Outdoor Programs and Environmental Beliefs: Investigating the Stability of Outcomes and Levels of Salience

Alan Ewert
Alison Voight
David Calvin
Aya Hayashi

Abstract—The effects that outdoor programs have on participant feelings about the outdoor environment and wilderness areas are often assumed to be both powerful and positive. Moreover, it is believed that participation in outdoor or wilderness-based programs usually results in participants who have more pro-environmental and pro-wilderness beliefs, values, and attitudes. This study identified and measured changes in environmental attitudes and beliefs after participation in an outdoor leadership program. In addition, the strength or salience of these beliefs and changes in levels of salience was also investigated. The results of this study suggest that environmental beliefs and attitudes were relatively "durable" over the three testing periods. That is, there was little change in reported values over the three measurement times (beginning of the semester, just prior to a three-week expedition, and immediately after the expedition). In addition, participants in the treatment group consistently reported higher levels of pro-environmental beliefs and attitudes when contrasted with a comparison group. Finally, there was a strong association between levels of agreement toward selected environmental attitudes and beliefs, and their concurrent levels of reported salience surrounding those beliefs.

Introduction

Numerous outcomes have been ascribed to participation in wilderness-based programs with many of these outcomes being focused around self-systems, such as self-concept, self-esteem, or personal confidence (Gillet and others 1991; Hazelworth and Wilson 1990; Marsh and others 1986). More recently, participation in these types of programs has been linked to changes in levels of communication, trust, group cohesiveness, and team development. In reviewing the literature, four major outcome categories were found including: *interpersonal skills* (concern for others, group problem-solving, communication); *intrapersonal skills* (self-awareness, -efficacy, -assertion, locus of control); *technical skill development;* and *environmental awareness* (connection, sensitivity, respect, stewardship).

Thus, one of the underlying assumptions of many programs utilizing wilderness areas is that direct experience in a wilderness environment will promote a more pro-environmental set of values and beliefs, initial stewardship, environmental advocacy, and the development of pro-wilderness attitudes.

Despite the many claims of effectiveness, however, questions remain as to whether the actual outdoor program or some other factor(s) is the primary agent of change. For example, does the self-selection voluntary process for participation inherent in many wilderness-based programs significantly alter the reported outcomes from these programs? That is, are the participants of these programs biased in some systematic way, and is this bias the primary agent that creates the impression of change (for example, pro-environment beliefs), regardless of program effectiveness or type of program? This current study investigated the effect of course participation upon environmental attitudes and beliefs by comparing outdoor program participants with non-outdoor program respondents, within a pre/post/post-post comparison group design.

In addition, while the literature is fairly robust relative to studies investigating the attitudes and beliefs individuals hold toward the environment, much less is known regarding the importance or *salience* of those beliefs. For example, do all environmental beliefs held by individuals ascribe to the same level of salience (importance), or are there systematic differences based on other variables, such as type of belief or demographic-related factors? Accordingly, this study also investigated the relationship between stated environmental belief and the salience of that belief.

Environmental Attitudes and Beliefs

Rokeach (1979) suggests that beliefs, attitudes, and values are all organized, however loosely, within an individual, in order to form a partially integrated cognitive structure. Beliefs tend to emulate or manifest themselves as inferences about states of expectations, and have more or less levels of centrality attached to them. For example, the more central a belief is, generally the more value is placed on that belief,

Alan Ewert, Professor and Graduate Coordinator, Alison Voight, Assistant Professor, and David Calvin, Lecturer, in the Department of Recreation, Parks, and Tourism Studies, Indiana University, U.S.A.
Aya Hayashi, Lecturer in Outdoor Education, Biwako Seikei Sport College, Japan.

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and this value orientation is often closely linked to congruency with an individual's philosophy and attitudes (Jurin and Fortner 2002). In addition, situational and dispositional attitudes, such as personality, can influence belief structures, developing attitudes, and behaviors (Corraliza and Berenguer 2000).

Moreover, how an individual perceives the world and environmental issues often involves a multitude of factors including family and friends, religion, education, cohort groupings, the media, and extant regulations and laws (Ewert and Baker 2001; Stern and others 1993). In addition, two emerging factors that are now increasingly thought to influence attitude formation include: (1) understanding consequences from behaviors impacting the natural environment (Stern 2000), and (2) direct participation in outdoor recreational activities, which is discussed in the following section.

