995) tested the effects of modeling to determine if attitudinal changes could be attributed to the gender or ethnicity of the interpreter. However, matching the racial and gender characteristics of the interpreter with the audience (e.g., a white female interpreter with white females in the audience) proved to be not as effective as hypothesized.

One promising technique uses children to serve as role models while teaching about environmental issues (Milton, Cleveland, & Bennett-Gates, 1995). Participants benefited from a field-based educational experience in several ways, including gains in knowledge, attitudes, and self-esteem. Using school-aged children to present environmental education programs to community residents was a unique aspect of this study. In a follow-up evaluation, most students reported that teaching others was their favorite part of the program.

Some studies have suggested that children benefit from teaching roles, but most results are based on internal changes, such as increased self-esteem (Damon, 1984; Myrick & Bowman, 1983). Few studies have tested the effectiveness of children while delivering educational programs, as measured by audience responses. Kress (1975) examined the effects of youth as peer models (in live-animal programs) and concluded there was no significant difference associated with this procedure when compared with adult models.
Purpose of the Study and Null Hypotheses
This study attempted to provide some practical solutions for improving the effectiveness of interpretive programs in the U.S. Forest Service (USFS). Specifically, it examined the ability of adult and youth naturalists to promote cognitive and affective changes in forest recreationists. To test the message, control and experimental groups were compared to determine if the presentation produced a significant improvement in knowledge and attitude scores. Modeling was tested by comparing the relative effectiveness of youth versus adult interpreters to determine if one group was more persuasive than another.

The null hypotheses were that there would be no significant differences in (a) knowledge, (b) attitudes, or (c) program delivery on forest topics between control and treatment groups during either interpretive program.

Methods
Study Site and Youth Naturalists
The San Bernardino National Forest (SBNF), located in southern California, receives heavy visitation because it is within easy driving distance for nearly 18 million people. Faced with an increased demand for interpretive services but with limited funds to serve more visitors, USFS personnel at the Arrowhead Ranger District established a collaborative partnership between SBNF and the Children's Forest Association to employ high school-aged youth as summer naturalists. This idea was considered unique because it empowered youth to demonstrate leadership, teaching, and decision-making skills while in direct contact with the visiting public. Five youth naturalists (three males and two females) were hired, trained, and mentored by USFS personnel. Since the program's inception in 1995, thousands of visitors have attended environmental programs conducted by high school students.

This experiment used two testing locations within the SBNF, the Children's Forest (CF) and Dogwood Campground (DC). Data were collected on recreationists (primarily family groups; children were at least 10 years old) who visited these sites on weekends from June 28 through September 1, 1996. Interpretive programs were conducted exclusively on weekends. Recreationists visiting the site(s) on other days were regarded as a separate, untested population.

Experimental Design and Treatments
Field-based experiments have been suggested as a method to evaluate the effectiveness of interpretive programs (Roggenbuck, 1979). Following this recommendation, a field experiment was conducted using two control and two treatment groups for each interpretive program (see Figure 1). Two different interpretive programs were tested: (a) evening campfire talks at DC and (b) trail hikes at CF.

Controlling extraneous variables helped to ensure that any changes in visitors, either cognitive or affective, would be attributed to the program and not some other factor. Program content remained the same, but group leadership changed during the summer. Initially, adult naturalists conducted the programs while youth naturalists observed. After the training period was completed, the roles were reversed. This procedure enabled adult and youth naturalists to be tested indepen-
A. Control and experimental groups

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>Youth naturalists</th>
<th>Adult naturalists</th>
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B. Collapsed table

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<th>Adults</th>
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</thead>
<tbody>
<tr>
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<td>C1 &amp; C2</td>
<td>T1</td>
<td>T2</td>
</tr>
<tr>
<td>Trail hike</td>
<td>C3 &amp; C4</td>
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<td>T4</td>
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C. Program delivery

<table>
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<td>T2</td>
</tr>
<tr>
<td>Trail hike</td>
<td>T3</td>
<td>T4</td>
</tr>
</tbody>
</table>

Figure 1. A. The control and treatment groups before and after each interpretive program. B. The “collapsed” format, showing no significant differences between the control groups. C. The comparison of youth and adult naturalists on program delivery.

dently. Other factors possibly affecting the outcome, such as characteristics of the interpreters (number, gender, race, uniforms, etc.) and program location (CF and DC) were controlled by keeping these variables constant.

Testing was conducted either preceding or immediately after each interpretive program. Time constraints and the likelihood of a pretest sensitization effect prevented the use of a traditional pretest and posttest design. In addition, a “true” experimental design could not be used because of the inability to assign visitors to control and treatment groups on a random basis. Instead, a quasi-experimental, posttest-only control group design was selected (Campbell & Stanley, 1963).

To limit biases, the testing times were carefully controlled. For example, there were two campfire talks (an “experimental” program on insects and a “control”
presentation on another topic). Only the insect talk was measured for effectiveness because of logistical constraints. The control and experimental programs were conducted in DC on alternate nights (Friday and Saturday). On the “control” night, visitors were asked to complete the questionnaire on insects prior to watching the other campfire program. On the “experimental” night, visitors were asked to complete the questionnaire after the insect program was finished. Later, control groups would be compared against experimental treatments to detect possible changes in knowledge and attitudes. A similar arrangement was made for visitors attending trail hikes at CF. The theme for the “experimental” hike was based on the beneficial effects of forest fires.

**Questionnaires**

Visitors were asked to complete a multipart questionnaire, depending on which program they attended. If participants were part of a control group, they received a version of the questionnaire that consisted of an attitude scale and a knowledge test. Experimental groups received another version containing attitude, knowledge, and program delivery components. The attitude scale and knowledge test for the control and experimental groups were identical for their respective programs. In addition, the program delivery components for experimental groups participating in campfire talks and trail hikes were the same.

Affective responses for both interpretive programs were measured on a Likert-type scale, consisting of eight statements, each having a possible range in scores from 1 to 5 (most negative to most positive). Some items were reverse-coded. The statements for the campfire talk measured attitudes toward insects on dimensions such as filth, fascination, human dependency, extermination, and beneficial purposes. A portion of the trail hike questionnaire examined visitors’ attitudes toward forest fires. This was accomplished by asking recreationists to state their opinions on fire management in relation to government policy, human life, private property, animals, and wildlife habitat.

Cognitive responses were measured by a set of knowledge questions that tested the informational component of each interpretive talk. This section contained eight fact-based questions, each scored in a multiple-choice format (“true,” “false,” and “I don’t know”). The campfire talk contained general questions relating to the anatomy, physiology, and classification of insects. The trail hike measured visitors’ knowledge of forest fires through questions pertaining to history, policy, management, and the effects of fire.

Additionally both “experimental” audiences were asked to complete an 8-item section evaluating aspects of program delivery, including variables such as the interpreter’s enthusiasm, confidence, and organization. Each item was measured on a semantic differential scale, illustrated by a 5-point range of smiling to frowning faces.

**Data Analysis**

Multiple-scale items, when averaged, yield dimensionality or “fullness,” thereby producing a clearer picture of reality than any single question could provide. The 8-item scales (information, attitudes, and program delivery) on both the campfire...
talk and the trail hike were averaged independently and tested accordingly. Cronbach’s alpha, a measure to determine internal consistency, was calculated on the attitude and program delivery scales. The reliability coefficients were: campfire/attitude, 0.75; campfire/program delivery, 0.81; trail hike/attitude, 0.75; and trail hike/program delivery, 0.88.

Control and experimental groups’ scores on knowledge, attitude, and program delivery were compared using analysis of variance (ANOVA). Scheffe’s multiple comparison test was used as a follow-up procedure to determine which scale means were significantly different from another at the 0.05 alpha level (i.e., whether adults were more effective than youth or vice versa).

For both interpretive programs, the pair of control groups was compared for differences in the dependent variable (C1 vs. C2 and C3 vs. C4). If no differences were found, then each pair was combined to form a single control group for each interpretive program. Using this procedure increased the sample size and subsequently the ability to detect “true” differences between averages in the population (Steel & Torrie, 1980).

RESULTS

A total of 439 visitors to the San Bernardino National Forest were surveyed during the summer of 1996, 283 at Dogwood Campground and 156 from Children’s Forest. (See Table 1 for a visitor profile.) Nearly 100% of those hiking the trail and approximately 90% of those attending the campfire talk completed questionnaires, although an exact count was not possible. Visitors were free to enter and exit the programs at any time, but the “captive” nature of the audience ensured that virtually all members participated in the study.

Control groups (C1 with C2 and C3 with C4) were tested against each other using ANOVA to determine significance at the 0.05 alpha level. In each case (campfire–knowledge, campfire–attitude, trail hike–knowledge and trail hike–attitude), the controls were not significantly different from each other; thus two groups were used instead of four.

Campfire Program

The “insect” campfire talk was tested for relative effectiveness between three cells (control, youth, and adults) on each dependent measure (knowledge, attitude, and program delivery). The statistical results can be seen in Table 2. Overall, the relationship of knowledge scores was highly significant ($F=110.32; 2, 282 \text{ df}; p<.001$), meaning that at least one of the treatments had an appreciable effect. To detect differences between groups, a multiple comparison test was used. These results indicated that (a) both treatments (the youth-led, $x=4.33$, and adult-led presentation, $x=6.00$) produced significantly higher knowledge scores than a control group that received no information ($x=2.99$), and (b) the adult presentation ($x=6.00$) was significantly better than the youth-led program ($x=4.33$) in increasing knowledge.

The attitude scores were tested in a similar manner as the knowledge questions. Results of the campfire program on visitors’ attitudes were as follows: (a) overall, there was a significant difference between groups ($F=4.96; 2, 274 \text{ df}; p<0.001$); (b) the youth-led presentation was similar to a control group that received no
### Table 1. Characteristics of visitors attending campfire talk and trail hike

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<thead>
<tr>
<th></th>
<th>Control (n=135)</th>
<th>Treatment (n=148)</th>
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<tr>
<td></td>
<td>n</td>
<td>%</td>
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<tr>
<td>Youth</td>
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<td>Males</td>
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<tr>
<td>Females</td>
<td>66</td>
<td>48.9</td>
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<tr>
<td>Non-whites</td>
<td>109</td>
<td>80.7</td>
</tr>
<tr>
<td>Whites</td>
<td>109</td>
<td>80.7</td>
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<table>
<thead>
<tr>
<th></th>
<th>Control (n=96)</th>
<th>Treatment (n=156)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Youth</td>
<td>32</td>
<td>33.3</td>
</tr>
<tr>
<td>Adults</td>
<td>32</td>
<td>33.3</td>
</tr>
<tr>
<td>Males</td>
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<tr>
<td>Females</td>
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</tr>
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<td>Non-whites</td>
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<td>72.9</td>
</tr>
<tr>
<td>Whites</td>
<td>70</td>
<td>72.9</td>
</tr>
</tbody>
</table>
program (3.73 vs. 3.59, respectively); and (c) the adult naturalist presentation (3.87) was not different from the youth naturalist presentation (3.73) but was slightly more effective in promoting positive attitudes than the control group (3.87 vs. 3.59, respectively).

The two experimental treatments (youth- and adult-led presentations) were examined for the perceived quality of program delivery. Because the control groups did not receive the “insect” campfire talk, their questionnaire was shortened. Results from the ANOVA test ($F=42.03; 1, 144 \ df; p<0.001$) indicated that adult naturalists ($x=4.79$) were perceived by visitors to be more effective than youth ($x=4.39$) in delivering this interpretive program.

**Trail Hike**

The “forest-fire” trail hike was structured the same way as the campfire talk, except at a different location. Table 2 summarizes the results of the interpretive program.
conducted along the trail. The knowledge test revealed the treatment groups (youth naturalists, $x=6.53$; adult naturalists, $x=7.04$) were significantly better at improving factual information about forest fires ($F=58.19; 2, 155 df; p<0.001$) than the control group ($x=3.91$) receiving no program. However, neither treatment was significantly different than the other at the 0.05 level.

The attitude scores of the treatment groups (youth naturalists, $x=3.41$, and adult naturalists, $x=3.65$) produced more positive feelings about forest fires ($F=28.35; 1, 148 df; p<0.001$) than a control group ($x=2.76$) but were not significantly different from each other.

Lastly, the trail hike measured how well each treatment group performed on certain aspects associated with delivering the interpretive program. This portion of the questionnaire was identical to the one measuring the program delivery components of the campfire talk. Results of this test indicated that adult naturalists were no more effective in delivering the trail hike program than youth ($F=0.77; 1, 59 df; p=0.3844$), as measured by audience preferences.

**Discussion and Implications**

The purpose of interpretation is to produce changes in visitors—whether they are cognitive, affective, or behavioral in nature. In fact, Tilden (1957) even proposed a theoretical linkage between these domains by stating: “Through interpretation, understanding; through understanding, appreciation; through appreciation, protection of our resources.”

**Campfire Talk**

Promoting changes in visitors’ knowledge of the subject matter ought to be of primary importance during any interpretive program. The campfire talk was successful in meeting this objective, at least in the short term. Both youth and adult naturalists succeeded in changing visitors’ knowledge levels about insects compared to a control group. Furthermore, adults were more successful at this task than youth naturalists.

Although not measured, anecdotal evidence suggests the reasons why youth naturalists did not perform as well as adults might be attributed to: (a) the audience was more attentive to the adult naturalists because of their age and experience or (b) the youth naturalists failed to address all eight facts in the insect program as measured on the questionnaire, despite being instructed to cover the information.

Attitude scores, on the other hand, showed a different set of results. The campfire talk presented by youth naturalists did not modify visitors’ attitudes toward insects as compared to a control group. Adult naturalists were no better than youth in changing attitudes toward insects but were significantly more effective than the control group.

Attitude change during interpretive programs is certainly desirable but not regarded as essential. In this case, presenters wanted the audience to become more positive in their feelings toward insects. Perhaps this goal was too unrealistic because visitors held somewhat positive attitudes toward insects before the program started (3.59 out of a possible 5 points). Even if program quality was exceptionally
good, a “low ceiling” (only 1.41 points) might have hindered any further improvement in attitude scores.

On program delivery, both youth and adult naturalists performed well, as measured by audience responses. However, visitors rated adult naturalists significantly better than youth. This result might be expected, as the amount of experience between youth and adults was substantial. Despite the fact that youth naturalists were novices, still they were rated by audiences within one point of perfection (0.61). Perhaps this result is due to the training received from USFS personnel and/or numerous practice sessions.

**Trail Hike**
The trail hike presentation was successful in changing visitors’ knowledge about forest fires. The “average” visitor in a control group knew less than half of the questions on a test of fire knowledge (3.91 correct out of eight questions). After the hike, both youth- and adult-led groups made statistically significant gains in knowledge scores. Despite being significantly different from the control group, neither treatment was more effective than the other. In other words, youth and adult naturalists were similar in their ability to change the knowledge levels of visitors with regard to the importance of forest fires.

The attitudinal effect of the trail hike on recreationists was significant when compared to a control group. However, adult naturalists were no more effective than youth in changing visitors’ attitudes about forest fires. Because visitors’ attitudes toward forest fires were relatively low in the control group (2.76), they showed great potential for improvement. Yet an information-based interpretive program only showed moderate success in changing visitors’ attitudes.

As far as the program delivery aspects of the trail hike were concerned, both youth and adults were rated highly by audiences. Statistically speaking, however, adult naturalists were no better at delivering the interpretive program than the youth. This finding could reflect the training and practice that youth naturalists received. Alternatively, it is possible that visitors realized weaknesses in the youth’s presentation and formed a compassion-based judgment instead of rating them objectively.

**Program Comparison**
The trail hike produced higher knowledge scores than the campfire talk. Although its meaning is unclear, this finding could be the result of processing interesting facts about forest fires. Perhaps the information made an impact on visitors and they committed it to memory, at least in the short term.

The attitude scores, however, revealed an opposite pattern. Despite learning new information on the trail hike, visitors were reluctant to change their attitudes about forest fires. Visitors appeared more willing to change their attitudes on less salient topics (insects) than on controversial issues (forest fires). Perhaps the relatively small gains in attitude scores (less than one point) were due to ingrained beliefs, making them highly resistant to change. (After all, Smokey Bear has warned the U.S. public repeatedly for more than 50 years about the dangers of forest fires.) Perhaps visitors regarded the talk on forest fires as part of a government “propa-
ganda” campaign and minimized its significance. Whatever the case, it appears that it will take more than one exposure to modify these opinions.

Practical Considerations and Solutions
Conducting field-based research provides a unique opportunity to test theoretical principles, yet it is not without problems. In this study, most visitors attended only one interpretive program—the campfire talk or trail hike. However, those who attended consecutive programs (either campfire talks or trail hikes) slightly contaminated the experimental design. Loss of subjects occurred, but only during the campfire program. The crowded nature of these shows conducted after nightfall made it easier for people to exit the campfire setting without completing a questionnaire. Little attrition occurred on the trail hike because barriers, either structural or psychological, fostered greater compliance.

Selecting a quasi-experimental design, along with the above-mentioned problems, decreased the internal validity of the study. Practically speaking, however, none of these factors can be entirely overcome in field-based research. There is a trade-off between internal and external validity (i.e., when one is high, the other is low, and vice versa). In this case, the decision was made to emphasize external validity by using a field-based setting, which permits wider generalizability of the results.

Attitude change can result from listening and understanding the message being presented by the interpreter(s). In this study, it appeared that persuasion resulted from processing the interpretive message, both in the campground and on the trail hike. Bolstering this conclusion is the fact that knowledge scores significantly increased at both locations, most likely due to interpretive programming.

Caution should be exercised in attempting to explain attitude change solely as a function of information processing. The information component was the common factor in the treatment groups at both locations. However, the presence of other factors, either alone or in combination, could have caused attitudes to improve. It is virtually impossible to test all of the variables independently for their unique contributions because many are contingent upon one another. For example, visitors could have changed their attitudes as a result of the interpreters’ enthusiasm and not the message itself. This alternative explanation is more plausible for the campfire talk than the trail hike because the latter showed no differences in program delivery between youth and adult naturalists. If visitors changed their attitudes as a result of information processing, then it is predicted to be long-lasting.

A second prediction about attitudinal change involves modeling. People can change their attitudes through observational learning, deriving “new” beliefs that are not based exclusively on factual information. For example, adults might appear to be more credible than youth naturalists, despite using the same message. Visitors at the campfire talk and trail hike, however, rated interpreters similar in their ability to promote affective changes. The presence of adult naturalists at the programs directed by youth may have influenced audience evaluations. Results might be different had youth naturalists conducted the programs alone.
Youth naturalists never outperformed adults on any of the measures (knowledge, attitudes, and program delivery) on either interpretive program. Audiences rated adult naturalists consistently higher, with two of six measures being significantly better than the youth. In contrast, the data showed that youth naturalists were equally as effective as adults on four out of six measures. It should be noted that audiences rated youth naturalists equivalent to a control group only once (actually, youth scored higher than the control, but the differences were not statistically significant).