Direct Participation in Outdoor and Wilderness Recreation

With respect to direct participation, past research has suggested that the outdoor experience can be an influential agent in the development of environmental attitudes (Palmer 1993; Tanner 1980). Three factors may help explain how participation may influence attitude. These factors include:

- A heightened appreciation of the natural and wilderness setting;
- Enhanced knowledge regarding natural processes; and
- A greater acceptance and agreement with pro-environment beliefs and attitudes.

In general, the literature suggests that there is a positive relationship between environmental attitude and participation in outdoor recreation (Dunlap and Heffernan 1975). For example, Palmberg and Kuru (2000) report higher levels of moral judgment and the development of empathic relationships with nature. It should be noted, however, that there is still ambiguity in our understanding of the relationship between outdoor activity and environmental concern. For example, Nord and others (1998) found that the connection between outdoor activities and environmental concerns and/or behaviors is often nebulous or weak. Another area that has received little attention in the literature regarding individuals' attitudes or beliefs about the environment is the degree of importance, or salience, of those beliefs.

Environmental Attitudes and Salience

The environmental-attitudes literature has predominantly focused on attitude formation and identification. Much less work has been devoted to the issue of *importance* of beliefs regarding those attitudes. Do individuals ascribe the same level of importance for all environmentally related attitudes and beliefs, or are there systematic differences as the result of some predictable or unknown variables? In order to approximate answers to these questions, the concept of salience and its relationship to environmental attitudes, should be defined.

Salience Defined

In its basic conceptual meaning, salience refers to a belief or value that stands out in an individual's cognitive field; it is something that a person attaches a sense of importance to (Krech and Crutchfield 1948). When one is referring to a "salient" feature or characteristic, it is something that is set apart from other features within a similar context. In other words, when a person perceives a phenomenon to be salient, he/she regards this phenomenon as something that particularly resonates within the individual. This may be due to prior experience or exposure to the phenomenon or feature (for example, setting) and consequently, it has been internalized as having significance in a person's life. Salience may also resonate with an individual's cognitive or affective psyche if the person regards the phenomenon to be new, different, or significant information heretofore not acknowledged or experienced. In essence, the interaction, information or exchange registers as a "salient" part of the person's cognitive or affective alchemy.

Salience of beliefs can be specifically related to outdoor settings and the meaning they evoke for an individual. For persons visiting a natural resource environment for the first time, it may become a "salient" experience for the visitor, where he or she may attach deep meaning to the area. The resulting salience of meaning ascribed to a specific outdoor setting may also constitute the reason a person will return to that area, or harbor a more protective feeling about that setting (Ewert and others 2004).

MacCannell (1989) describes the salience or importance a visitor ascribes to a particular attraction (for example, outdoor place or region) as a "marker." This marker becomes significant to a visitor based on his/her personal psychological ideologies and past experiences. Other literature regarding the salience or meaning a person associates with a particular setting is described in various forms. Lew (1987) proposed that a person's attachment to a particular setting may be regarded from three varying characteristics, including: (1) *Ideographic*—indicating the uniqueness of a site that attracts a person; (2) *Organizational*—the spatial or temporal nature of an area, or (3) *Cognitive*—which fosters a particular feeling or attitude as a visitor. Gunn (1972) described a specific attraction of a place as the "nuclei," and this nuclei in turn, must be encompassed by an "inviolate belt" which maintains the significance of the attraction for a person.

As the literature indicates, the "importance" of meaning, or salience a person ascribes to a particular (environmental) setting must be experienced within a certain context in order to give the experience its significance. This paper addresses the concept of salience and it relationship to a person's belief system. In particular, it examines the relationship between varying beliefs a person may possess toward the environment and the salience (in other words, strength, importance) of those beliefs.

Finally, salience can be thought of as having a dynamic quality relative to environmental attitudes and beliefs. That

is, an individual may attach differing levels of salience on specific environmental attitudes. Hence, a person might express agreement with two different environmental-based attitudes or beliefs but have differing levels of salience or importance ascribed to these attitudes. This study investigated the relationship between levels of agreement toward selected environmental attitudes and the levels of importance, or salience, placed on those attitudes.

Research Questions

The following questions provided the research framework for this study:

- **RQ_1:** Will the level of agreement with selected environmental attitudes and beliefs and the salience of those beliefs change after participation in an outdoor adventure program?
- **RQ_2:** Will the self-selected voluntary nature of the treatment group used in this study reflect the same level of agreement and salience with selected environmental attitudes when contrasted with a comparison group?
- **RQ_3:** What is the relationship between levels of agreement toward selected attitudes and the levels of salience of those attitudes and beliefs?

Methods

The sample consisted of 38 students from a large Midwestern university. The treatment group included 18 students enrolled in a semester-long, 17 credit-hour outdoor leadership program. This semester program occurs in the spring of each year and entails a number of experiential learning components including a three-week expedition to Wilderness areas in Colorado and Utah. The comparison group entailed 20 students from a mid-level academic course regarding leisure program development.

The questionnaire utilized in the research was a modified version of the original New Environmental Paradigm (Dunlap and van Liere 1978). The survey instrument included 25 questions that utilized a four-point Likert scale to record responses. Responses measured participants' environmental attitudes and beliefs, and levels of salience toward the environment, and used the following types of statements; *bio-centric, anthro-centric, pro-environmental attitude, con-environmental attitude, pro-environmental behavior* and *con-environmental behavior*. Table 1 provides examples of the statements. Demographic information such as age, gender, and place of residence, was also obtained (table 2).

Table 1—Sample items of the questionnaire.

Bio-centric statements:
Humans must live in harmony with nature in order to survive.
Anthro-centric statements:
Humans have the right to modify the natural environment to suit their needs.
Pro-environmental attitude statements:
The effects of pollution on public health are worse than we realize.
Con-environmental attitude statements:
We don't need to worry much about the environment because future generations will be better able to deal with those problems than we are.
Pro-environmental behavior statements:
I would/have sign a petition in support of tougher environmental laws.
Con-environmental behavior statements:
I would take a job with a company I knew was harming the environment.

Table 2—Demographic information.

Group	Sample size	Age (mean)	Place of residence
Treatment	N = 18 (F = 5; M = 13)	22.2	Urban = 9; Rural = 9
Comparison	N = 20 (F =9; M = 11)	21.7	Urban = 14; Rural = 6

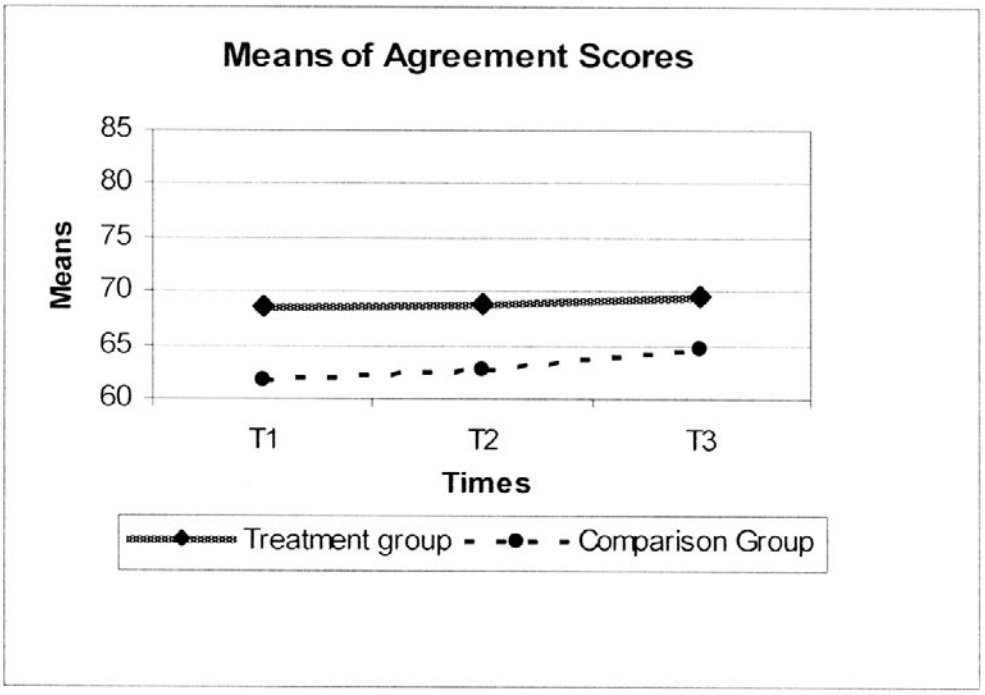
Findings

The reported mean scores of environmental attitudes and beliefs were compared over three periods. Time 1 data were collected at the beginning of the semester. Time 2 data were collected just prior to the three-week wilderness expedition. Time 3 data were collected just after returning from the three-week expedition. As figure 1 indicates, both scores of agreement with the environmental attitudes and beliefs, as listed in the instrument, and the level of salience regarding those beliefs were relatively stable over the period in both the treatment and the control groups. This suggests that these attitudes are relatively stable and not amenable to change as either a function of visitation to a wilderness location or as a function of time (RQ_1).