Should agencies use youth naturalists? The answer largely depends on what outcomes are desired, along with other factors such as budgetary concerns. With intense preservice training and close supervision, youth naturalists can produce cognitive and affective changes in visitors during interpretive programs. Furthermore, youth can be as effective as adult naturalists in this regard. It is reasonable to assume that youth can be as effective in similar settings.

REFERENCES


ENVIRONMENTAL INTERPRETATION
FOR A DIVERSE PUBLIC:
NATURE CENTER PLANNING FOR
MINORITY POPULATIONS

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Abstract:
The increasing cultural and ethnic diversity in the United States should challenge environmental interpreters to offer programs that attract a variety of audiences. This study investigated minority involvement at Florida’s nature centers through a census of 77 nature center directors throughout Florida as well as a survey of 21 minority staff working at these educational facilities. School programs at the nature centers are the primary method for reaching minorities; few programs involve minority adults from the community. The focus of the one-day visits for students is primarily nature awareness, with little emphasis on influencing knowledge or attitudes about local issues, human-environment relationships, or actions to reduce environmental problems. The results indicate the need for nature centers to expand their programs to offer long-term, community-based environmental interpretation for a diverse public.

Keywords:
Environmental education, Florida, interpretation, minorities, nature centers, nonformal settings, survey.

INTRODUCTION
Ethnic and racial minority populations in the United States are growing more rapidly than white, non-Hispanic populations. Projected figures for 1995–2025 estimate increases of 104% for Hispanics; 43% for blacks; 145% for minorities of non-Hispanic origin; and only 7% for the white, non-Hispanic public (U.S. Bureau of the Census, 1993). If current trends continue, black and Hispanic residents will account for 30% of Florida’s population by 2010 (Duda, 1987). Eight of the 67...
school districts in Florida now represent a “majority-minority,” and this number is expected to grow (Hinman, 1997). The expansion will result in increasing numbers of individuals from “minority” groups employed in decision-making positions that influence environmental policy. A focus for the future must include mobilizing strategies for environmental interpretation that address and attract minority groups.

Several studies have examined differences in environmental concern between minority and non-minority populations (e.g., Bullard, 1983; Caron Sheppard, 1995; Kreger, 1973; Kellert, 1984; Hamilton, 1989; Noe & Snow, 1990; Taylor, 1989). As summarized in Table 1, minorities have exhibited less interest in nature-oriented issues, yet conflicting results among studies reveal the complex interaction of variables in each study and the need to measure environmental interest with instruments relevant to the respective group (Arp & Kenny, 1996).

Educated, wealthy whites dominate memberships in national environmental organizations, yet many members of local environmental groups are from minority populations or lower socioeconomic groups (Bryant & Mohai, 1992; Bullard, 1990). In addition, issues such as toxic waste and pollution have garnered support among lower income minorities (Anthony, 1982; Arp & Kenny, 1996). Recent literature, however, points to the lack of emphasis in environmental education and interpretation directed toward the interests of ethnic and racial minorities (Blahna & Toch, 1993; Gibson & Moriah, 1989; Gough, 1993; Lewis & James, 1995).

These findings reveal the importance of diversifying environmental interpretation strategies to attract target publics. Understanding variables such as the age, socioeconomic status, income, area of residence, interests, and priorities of target audiences is a necessary step to providing germane experiences that effectively connect people to their environment. Through front-end evaluation and planning, interpreters can design programs relevant to the needs, concerns, and desires of specific audiences (Poole et al., 1996). Such targeted approaches can encourage proenvironmental thinking and action.

Nature centers offer great potential for generating motivation, interest, appreciation, and attention required for effective learning about the environment (Koran & Lingino, 1982; Gennaro et al., 1983; Iozzi, 1989; Lizowski & Disinger, 1991; Ryan, 1991). Nature centers provide settings for community-based environmental programs, provided that interpretive goals and instructional methods are relevant to local audiences and institutions. Yet a survey of 1,225 nature centers in the United States revealed that less than 15% of the centers considered providing information about local environmental issues a major goal (Simmons, 1991). By reaching out to local publics, nature centers can develop action-oriented environmental programs relevant to minorities and other groups that may not have had long-term interaction with natural areas, early childhood experiences in nature, or the influence of adult role models involved in environmental activities—all factors that traditionally play a major role in developing an interest in environmental issues (Palmer, 1993; Peterson, 1982; Tanner, 1980; Votaw, 1983).

Children raised in urban areas have few opportunities to develop positive experiences with wildlife through direct contact with the natural environment. As a result, minorities and others from urban backgrounds may be less interested in activities centered on traditional program themes such as nature appreciation. A
recent study of field trips by urban students to wildlands revealed that many students experience fears and anxieties in natural areas (Bixler et al., 1994). Nature centers in urban areas offer opportunities for environmental interpretation appropriate to minorities and other public groups in nonrural settings. However, little attention has been given to the use of nature centers for increasing environmental interests of minorities.

The purpose of this study was to investigate the level of involvement of minorities at Florida’s nature centers and the kinds of programming for these populations. The study used a written questionnaire to census the directors of 77 nature centers in Florida regarding minority participation in the centers’ environmental interpretation programs. A follow-up survey was sent to 21 minority staff at the centers to gather information regarding their views on program content in environmental interpretation. The results of the questionnaires were synthesized to make recommendations for improving nature center programming for minority groups.

METHODS

Survey of Nature Centers

Questionnaire development. A 17-item questionnaire was developed and sent to 77 nature center directors throughout Florida according to standard survey design techniques (Bernard, 1988; Dillman, 1978). The preliminary questionnaire was reviewed by five University of Florida faculty members with expertise in environmental education, followed by a pilot test with staff members from two nature centers. The final version of the questionnaire used a combination of closed and open-ended questions to address the following issues: (a) Which centers have ethnic and racial diversity in their educational staff? (b) What is the diversity of nature center audiences? (c) What program methods are used to reach out to diverse groups of audiences? (d) What is the focus of the programs at the nature centers? (e) What are the basic themes and approaches to the educational activities offered at the centers? and (f) What are the perceived constraints to strengthening the centers’ educational programs for minority audiences?

Sampling frame. The 77 nature centers involved in this study were selected from four comprehensive lists of nature centers in Florida: A Florida Directory for Environmental Education Programs (Florida Department of Education, 1987); Directory, Natural Science Centers (Natural Science for Youth Foundation, 1991); Directory of Wildlife Resources (Cooperative Extension Service, 1991); and Guide to Florida State Parks (Department of Environmental Protection, 1994).

Centers that met both of the following criteria were included on the list of nature centers to survey: (a) a center had to be located in Florida and could be classified as a facility, interpretive center, nature center, visitor center, rehabilitation center, educational facility, or natural history museum; and (b) the center had to be engaged in educational activities. Several terms were used as indicators of educational effort in the directories, such as guided tours, education, science education, environmental education, nature study, community programs, school programs, outreach programs, and so forth.

To encourage a high response rate, telephone calls were made to each center selected for the final mailing list to ensure a correct address. Centers that could not
Table 1. Studies involving environmental concern and interest of minorities

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<th>Major findings</th>
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<td>28 black university</td>
<td>Less environmental interest and concern among blacks than whites; other priorities reported such as personal survival.</td>
</tr>
<tr>
<td></td>
<td>students</td>
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<tr>
<td>Meeker et al.,</td>
<td>Racial minorities</td>
<td>Incongruence between initial purpose of national parks for nonurban recreation and culture of racial minorities; need to incorporate these beliefs into environmental education.</td>
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<td>1973</td>
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<tr>
<td>Buttel, 1973</td>
<td>General</td>
<td>Need for incorporation of new educational approaches into the environmental movement to appeal to a larger variety of interest groups.</td>
</tr>
<tr>
<td>Washington,</td>
<td>100 black Denver</td>
<td>More than 60% indicated an interest in wildlife and the environment; 87% think blacks should become more involved with conservation and wildlife issues; 67% were dissatisfied with their current knowledge of wildlife.</td>
</tr>
<tr>
<td>1976</td>
<td>residents</td>
<td></td>
</tr>
<tr>
<td>Bullard, 1983</td>
<td>Blacks</td>
<td>Black and other minority communities often situated close to pollutant sources; such issues have educational potential for raising environmental concern.</td>
</tr>
<tr>
<td>Kellert, 1984</td>
<td>3,107 U.S. citizens</td>
<td>Insignificant attitudinal differences between blacks and whites of low socioeconomic status; large differences between college-educated, high-income blacks and whites.</td>
</tr>
<tr>
<td>Kellert, 1985</td>
<td>267 children</td>
<td>Low knowledge/interest in wildlife for urban residents and blacks; black–white knowledge gap still present in 11th grade; focus on urban, disadvantaged youth.</td>
</tr>
<tr>
<td>Hamilton, 1989</td>
<td>502 blacks</td>
<td>Personal safety issues effectively elicit environmental concern.</td>
</tr>
<tr>
<td>Taylor, 1989</td>
<td>Blacks</td>
<td>Explains interaction between social–psychological, cultural, and experimental measuring errors in researching environmental concern of blacks.</td>
</tr>
</tbody>
</table>
### Table 1. Studies involving environmental concern and interest of minorities (cont.)

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Population studied</th>
<th>Major findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gibson &amp; Moriah, 1989</td>
<td>Case study of 1 black child</td>
<td>Feelings of alienation from natural areas and nature centers; interpretive centers must meet interests and expectations of minorities.</td>
</tr>
<tr>
<td>Dolin, 1989</td>
<td>Blacks</td>
<td>Lack of environmental interest/knowledge explained by socioeconomic status, personal priorities, mythology, lack of access to wildlife, identification with slavery; need to ask appropriate questions in attitude measurements.</td>
</tr>
<tr>
<td>Noe &amp; Snow, 1990</td>
<td>Hispanic park users</td>
<td>Park use affected Hispanic attitudes; users' attitudes were more similar to non-Hispanic users than Hispanic nonusers.</td>
</tr>
<tr>
<td>Wallace &amp; Witter, 1990</td>
<td>3,427 urban Missouri adults, 28 black adults</td>
<td>Less interest in nature-oriented recreation among blacks; favored community/group-oriented activities; nature centers greatly needed.</td>
</tr>
<tr>
<td>Blahna &amp; Toch, 1993</td>
<td>Ethnic magazines</td>
<td>Environmental reporting in ethnic magazines was less frequent than in nonethnic magazines and was incorporated into larger articles on ethnic identify, economic opportunity, civil rights; must incorporate environment into minority concerns.</td>
</tr>
<tr>
<td>Gough, 1993</td>
<td>Minorities</td>
<td>Need to incorporate views of all races and cultures into environmental education.</td>
</tr>
<tr>
<td>Bullard, 1994</td>
<td>Urban adult minorities, various locations</td>
<td>Activism stemmed from polluted environments, environmental racism, and need for justice.</td>
</tr>
<tr>
<td>Caro &amp; Ewert, 1995</td>
<td>Hispanic forest users</td>
<td>In program planning, consider influence of acculturation on attitudes toward the environment; length of time in United States significantly predicts acculturation level.</td>
</tr>
<tr>
<td>Lewis &amp; James, 1995</td>
<td>Minorities</td>
<td>Explains seven misconceptions of minorities and their environmental interests; diversify educators and methods to attract a diverse audience for environmental education.</td>
</tr>
<tr>
<td>Caron, 1989</td>
<td>400 southern, urban residents</td>
<td>Both similarities and differences between black and white environmental concern; blacks supported no limits to growth, planning to avoid risk, and had less concern for pollution; race was a significant predictor of concern.</td>
</tr>
</tbody>
</table>
be contacted were eliminated from the list. All questionnaire packets were mailed to the current director of the center in June 1994. The packets included a copy of the questionnaire, a postage-paid reply envelope, and a personalized letter describing the goals of the study. Three weeks following the first mailing, a reminder postcard was sent to centers that had not responded. The remainder of the non-respondents were contacted by phone three weeks later and again encouraged to reply. All data were analyzed using SAS statistical package (SAS Institute, Inc., 1988). Frequency distributions were calculated, and data were categorized for statistical analysis using chi-square tests.

Survey of Minority Staff at Nature Centers

Questionnaire development. Follow-up research to the initial survey included a 19-item questionnaire sent to 21 minority staff working at the nature centers in the study in order to enhance our interpretation of the general survey. This questionnaire used both closed and open-ended questions to address the following issues: (a) What experiences and influences do staff feel are responsible for developing their current interest and active position in the environmental field? (b) What experiences should educators provide to minority groups to interest people in environmental programs? and (c) What is the relative importance of various environmental interpretation topics and approaches to be offered at nature centers?

Sampling frame. Participants were selected according to their race/ethnicity and their potential involvement in visitor education and interaction. Of the 56 minorities working in the nature centers identified in the initial survey, 28 minorities were involved with visitor education and only 21 still worked at the centers, as confirmed by telephone calls. In August 1995, the questionnaire packets were sent to either the nature center director or directly to the staff member if requested by the director. One week after the packets were mailed, the directors were contacted by telephone to ensure that the packet had arrived and been given to the appropriate staff person. Three weeks after the mailing, all nonrespondents were contacted by telephone and sent a replacement packet if needed. Approximately three weeks later, telephone calls were made again to all nonrespondents.

Results

Survey of Nature Centers

Sixty-three nature centers responded to the questionnaire sent to 77 facilities, an 82% response rate. The following results summarize responses from the surveys. Note that some respondents did not answer every question.

Representation of minority groups on staff. Minorities work at less than half (46%) of the centers. These 56 minorities (7 American Indian, 4 Asian/Pacific Islander, 29 black, 15 Hispanic, and 1 other) constitute approximately 8% of the staff at these centers. Only 28 minority staff work in positions with potential for visitor education and interaction, and were included in the follow-up minority staff questionnaire.

Minority attendance at interpretive programs. Most centers (38%) reported a program audience composed of 11% to 25% ethnic minorities (Figure 1). Twenty-eight percent of the centers reported 1% to 10% minority participation.
large majority of centers (98%) responded that minorities attend programs with school groups, with fewer centers reporting that minorities participate through nonschool and community groups, with families, or through groups such as scouts and churches (Figure 2). When asked how most minorities attend environmental education programs, 93% of centers reported minorities came with organized school groups.

Twenty centers (35%) reported that ethnic minorities constitute 11% to 25% of the communities within 5 miles of their facility. Almost half of the centers (44%) reported a minority representation in the surrounding communities of 10% or less. Centers with low percentages of minority participation had fewer minorities living in areas surrounding the center ($\chi^2=11.9$, $p=0.003$).

The majority of respondents (45 centers) reported that minorities most often participate through on-site programs. However, centers (44%) with low minority
participation encountered more minorities off site, relative to centers with higher percentages of minorities attending their programs ($\chi^2=7.9, p=0.019$).

**Programs for minority audiences.** Almost two-thirds of the centers make little or no attempt to encourage minorities to participate in their educational programs, whereas 39% actively attempt to increase minority participation (Figure 3). Thirty-six percent of the centers design programs specifically for culturally diverse audiences. Activities included cultural themes/displays, translating materials into other languages, applying for grants to increase cultural diversity, and tailoring programs to specific audiences. Twelve percent of those who elaborated on this question felt that the subject matter they presented is general enough to be appropriate for all audiences.

Forty-five centers (74%) offer off-site or outreach programs to schools and other organizations in the local community. A variety of talks, materials, trips, and environmentally related assistance—such as nature trail development—were identified.

**Programs offered.** The centers provide a wide range of programs (Figure 4); a high percentage offer guided nature walks (83%) and nature trails (79%). The majority of centers emphasize hands-on (84%) and outdoor activities (94%) as instructional methods in more than half of their programs. Fewer centers (53%) use exhibits in more than half of their programs, despite the high percentage of centers offering exhibits (91%).

Eight questions on the survey addressed programming emphasis placed on spe-

![Figure 3. Centers' planning and activities targeting minority groups.](image-url)
cific subject areas and themes. Nature awareness and science education were the dominant subjects of the centers’ environmental education programs. Ninety-five percent of the centers emphasize nature awareness, and 90% focus on science education in more than half of their programs (Figure 5). The emphases on various subject areas shown in Figure 5 indicate that local environmental issues, human-environment relationships, and actions that help reduce environmental problems were much less of a focus than nature awareness and science education.

**Programming for school groups.** More than half of the centers devote at least 50% of their programming efforts to school groups (Figure 6). Centers directing more programming effort to school groups tended to have greater numbers of minorities in their audiences ($\chi^2=6.0, p=0.05$). Most of the centers (83%) reported annual, one-time visits made by schools, whereas only 19% reported multiple visits during one school year. Overnight visits were cited by only 6% of respondents. Forty percent of the centers give both previsit and postvisit materials to classes attending their programs. Many centers (47%) provide other resources, such as teacher workshops and guides, on-site materials, curriculum materials, brochures/information sheets, and previsit and postvisit programs.

**Barriers to effective environmental interpretation.** Most centers reported funds, staffing, time, and transportation as the greatest obstacles to effective envi-
Figure 5. Percentage and type of program emphases reported by centers.
ronmental interpretation (Figure 7). Ten respondents offered additional suggestions on environmental interpretation for ethnic minorities: recruitment of minorities with environmental backgrounds to serve as role models; design of relevant, hands-on programs that are based on the participants' environment so they can relate to the information presented; and provision of transportation for participants.

**Survey of minority staff at nature centers.** Of the 21 minority staff members who interacted with the public as identified from the first questionnaire, 13 minorities responded to the survey for environmental interpreters (62% response rate). Although the sample size is too small to generalize, respondents' comments on the development of environmental interest and the content of nature center programming offer insight into this study.

**Development of environmental concern.** Respondents cited influences responsible for developing their environmental interest, which were categorized into four groups: experiences, organizations, habitats, and individuals. Most responses involved experiences, such as camping, observing environmental destruction, and reading about natural history. The minority staff members also rated the importance of various factors in influencing their concern for the environment. Living close to nature, a job, childhood experiences, frequent visits to natural areas, habitat alteration, and polluted environments were the greatest influences on these respondents.

**Views on program content.** Respondents rated the relative importance of topics in environmental interpretation, which included science education, nature awareness, local ecological processes, local environmental issues, teaching participants about their relationships with the natural environment, culture and history, global loss of biodiversity, and teaching actions to help solve environmental prob-
Figure 7. Barriers to effective environmental interpretation at Florida's nature centers.