Table 3 shows the mean score differences between the treatment group and the comparison group over the three periods. The results suggest that in terms of the pro-environmental-type statements (bio-centric, pro-environmental attitudes and pro-environmental behavior), the scores of the treatment group (which was a self-selected group) were significantly higher than those of the comparison group. Also, relative to many of the con-environmental type of statements (anthro-centric, con-environmental attitudes and con-environmental behaviors), the scores of the level of salience ascribed to these items from the treatment group were lower than those of the comparison group. This may once again imply that respondents from the treatment group are more pro-environment, both in terms of their responses and in the salience of those responses (or lack of salience for con-environment items), than their counterparts in the comparison group.

This finding points to the possibility that the self-selected nature of the treatment group (in other words, the members of the treatment group voluntarily chose to participate in the semester program) may present a systematic bias toward environmental issues and questions. Indeed, if present, this bias may be a contributing factor to how respondents answer environmental-based questions regarding their attitudes and beliefs about the environment (RQ_2).

As for the third research question (RQ_3), the correlations between scores of agreement and belief were examined at the



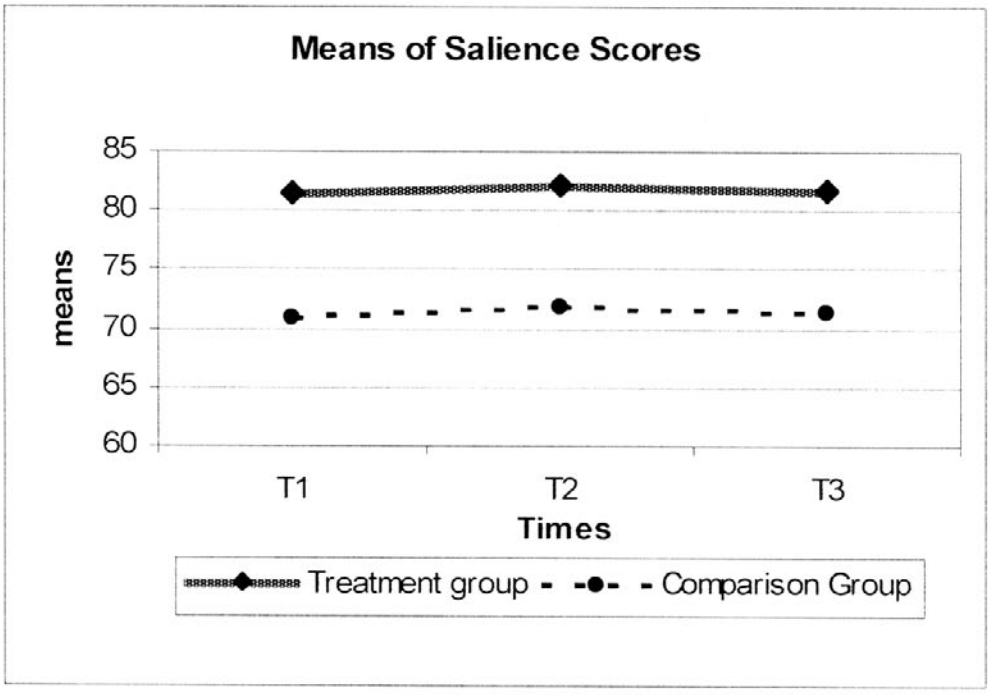


Figure 1—Stability of scores.

Table 3—Mean scores differences between treatment and control groups.