Although all staff reported that each subject is important to environmental education, science education received the least support from respondents. Teaching participants about their relationships with the natural environment was seen as the most important topic by most staff, with nature awareness cited as the second most important subject. The other locally focused topics also were considered critical.

Specific approaches were suggested to improve the effectiveness of environmental education targeted at ethnic minorities: active and "hands-on" activities, programming for adults, long-term involvement/continuous experience, school programs, financial support, and nonschool facilities. Other suggestions included removing the participant's fear of nature and increasing participation of minorities by actively recruiting parents. Respondents also cited environmental interpretive strategies they believed would result in pro-environmental behavior changes. These answers fell into five areas: long-term involvement/childhood experiences; school experiences; adult education; showing how individual involvement can make a difference; and other experiential learning approaches (e.g., exploratory learning, tailoring programs to address environmental concerns, and active participation).

DISCUSSION

Representation of Minority Groups

Previous studies have shown the importance of having role models for educating minorities about the environment (Wallace & Witter, 1990; Gough, 1993). However, only 56 minorities work in less than half (46%) of the centers surveyed. Twenty-
eight individuals work in education-related positions, but few specialize in public education. One strategy to increase the visibility of role models for minorities visiting the centers would be to change positions of current minority staff to include interpretation duties while increasing the interpretive role of minorities already performing instructional tasks. Involving representatives of the target population in program planning and development would help in adapting programs to the audience’s frame of reference. For example, involvement of minorities in docent training would help incorporate cross-cultural sensitivity and minority population perspectives. Additionally, planning programs to interest community leaders, parents, and other adults would provide role models for environmental causes.

**Experiences of Minority Staff**

Responses given by minority staff regarding influences that led to their environmental sensitivity—such as childhood experiences with nature, observing environmental destruction, and involvement by parents or relatives—are similar to those found in previous life-experience studies that did not focus on minorities (Palmer, 1993; Peterson, 1982; Tanner, 1980; Votaw, 1983). These particular influences appear to be effective approaches for developing environmental concern. Certain early childhood experiences are a primary support mechanism for developing this environmental interest that leads to action. However, many minority adults have not had these childhood experiences. Educators also must provide such persons with pertinent environmental information, relevant to the audience’s culture and local environment. This will require programs as diverse as the clientele they serve.

**Minority Attendance at Environmental Interpretive Programs**

Forty-two percent of the centers reported that minorities constitute 11% to 25% of their audience, but no center reported more than 75% of their program audiences as ethnic minorities. Additionally, 35% of the centers stated that 11% to 25% of the residents living within 5 miles of their center are ethnic minorities. The potential for minority participation at the nonschool/community level is great, considering the community atmosphere of nature centers and the high percentage of minority populations surrounding many centers.

In a survey of urban blacks, Wallace and Witter (1990) found that nature centers were rated as “greatly needed” more often than other nature-related activities, such as bird watching, hiking, and others. The survey of Florida nature centers revealed that a high percentage of minority participants came from areas with more minority residents than those with low participation rates in their programs. However, it appears that the higher minority participation is from the schools in the local area and may not reflect successful programming for minorities.

**Emphasis on School Groups**

An overwhelming majority (98%) of the centers reported that minorities attend programs through school visits. For 94% of the nature centers, most minorities attend environmental interpretive programs through school groups. Further indicating the high involvement by school groups, 41% of the centers devote 70% or
more of their programming effort to school groups, and more than half (62%) devote at least 50% of their efforts in this direction.

A strong link exists between schools, nonformal education centers, and the current status of environmental interpretation for minorities. Yet the majority of these school visits (83%) provide only annual, one-time visits. If these school visits are insufficient or ineffective, then minorities are not being adequately reached through nature centers. Studies have identified the importance of long-term interaction with the natural environment in developing environmental sensitivity (Palmer, 1996). Centers can use their existing school programs as a starting point for providing environmental information to adults in the local community, setting the stage for long-term activities relevant to local minority families.

**Programming for Minority Audiences**

Centers that attempted to increase minority participation in their programs cited activities classified in five categories: applying for grant money, tailoring programs to specific audiences, using cultural themes/displays, translating programs/materials into other languages, and presenting subject matter appropriate for all audiences. The minority nature center staff indicated additional methods to improve the effectiveness of environmental interpretation for minorities. Their responses included: active participation in programs, focus on adult education, provision of long-term/continuous experiences, financial support, removing the fear of nature in visitors, and increasing participation of minorities by actively recruiting parents.

Interestingly, with the exception of financial support, none of the nature center directors mentioned variables that were similar to those reported by the minority staff. Incorporating the program characteristics suggested by minority staff at nature centers into current programs should improve the overall program impact for minorities. The minorities also reported several variables not mentioned in the nature center survey that researchers believe develop environmental sensitivity (e.g., Palmer, 1996): active participation, involvement of adults, and long-term/continuous experience.

Most of the centers (74%) offer outreach programs to schools and other organizations in the local community. These programs covered a variety of topics, yet only one center mentioned specifically targeting minorities through outreach efforts. As one respondent indicated in the survey:

We certainly would welcome any so-called minority participation. We just find no interest in our facility by local minority leaders. They seem to not want to be involved with any operation outside of their local area. This is the idea I get after talking with them. I have invited them to visit the facility and have toured them through the facility on several occasions, but that is the end—a dead end.

Audience planning that makes the environment relevant by placing information in an appropriate social context could alter this situation. Nature centers can incorporate outreach methods into their existing school programs to establish contact with various minority groups, discover what program themes interest them, and begin to build long-term, community-level programs relevant to local minor-

*Journal of Interpretation Research*  
*Vol. 2, No. 1, Winter 1997*
ity groups. Creativity in program planning also is needed. Several organizations have successfully attracted minority audiences by providing incentives, such as a party or picnic, to involve the whole family (NAAEE, 1987). This was a first step toward being viewed as a resource to meet the needs of the target populations.

**Emphasis on Interpretive Methods and Subjects**
Most centers reported high use of outdoor and hands-on experiences, typical of many nature centers (Morgan, 1996). Wallace and Witter (1990) found black adults were interested in participating in hands-on activities at nature centers. Other studies have shown the benefits of active participation in instructional activities (Ramsey & Hungerford, 1989; Ramsey et al., 1992; Wals et al., 1990).

Compared with the high percentage of centers offering exhibits, the number that use them in their educational programs is low. Programs can include discussions centered on exhibits to attract persons who initially may be less interested in an outdoor activity such as a nature hike. This would increase the diversity of interests captured by the program theme. The dominant subject area of the programs is nature awareness, with an emphasis also on science education. However, local environmental issues, direct relationships with program participants, and actions that help reduce environmental problems receive much less attention. The high percentage of centers that emphasize nature awareness in more than 75% of programs—as opposed to teaching issues, relationships, and actions—indicates the strong dependence on traditional interpretive approaches. Studies by Bullard (1994) and Hamilton (1989) reveal the need to incorporate issues, relationships, and actions into programs that emphasize nature awareness. Such integrated strategies may attract target audiences uninterested in traditional environmental issues such as nature appreciation.

Integrating nontraditional topics into educational programming is necessary to involve many persons who have concerns more immediate and pressing than nature awareness. Showing links between social and environmental problems may generate environmental concern. The minority staff believed teaching participants about their relationships with the natural environment was the most important topic for environmental interpretation, a principle long recognized in interpretation literature (e.g., Tilden, 1957). Ironically, science education received the least support from the surveyed minorities, whereas this subject was second in emphasis at the centers. Most centers emphasized culture and history in less than a quarter of their programs.

The incorporation of environmental issues into programs does not imply that nature awareness should be deemphasized. Rather, the holistic nature of environmental education demands the integration of all subject areas into programs offered at centers, which should increase the diversity of persons attracted to nature centers. Explaining direct relationships between program participants and environmental problems also creates the interest and motivation necessary for action. Educators can use issues to gain the interest of various audiences, including minorities, while teaching the skills necessary for action. Teaching skills, as opposed to knowledge alone, encourages pro-environmental behavior (Hines et al., 1987; Ramsey & Hungerford, 1989; Simmons, 1991). Only a small number of centers place an in-
structural emphasis on skills, though these types of messages are key to changing behaviors and actions. Environmental interpreters should be trained to incorporate “take-home” messages into their programs to encourage action at the individual and community level. Peterson (1984) stresses the importance of involving the community in environmental issues. More recent studies have found that local issues are effective at influencing environmental action, especially by minority communities (Bullard, 1994; Hamilton, 1989).

The current lack of emphasis among nature centers on issues may be due to political reasons (Peterson, 1984). Centers have reported that environmental issues may create problems between funding agencies and the centers. In a qualitative study of interpretive centers, Peterson found centers were careful about which subjects they used in their programs and clearly focused on traditional interpretive approaches, not active involvement in issues.

The overwhelming emphasis on traditional themes of nature awareness among nature centers may reflect demand by school groups. As sensitivity to the environment begins to develop in the childhood years, these centers may be focusing on nature appreciation to target younger audiences. Yet appropriate issues, skills, relationships, and actions exist that encourage children to move from environmental awareness to action (Wals et al., 1990). Incorporating issues appropriate for both children and adults can set the stage for family-oriented programs as well.

**Barriers to Environmental Interpretation**

Funds, staff numbers, time, and transportation were cited most often as barriers to effective environmental interpretation. Studies evaluating barriers to environmental education perceived by schoolteachers have found a greater emphasis on lack of knowledge and program materials (Cherif, 1992; Ham & Sewing, 1988). Nature centers provide a valuable resource with program materials and knowledgeable staff. Thus the results indicate a strong potential for partnerships between schools and nature centers to develop ongoing community-based environmental interpretation for ethnic minorities. By reaching out to minority populations, nature centers also may tap new funding sources, such as local Rotary Clubs and chambers of commerce. New and diverse constituents may rally new resources.

**Conclusion**

Florida’s nature centers rely primarily on visits by school groups for educating the growing minority populations in the state. These results raise questions concerning the involvement of adult minorities from the local communities. Furthermore, 83% of the centers reported that school groups make annual/one-time visits to the center. The educational impact of single visits to an area may be limited. In addition, nature awareness is given much higher priority in programming than local environmental themes.

Now is the time to increase participation of minorities in environmental interpretation, helping to ensure future leaders who are able to make informed environmental decisions. Nature centers must understand the backgrounds and interests of their potential constituents and plan their interpretive programs accordingly. Such
program planning in conjunction with the use of existing ties with schools can form the foundation for community partnerships. The common tie between local issues and communities can be used in environmental interpretation to encourage adult participation and to gain support for the local environment and the nature center.

If residents view a center as a local resource, long-term interaction with the natural environment will be more likely for both adults and their children. Directly asking program participants and people from local communities what their interests are and how the center can better serve them would provide site-specific insight to guide programming. Such planning would represent the beginning of long-term environmental interpretation that meets the needs of the increasing minority populations in Florida and throughout the United States.

REFERENCES


CONSTRUCTING A SOCIOLOGICAL
INTERPRETATION

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INTRODUCTION

The focus of this essay is the need for sociological thinking in interpretation. As with many personal writings, though, the story begins in a context that seems at first glance rather far removed from the main point.

Since 1990, I have been researching and writing about the process of gambling tourism development in two famous Colorado gold-mining towns, Central City and Black Hawk. Situated only a mile apart in the foothills of the Rocky Mountains about an hour west of Denver, the two towns share a unique geography and history. In 1859, John Gregory's discovery of a rich gold vein in the area came to symbolize the start of the Colorado gold rush. The U.S. Census of Population reported that about 7,000 people had settled in local towns and mining camps by 1880. Many more wandered through the area seeking their fortunes in "the richest square mile on Earth."

Gold mining declined slowly until 1917 and precipitously thereafter. In 1932, the pioneer-era Central City opera house was renovated and reopened for summer theater festivals. This time, amenity resources were "mined": the resource-scarred landscape and a recreated mining town culture were presented for the enjoyment of tourists. But opera and festivals were seasonal pursuits, and Central City and Black Hawk settled into the quiet slumber that characterizes so many former resource-dependent towns.

In 1989, a group of community leaders seeking a solution to what they termed "locally desperate economic conditions" suggested introducing small-stakes limited gambling in Central City, Black Hawk, and another historic Colorado gold-mining town, Cripple Creek. Gambling would be an "added attraction" to the towns, would foster local economic development, and would be taxed so as to provide revenues for historic preservation. The proposal seemed both reasonable

Note: Accepted September 1997.
and appealing, and nearly 60% of Colorado voters supported the initiative in the November 1990 general election. Gambling was set to begin October 1, 1991.

Gambling development turned out to be both much more and much less than had been promised. Shortly after approval, “gambling” was redefined as “gaming,” a term preferred by the industry. Huge externally financed casinos sprang up nearly overnight, displacing local business people and renters. Those who owned property could sell for profit; those who had few resources were displaced. Main streets in the two towns were turned over to casino projects and events, while local places and people disappeared. Today more than 10,000 gamblers visit the 31 casinos on a typical summer day; but about half the population of Central City and Black Hawk (which totaled about 550 in 1990) has moved away. Gaming tourism development appears to be highly successful, with the philosophical move from gold mining to “wallet mining” (The Little Kingdom Come, 1991, p. 1) accepted by many as a natural extension of the area’s western heritage.

**Heritage Interpretation in the Context of Gaming**

Beyond traditional impacts, the development of gaming attractions in Central City and Black Hawk provides a fascinating study of interpretation’s role for tourism in heritage settings. “Heritage” refers to the sites, artifacts, and meanings of cultures, and includes the monuments and relics, collective memories, cultural products, and landscapes of a people and place (Tunbridge & Ashworth, 1996; Boniface & Fowler, 1993). Heritage was important in the Colorado gaming developments for several reasons. The towns involved were each notable in terms of their contributions to Colorado mining history and statehood. Each town had an existing infrastructure of historic buildings, some of which were listed on historic registers; indeed, the entire area around Central City and Black Hawk had been designated as a National Historic Mining District by the National Park Service. The cultural and natural histories of the area were highly meaningful to local residents and others who felt attachments to the place. Moreover, gambling tourism development had been rationalized on the basis of its tax contributions to local and state historic preservation.

Gaming tourism development created a “social problem” (Specior & Kitsuse, 1987) that needed resolution: How would the two towns begin to consciously identify and describe their heritage to outsiders? The development presented an unprecedented opportunity for local government agencies and others to create a program of messages and presentations that would highlight and interpret the significant histories. These local government-sponsored efforts of image making and story telling had many commonalities with resource agency interpretation: interpretive programs could be used to expand and enliven the experiences of tourists while simultaneously facilitating the management of visitor behaviors to ensure community respect and promote a community image. The complexity of inter-

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¹My 1996 book, Riches and Regrets: Betting on Gambling in Two Colorado Mountain Towns, documents the social, cultural, economic, political, and environmental impacts of gambling development for Black Hawk and Central City.
interpreting community heritage in the midst of gaming tourism development, though, introduced several problems that do not typically arise in more traditional natural resources interpretation. For example:

A. Numerous agencies (one county and two town governments, a marginally active chamber of commerce, various historical organizations, about 30 casino companies, and others) had a direct interest in the presentation of local history, and different agencies had divergent interests and unequal power over which stories were told and how those stories were told.

B. Rapid tourism development limited preparation time to develop an integrated interpretive program. The early focus seemed to be more on preparing infrastructure rather than on investing in local culture.

C. Local government-sponsored “community stories” about local history continually competed against the “commercial views” offered by the local tourism industry.

D. The historic architecture and heritage context were manipulated and revised over the course of the development, rendering some important interpretive stories inconsequential.

E. As new employees and residents moved into the community and social contexts changed, place meanings and interpretive interests also changed.

Several examples illustrate the problems of heritage interpretation in the context of a rapid-growth tourism development such as gaming. First, the physical landscape was reformed with new construction. Casino renovations to some historic buildings resulted in unauthentic external structures and artificial interior features. In several cases, for example, only the facades of historic buildings were left standing while new-buildings—made-to-look-old were constructed around the front shells. Visitors were unable to identify which ones were “real” and which were not, and public information materials usually did not explain. Second, in contrast to most community stories about historic events and people, casinos sometimes produced and marketed a fantasized version of local history in an effort to entice patrons into their establishments. The contrived histories were usually formed around an exaggerated account of an imagined “Wild West” that bore little resemblance to local history. One casino, for example, had greeters dressed as dance hall girls; another employed doormen costumed as gangsters; and another developed a small exhibit of an exploding gold mine in a corner of its building. Meanwhile, more accurate renditions of local history—such as tales of pioneers who mined in the area or the histories of notable past residents—were ignored. Reality was apparently not “real enough” or entertaining enough for the casino industry.

Oddly enough, the publicity tactics used by the casinos were eventually adopted by the Central City government. A visitor brochure produced by Central City reinforced the casinos’ “historical illusions” by claiming falsely that “those who settled in Central City were never hard up for wild times….Central City’s Red Light District was notorious.” Available historical accounts, however, do not support these exaggerated claims. Nevertheless in 1994 the Central City council
continued the fantasy by naming as “city ambassadors” a performance troupe called the “Shady Ladies of the Motherlode.” During a guided tour through their “Parlour House” in summer 1997, a costumed representative of the group gave an informative and entertaining presentation about the history of prostitution in the “Old West.” Yet nothing in the presentation referred specifically to Central City’s history!

IDEOLOGY AND INTERPRETATION

Current tourism literature is replete with calls for more, and more “authentic,” interpretation in heritage settings (Nuryanti, 1996); using interpretation to encourage “mindfulness” among heritage tourists (Moscardo, 1996); involving visitors as participants in interpretive practices (Crang, 1996); linking interpretation and sustainable tourism (Bramwell & Lane, 1993); and understanding the variety and complexity of heritage tourism audiences who require and deserve equally varied and sensitive interpretive experiences (Boniface & Fowler, 1993). Yet, six years after the start of gambling in Black Hawk and Central City, the hope for a coherent and consistent community-sponsored public interpretive program remains unfulfilled.

What I find most noteworthy about the relationships between interpretation and this form of heritage tourism, though, is the ideological nature of public agency involvement in the process. Certainly local governments have ideological reasons for their own growth agendas (Molotch, 1976), but it is only very recently that researchers have acknowledged that political, social, and economic goals are also central to the conduct and content of interpretation. As Tunbridge and Ashworth (1996, p. 28) explained, “Interpretation is ideological in the sense that sets of ideas are being conveyed through the heritage product...[even if]...it can be shown that there are many such possible messages, that producers are often insufficiently aware of their message-delivering role or that recipients...receive a message quite different from that intended.”