Belief

	Time 1				Time 2				Time 3			
	Treat	Control	dif	*t*	Treat	Control	dif	*t*	Treat	Control	dif	*t*
Biocentric	3.37	2.73	.64	3.96 [a]	3.35	2.85	.50	4.52 [a]	3.33	2.78	.56	3.80 [b]
Anthrocentric	3.03	2.85	.18	0.78	3.22	2.81	.42	2.25 [c]	3.15	2.90	.25	1.46
Pro-environmental attitudes	3.47	3.04	.43	3.01 [b]	3.41	2.94	.47	3.39 [b]	3.56	3.00	.15	3.60 [b]
Con-environmental attitudes	3.17	2.85	.32	1.28	3.09	2.79	.31	1.35	3.11	2.84	.27	1.15
Pro-environmental behavior	3.20	2.73	.47	2.13 [c]	3.39	3.08	.30	1.62	3.15	2.75	.40	1.84
Con-environmental behavior	2.67	2.85	–.18	–.75	2.83	2.65	.18	.74	2.72	2.9	–.18	–.65

Salience

	Time 1				Time 2				Time 3			
	Treat	Control	dif	*t*	Treat	Control	dif	*t*	Treat	Control	dif	*t*
Biocentric	3.31	2.73	.57	4.68 [a]	3.26	2.79	.47	3.83 [a]	3.36	2.82	.54	4.96 [a]
Anthrocentric	1.68	2.14	–.46	–2.45 [c]	1.74	2.13	–.4	–2.49 [c]	1.81	2.21	.18	–2.2 [c]
Pro-environmental attitudes	3.51	2.95	.13	4.32 [a]	3.43	2.84	.59	4.11 [c]	3.42	2.94	.48	3.02 [b]
Con-environmental attitudes	1.53	1.94	–.41	–2.28	1.75	1.99	–.24	–1.44	1.76	2.17	–.41	–2.09 [c]
Pro-environmental behavior	3.39	2.28	1.11	4.89 [a]	3.27	2.52	.76	3.78 [b]	3.06	2.48	.57	2.65 [c]
Con-environmental behavior	1.67	1.93	–.26	–1.21	1.94	2.15	–.21	–.96	1.94	2.3	–.36	–1.31

[a] $p < 0.001$
[b] $p < 0.0$
[c] $p < 0.05$

Table 4—Correlations between levels of agreement toward environmental attitudes and beliefs and the levels of salience.

	Treatment group		Control group	
	Time 1	Time 3	Time 1	Time 3
Biocentric	0.844 [a]	0.772 [a]	0.767 [a]	0.816 [a]
Anthrocentric	–.217	.007	–.460 [b]	.247
Pro-environmental attitudes	.873 [a]	.860 [a]	.293	.738 [a]
Con-environmental attitudes	–.268	-.075	–.200	.292
Pro-environmental behavior	.835 [a]	.648 [a]	.556 [b]	.360
Con-environmental behavior	.118	–.116	–.129	.043

[a] $p < 0.0$
[b] $p < 0.05$

first test and third test (table 4). It was found that scores of bio-centric, pro-environmental attitudes, and pro-environmental behavior were highly correlated between agreement and belief; and this level of salience remained relatively durable over the period for both groups. In particular, the salience for the bio-centric attitudes and beliefs was very high and consistent. On the other hand, scores of anthro-centric, con-environmental attitudes, and con-environmental behavior were not significantly correlated between attitude and level of salience.

Conclusions

As evidenced by the findings in this paper, participants of outdoor programs tend to be generally more pro-environment in their attitudes and beliefs than the general population. This could be attributed to a number of reasons, including a desire to be a part of outdoor programs and increased exposure to outdoor environments, as well as the participants' educational background.

The findings also indicate that these pro-environmental attitudes are relatively stable and not very amenable to change, which may be based on experience in the outdoors. In addition, it should be noted that outdoor programs may be relatively ineffective in altering attitudes and beliefs, and that outdoor programming may better serve as an information tool rather than strictly an attitudinal change mechanism.

Outdoor programs may be more effective in *reinforcing* attitudes and beliefs of participants who already show a positive disposition toward pro-environmental concerns.

Finally, the results of this study indicate that the strength of belief is much more consistent with bio-centric statements than anthro-centric statements. In other words, persons who believe in protecting the environment exhibit a more salient disposition of their beliefs, where anthro-centrically disposed individuals may not show as strong or as salient a belief either to protect or *not* to protect the environment. In general, salience of belief follows bio-centric statements. This may suggest developing more bio-centric outdoor programs for bio-centric participants. It should be noted that the outdoor program used in this study was a leadership training program, not an environmental education/land stewardship experience, per se. Further improvement regarding the measurement for outdoor programs should also be examined.

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