The consideration of ideology, power, and politics in interpretation introduces a series of sociological issues that are not usually addressed within more traditional empirical research in interpretation. Commonly interpretation research has a social-psychological orientation, with relevant research questions being those focused on evaluating the effects of interpretive programs on visitors (by measuring cognitions, perceptions, learning, understanding) or on assessing media effectiveness for behavior compliance and agency image management.

Studying sociological aspects of interpretation raises other kinds of issues entirely and reframes interpretation as a social practice of claims-making, message legitimizing, and political positioning. Some issues that might be studied under a sociological interpretation include the following: how interpretive experiences become socially constructed; the claims-making process of rhetorical (even if not “authentic”) representation of historical and contemporary realities; the political choice of images through which community and place meanings are presented; the process by which community spokespersons (individuals or agencies) come to be aligned with one another and how it affects their presentations of interpretive themes and stories; and the consequences of “mass reproduction” (Rojek, 1993) of interpretive themes.
Although heritage tourism settings may reflect the centrality of ideology for interpretation, it is not correct to assume that ideology plays a role only in those settings and not in others. The interpretation of history presents examples where images are opaque and explanations are contested, but this may also be true in settings where natural resources interpretation is practiced. Resources, management practices, policies, and environmental issues are objective phenomena that are also subjectively and socially constructed. Not only is heritage an environmental issue, but natural environments are heritage issues. Tunbridge and Ashworth (1996, p. 19) wrote, “Sustainability is not only a question of the physical maintenance of the resource but also of the comprehensive social and cultural relevance...of this exercise,” and later, “The intimacy of the natural-cultural relationship in fact intensifies as we learn more of the extent to which apparently natural environments...represent both a cultural creation and a focus of cultural tradition” (p. 267). Interpretation, then, plays a more complex and more ideological role than is usually explained as simply educating, entertaining, and inspiring visitors, and it should be viewed as integral to the sustainability of resource places.

In addition, the connections between interpretive message construction and the social context beyond the interpretive interaction should not be forgotten. In heritage tourism settings, interpretive messages “speak” as much to the local community as to visitors or outsiders. Interpretation may be used by a local government to enhance or moderate residents’ sentiments for their community; to demonstrate to new residents and industry representatives “who we are as a community”; or to sustain a sense of community in the midst of development changes. These ideological purposes depart dramatically from the usual approach to the primary goals of interpretation, as defined in some texts (e.g., Han, 1992; Sharpe, 1982), or as explained to me by a federal agency ranger with whom I regularly interact: “If we can just use interpretation to speak more nicely to our customers, maybe they’ll follow the rules more and we won’t have to police them so much.”

The process whereby an interpretive program or site is used ideologically to “speak” to a local community (in addition to its role in presenting heritage interpretation for education and entertainment of visitors) can be illustrated with one further example from the Colorado gambling towns. The Lace House, Black Hawk’s public museum, is known as a superb example of “Carpenter Gothic” style (a steeply pitched roof and wooden “icicle” carvings decorate a two-story miners’ dwelling). It became the focus of a substantial media controversy when a gaming-development company proposed building its casino on private land surrounding the Lace House on three sides. A compromise was worked out by the town government and the company to move the Lace House and several other historic structures to a new location where a “historic park” would be created. Preservation purists oppose the idea. Realists prefer the relocation, unhappy with the alternative of surrounding the Lace House with a casino.

The point—sociological and interpretive—is that community identity has been caught up in the heritage of the Lace House. Even without any semblance of a formal thematic interpretive presentation, the Lace House stood for all the potential stories and all the potential interpretive themes of the town and its people. Only very special buildings, monuments, or landscapes have the kind of power that
allows them to actually represent the entire spectrum of interpretive possibilities without any corresponding written or spoken messages. (The Holocaust Museum in Washington, D.C., is a similar example: the architecture itself both symbolizes and replicates the horror of the concentration camp experiences.) The possibilities that buildings, monuments, landscapes, or other inanimate objects, famous or common, can “speak” for themselves interpretively is an overlooked sociological topic in interpretation research.

Implications of a Sociological Interpretation

The central point of this essay is to suggest that interpretation is an inherently social, ideological, and political activity and process. Understanding this requires new theoretical approaches and content in our teaching and research. Neither academics nor agency personnel should be satisfied with the concept of interpretation as simply a tool to educate and entertain visitors. As the examples from the gambling towns demonstrate, interpretive messages are politically framed, situated within specific social contexts, and ideologically marked. Once delivered, these messages also reverberate within the broader cultural environment of images and meanings. Attention to the complexity, plurality, and multiplicity that surround interpretive practice is warranted in our research and teaching efforts.

Indeed, what may eventually result from our sociological studies is a renewed practice of interpretation that extends beyond park borders and historic walls. Interpretation that is located sociologically is also interpretation that rediscovers people in their home communities, respects their meaningful local places, and enhances their local cultures. Such “grassroots interpretation” can create an informed and active citizenry, foster communal behavior, and sustain the remarkable qualities of both familiar and extraordinary places. In the process, interpretation will likely emerge as a collective, valued, socially relevant venture—not simply a carefully neutral program activity offered at natural, cultural, and historic sites.

References


TRIP MOTIVES OF INTERPRETIVE PROGRAM
ATTENDEES AND NONATTENDEES

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Trip motivations of visitors to six state parks in Delaware that offer interpretive programs were studied to better understand interpretive program attendance. Are attendees seeking something different from their nonattendee counterparts? And if so, what difference does it make? Can interpreters better serve existing users and, at the same time, provide meaningful experiences to a larger proportion of all visitors? Recent work by Absher and Graefe reported that approximately 6% of all visitors attended some sort of interpretive event such as a guided walk or campfire talk, suggesting that personal interpretive services are a specialty service or “niche market.”

Differences in trip motivations between those who seek out interpretive programs and those who do not were studied using 22 Likert-scaled items derived from the experience preference scales by Bev Driver of the USDA Forest Service. A mailback questionnaire was sent to visitors who were randomly contacted during the summer season. Procedures included postcard reminders, two follow-up mailings, and a replacement questionnaire packet. Of the 668 questionnaires mailed out, 404 usable questionnaires were completed for a response rate of 60%. Of these, 377 completed the key question on interpretive program attendance and are included in this analysis.

Principal components factor analysis of the 22 items yielded five factors that explain 69.4% of the variance. Each factor has a sensible focus and is named accordingly. The “get away/escape,” “fun & good times,” and “socialize” factors are straightforward in their meaning. The “nature/harmony” factor is a generalized, or holistic, nature experience factor and includes items that refer to a chance to “observe the beauty of nature” and “enjoy the sights, sounds, and smells of nature.” The “nature/learning” factor refers to more educational or natural history knowledge-focused outcomes, for example, a desire to “develop my knowledge” and “study nature.”

Factor scales were derived for each factor and individual scores calculated accordingly. Scale alphas range from 0.80 to 0.88. Factor means for each scale were calculated separately for attendee and nonattendee groups. A t test identified differences between the two groups on three of the five factors. Attendees of interpretive programs have a significantly lower average score for the “get away/escape”
motive. This suggests that, on average, the desire to escape urban life and the need to relieve tensions was less important to interpretive program attendees. Similarly the attendees’ score on the “fun & good times” motive is also significantly lower, suggesting they want more from a park visit than just a “good time.” Conversely, the “nature/learning” motive is significantly more important to attendees than nonattendees. This refocuses attention on the educational or learning aspects of attendee visits as opposed to the more general fun or escape motivations of the nonattendees. The two groups are approximately equal (no statistical difference) in their motivation for either social experiences (“socialize”) or natural surroundings (“nature/harmony”).

Information on motives may be difficult to obtain, but the data presented suggest that motives are important. The demand among attendees was focused more on nature study and less on escape and fun motives. Catering to the “nature/learning” needs of the attendee subpopulation suggests further investigation into their visitation patterns and styles of recreation in order to increase their use of these services. This might involve devising different emphases in content or presentation mode, or totally rethinking the scope of existing interpretive efforts.

Alternatively, providing information and programs that are aimed at the majority of visitors (nonattendees) is sensible in that they constitute more than 90% of the visitors. Perhaps several kinds of interpretive programs are needed. Besides modifying nature-study programs that contain some educational depth, new programs may offer general nature appreciation topics to attract additional nonattendees. Although current attendees may not desire recreation skills programs, the nonattendee group might. Other programs might focus on how to have a good time outdoors (e.g., “surf safety” or how to do recreational activities like mountain biking). This already occurs elsewhere with programs such as “Tread Lightly.” Further research might look at this issue in more detail.

Although this study presented nothing that directly addressed why visitors chose not to attend programs, this too seems to be an important issue for further study. Are there communication or image barriers that might be easily overcome? Such work would provide a better understanding of the role of interpretive services as part of a broader service that addresses the diverse informational and learning needs of all visitors.

Finally, one might speculate that if interpretive program attendance remains at low levels, managers will be tempted to ignore the small nature-study-oriented minority in their services planning. This may lead to a loss of nature-study opportunities at many parks and perhaps an eventual disenfranchisement of what is a traditional, and often politically active, user group. As their needs go unfulfilled, they would be forced to go elsewhere for such experiences or perhaps not receive them at all. Alternative service delivery mechanisms such as fee-for-service programs, targeted publications, or special event days may be useful in providing these experiences.

Continuing to meet nature-study needs makes good sense from the standpoint of serving a few visitors in the short term and park system or nature-preservation goals in the long term. The results presented in this study support the conclusion that, at least for one state park system, assessing visitor motivations may be a valuable first step in this process.
BOOK REVIEWS

Nature and the Human Spirit
Edited by B. L. Driver, Daniel Dustin, Tony Baltic, Gary Elsner, and George Peterson

Nature and the Human Spirit is a state-of-the-art assessment of the hard-to-define and hard-to-measure values and benefits that enrich the meaning of humans’ relationship with the natural world. This volume is the result of a four-year project spearheaded and funded by the U.S. Forest Service in cooperation with San Diego State University’s Foundation and Venture Publishing. The content comprises 38 chapters authored and coauthored by 50 contributors, from the philosopher, academician, and land manager, to the artist, journalist, and rancher. The depth and breadth of thinking represented in this book cannot be overstated.

Jack Ward Thomas, former chief of the U.S. Forest Service, declares in the book’s foreword, “I know of no other reference…that looks at these [human spirit] values of nature so comprehensively.”

The subtitle of this volume suggests the focus of the material: Toward an Expanded Land Management Ethic. The contributors consider the spiritual meanings that nature holds for humans in the context of public-land management.

Public lands constitute more than one-third of the United States, and they are managed to meet the needs and values of the U.S. people. Various natural resource agencies—such as the U.S. Forest Service and the Bureau of Land Management—are stewards of public lands that are managed for multiple uses. This book’s purpose is to address the intentional use of these lands to maintain, renew, and stimulate the human spirit.

Three major trends have contributed to the current emphasis on spiritual values in nature. First, significant demographic and cultural changes have occurred in the past two decades. Now some 85% of the population lives in urban areas that are often characterized by noise, congestion, and pollution. Furthermore, we are subjected to social changes that have accelerated the pace and complexity of life. Second, there is now widespread receptivity to healthy living that is enhanced by physical exercise, good nutrition, stress management, and inner peace. Third, there is increased concern for the quality of the natural environment and appreciation of its beauty. These trends have led to enhanced awareness and increased use of public lands that go beyond traditional uses.

The editors, in outlining the general content of the text and assigning authors to write chapters, focus on the following ways that natural areas help maintain and renew the human spirit: (a) nature-based spiritual experiences defined by introspection and reflection on deep personal values, reverence, wonder, awe, relationship to something other and greater than oneself, humility, timelessness, and

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integration; (b) a sense of place and attachment to place, such as appreciation of
“early American landscapes”; (c) use of natural landscapes for mental well-being
and associated effects of physical well-being; (d) cognitive appreciation of heritage/
historic sites for a sense of cultural continuity and cultural meanings; (e) deep
reflective recreational values of natural landscapes; (f) nature-based archetypes of
human existence and experience as defined by Carl Jung and elaborated by Joseph
Campbell; (g) nature-based, multisensory, aesthetic experiences; and (h) represen-
tations and expressions of artistic interpretations of nature.

The editors suggest that Aldo Leopold’s concept of an “ecological conscience”
implies the need for a spiritual orientation to the land—one that calls for wise use
that accommodates the spiritual quest and concerns about future generations. The
focus of Nature and the Human Spirit is on the broad and generic nature-based
spiritual values that are represented by users of public lands.

The volume is organized into six major sections as follows:

Section I, “Introduction and Need for Text,” provides an overview of the con-
tent and details policy and management needs.

Section II, “Weaving the Context,” presents the framework within which ideas
about nature and human spirituality are subsequently discussed. This section, for
example, contains comparative perspectives of world religions and introduction of
the “four corners of human ecology” (dominion, stewardship, participation, and
abdication).

Section III, “Describing Diverse Perspectives,” explores nature-based spiritual-
ity from a variety of ethnic, cultural, personal, professional, and international per-
spectives. As just one example of the richness and diversity of the chapters, Bob
Budd, a cowboy, writes an eloquent essay titled “Lessons from the Cinnamon Mare.”

Section IV, “Public Land Management Concerns and Directions,” focuses on
incorporating spiritual values into decision making affecting public lands. Chapter
topics range from the constitutional separation of church and state, to consequences
of technology and implications for land management, to sensitizing professional
land managers to spiritual values.

Section V, “Research Directions,” examines the values and limits of science in
studying nature and the human spirit. This section includes an extensive list of
research questions based on the previous chapters. This section also considers al-
ternative research approaches for studying hard-to-define, nature-based human values.

Section VI, “Summary,” is a single-chapter review of the “deeper meaning of
the land” and the need to hear and understand diverse values associated with that
meaning.

Nature and the Human Spirit offers an enormous wealth of information. The
content is timely in that land managers will increasingly need to consider spiritual
values of nature in making resource allocation decisions. The chapters in the book,
though contributed by a wide range of professionals, complement each other and
blend into a meaningful whole. Few books offer so much in the way of diverse
perspectives. Finally, the volume has the look, and the heft, of a “coffee-table” book.
It is a handsome and well-designed text.

Nature and the Human Spirit should be of considerable interest to upper-division
and graduate students, educators, field interpreters, land managers, and researchers. It is a book of stunning importance and insight.

Reviewed by Larry Beck, Ph.D., Department of Recreation, Parks, and Tourism, San Diego State University.

Research and Evaluation in Parks and Leisure Studies, Second Edition
By Richard Kraus and Lawrence Allen
Scottsdale, AZ: Gorsuch Scarisbrick, Publishers

In all honesty, I was predisposed to not liking this book. My experience with the first edition was bad, and many of my colleagues shared a similar view. It was a pleasant surprise to read the second edition and discover it is not bad. In fact, it is a decent text for an introductory research evaluation course for undergraduates. For a graduate research methods class, supplemented by another text or two and some readings, it does a valuable service as an overview text. Because this is roughly the stated objectives of authors Richard Kraus and Lawrence Allen, I would say their book is a success.

The biggest improvements from the first edition to the second edition come in the forms of much tighter writing and organization, and a great improvement in pacing.

The improvement in organization comes from a more user-friendly format for the reader. A simple comparison of the Table of Contents shows great improvement in packaging the information. The writing style is more simple and understandable—obviously a help in teaching a complex subject. While the authors are still guilty of terribly long, complex sentences from time to time, their writing style is generally reformed compared to the first edition. Although some of the folksiness of the first edition is lost, clarity takes a quantum leap forward.

Clarity and organization are much improved, as is the pacing. As any instructor knows, going too fast or too slow can dramatically affect the ability of a class to learn. Kraus and Allen have corrected their quick leap from introducing research and evaluation to “let’s write a thesis” by adding useful, extended discussions of research and evaluation. These discussions are peppered with enough examples of researchers in the field that no one who has published in the past 30 years should feel slighted.

To be balanced in my critique, there are a few caveats. One is, like almost every other research methods text I have seen, this text tries to be all things to all people. Because the text is an overview, this is somewhat understandable. But it leads to a tendency to reduce even the most complex topics down to a few paragraphs... a single paragraph... even a single sentence. The single worst example of this is the chapter titled “Inferential Statistics.” The subject matter that typically produces the most blank faces in class is reduced to an unseemly rush to be comprehensive. This is not a fatal flaw because any serious effort at teaching this type of graduate-level...
class would assume prior statistic classes or would supplement the text with appropriate statistical texts. Rather than digging a dry well by pretending to cover inferential statistics in a lecture or two or three, I would have preferred an extended discussion on how statistics are just tools for researchers and how those tools are meant to be used. The gap between statistics classes and research methods classes tends to be large for students, and such a chapter might have been more beneficial.

The text is really two texts in one: evaluation for undergraduates and research methods for graduate students. This dichotomy creates a bit of an artificial division and takes away from the general focus. Given the small market for a text such as this in the parks and recreation field, however, it is unrealistic to expect the text to be split into two volumes.

Significant bones are thrown to researchers doing other than quantitative research. On occasion, this bone throwing is just a bit too obvious to be received with delight. On the other hand, at least several alternative approaches are now mentioned, and some are done quite well.

Many interpreters are trained in park management, outdoor recreation, leisure studies, or other similar curricula requiring a course in research methods. I encourage instructors teaching research or evaluation in such programs to seriously consider Kraus and Allen’s new text. I would also encourage field interpreters involved in visitor studies or program evaluations to consider purchasing this text for their personal professional library. The text serves as a respectable single source for reviewing all of those evaluation processes that you thought you would never use again.

In closing, the text is not perfect, but I feel that Kraus and Allen have created a work that holds its own with similar texts in other fields. This is an accomplishment that is a bit of a milestone for our field.

Reviewed by Edward Udd, Ph.D., Associate Professor, Recreation Administration and Leisure Studies Program, Washington State University, Pullman, WA 99164-1410, udd@mail.wsu.edu.
The purposes of the *Journal of Interpretation Research* are to communicate original empirical research dealing with interpretation and to provide a forum for scholarly discourse about issues facing the profession of interpretation. In recognition of how difficult it is for interpreters to keep up with the growing and diverse body of relevant literature, the *Journal* publishes reviews of recent books, professional meetings and workshops, government publications, and original literature reviews and bibliographies dealing with interpretation. The *Journal* also includes a “Research Briefs” section. This section accepts reports of ongoing interpretation research. It also provides an outlet for summaries of research studies with limited scope. Much interpretation research consists of small “in-house” program evaluations and basic visitor studies. The purpose of this section is to communicate current research activities and allow readers to identify colleagues with similar interests. “Research Briefs” should be limited to 300 to 500 words.

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