

## On-site Optimal Experiences and Their Relationship to Off-site Benefits

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This paper examines: (a) the quantity of optimal experiences got during the on-site phase of outdoor recreation; (b) the quantity of benefits gotten off-site, during the recollection phase of outdoor recreation; and (c) the relationship between (a) and (b). Optimal experiences—a psychological state considered to be special, meaningful, and/or out-of-the-ordinary—are characterized by intense focus on a stimulus, an altered sense of time, and loss of consciousness of the self. A three item scale, part of an on-site questionnaire, was developed to measure the quantity of optimal experiences outdoor recreationists reported getting. The quantity of benefits recollected off-site was measured using a follow-up, mail-out questionnaire ( $n = 169$ ). Regression analyses found significant relationships between the quantity of optimal experiences and the quantity of three benefit categories. With the higher meaning and social interaction benefit categories, the relationships were quadratic; indicating that high quantities of optimal experience produced higher quantities of these benefit categories vs. very low, low, moderate, and very high quantities of optimal experience. This type of relationship suggests that very high quantities of optimal experiences may result in disbenefits—possibly due to the addictive nature of very high quantities of optimal experiences. With the greater knowledge benefit category, the relationship was cubic; indicating that very low and high quantities of optimal experiences may produce higher quantities of this benefit category vs. low, moderate, and very high quantities of optimal experiences. Management implications and research recommendations are discussed.

**KEYWORDS:** *Benefits, on-site phase, optimal experiences, outdoor recreation, recollection phase*

### Introduction

Recreation is often conceived of in terms of five phases: anticipation, travel to, on-site, travel back, and recollection (Clawson & Knetsch, 1966; see also Driver & Tocher, 1970). Much of the early research in this area focused

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The authors would like to thank the editor of this special issue, Bill Stewart, as well as the associate editor and two reviewers who contributed greatly to this paper.

Funds for this study were made available through the USDA Forest Service North Central Forest Experiment Station and Rocky Mountain Forest and Range Experiment Station. The opinions expressed herein do not necessarily reflect those of the sponsors.

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on how people's mood changed over time. More (1973) and More and Payne (1978), for example, looked at changes in moods from shortly before to shortly after participation in on-site recreation activities. Similarly, Hammitt (1980) examined how the moods of visitors to a bog environment changed across all five phases of their trips. In two more recent studies, Stewart and Hull (1992) investigated how hikers' satisfaction levels changed between the on-site and recollection phases of their trip, while Stewart (1992) studied how preferences for two experiences, physical exercise and escaping civilization, differed before and after hiking.

In contrast with Stewart's (1992) study, this paper examines only one type of experience—what Mannell (1996) calls "optimal experiences." Optimal experiences are a type of psychological state that people experience and describe as special, out-of-the-ordinary, and/or meaningful (Mannell, 1996, p. 405). Unfortunately, little research has been conducted on the quantity of optimal experiences individuals report getting during the on-site phase of outdoor recreation.

In addition to their experiences, outdoor recreationists may also accrue a number of "benefits" from their trips. Driver (1996) defines benefits as an improved condition (e.g., a gain); the prevention of an unwanted condition; or the attainment of a desired condition (p. 94). This paper focuses on the quantity of benefits outdoor recreationists report getting off-site, during the recollection phase.

Not surprisingly, the lack of research on on-site optimal experiences during outdoor recreation also means that little is known about its relationship to off-site benefits. Based on this perceived research gap, therefore, this paper will examine: (a) the quantity of optimal experiences got during the on-site phase of outdoor recreation; (b) the quantity of benefits gotten off-site, during the recollection phase of outdoor recreation; and (c) the relationship between (a) and (b).

## Literature Review

### *Optimal Experiences*

Mannell (1996) contends that a number of constructs can be considered as being optimal experiences, including peak (Maslow, 1968), flow (Csikszentmihalyi, 1990), and absorbing experiences (Tellegen & Atkinson, 1974; Quarrick, 1989).

Maslow (1968) describes peak experiences as a "temporary turning away from the real world" (p. 96) which results in "moments of highest happiness and fulfillment" (p. 73). Other characteristics of peak experiences include: (a) total attention to, and richer perception of, a stimulus; (b) self-forgetfulness or egolessness; and (c) temporal disorientation.

Flow is another optimal experience construct. Csikszentmihalyi (1990) describes flow as "the state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (p. 4). Although

peak and flow experiences differ in that the former is "all or nothing" while the latter varies in intensity (Mannell, 1996), they do share some important characteristics. Flow, for example, also involves escape from everyday life, focussed attention, a loss of consciousness of the self, and an altered sense of time (Csikszentmihalyi, 1990). Other flow characteristics include a sense of control over one's actions, and tasks having clear goals and immediate feedback (Csikszentmihalyi, 1990). Mannell (1979) believes, however, that elements such as the latter may be "less characteristic of the experience than they are conditions contributing to the achievement of flow-like experiences" (p. 183).

Absorption is a third optimal experience construct. Tellegen and Atkinson (1974) were the first to investigate absorption, believing it was related to hypnotic susceptibility. Quarrick (1989), however, has provided the most comprehensive examination of absorption. Quarrick (1989) believes that "absorption is a particular kind of attention that is qualitatively different from the orientation maintained in everyday life" (p. 18). During absorption, sense of self and time fades as the person "merges" with a fascinating stimulus. In contrast with flow, however, Quarrick's construct occurs not only when certain conditions are present (i.e., when skills and challenges are in balance), but almost any time. Books, movies, and interaction with loved ones are all examples of fascinating stimuli which can result in absorption. These diversions "can be enjoyed by any adult. They require no special training. They are simple and direct so that the ability to enjoy them is easily learned" (Quarrick, 1989, p. 137).

Although absorption can occur with a wide variety of stimuli, Kaplan and Kaplan (1989) believe that natural objects may be especially fascinating. The Kaplans contend that, while natural stimuli may result in relatively weak or "soft" fascination, "some fascination is so powerful that one cannot at the same time think of anything else" (Kaplan & Kaplan, 1989, p. 192).

In summary, a number of researchers have described constructs which may be categorized as optimal experiences. Although substantial differences exist among these concepts, there are also important similarities. For example, Maslow (1968), Csikszentmihalyi (1990), and Quarrick (1989) all describe psychological states which: (a) are fundamentally different from what occurs during everyday life, (b) involve total attention being focussed on a specific stimulus and reduced attention being focussed on peripheral stimuli, (c) result in an altered sense of time, and (d) result in a loss of consciousness of the self. In this paper, therefore, these characteristics will be the basis for the development of a scale which seeks to measure the quantity of optimal experiences during the on-site phase of outdoor recreation.

### *Benefits*

As noted earlier, benefits are defined as an improved condition (e.g., a gain); the prevention of an unwanted condition; or the attainment of a desired condition (Driver, 1996, p. 94). Driver believes benefits can occur with-

out conscious awareness and can affect the outdoor recreationist's psychology and physiology, as well as the social, economic, and environmental systems of which he or she is a part.

Stein and Lee (1995), using input from university and Forest Service researchers as well as Bureau of Land Management managers, developed a list of 54 benefits outdoor recreationists could potentially obtain. Stein and Lee then asked outdoor recreationists to rate the desirability of these benefits using a combination of on-site interviews and mail-back questionnaires. Their cluster analysis resulted in nine benefit domains, including: (a) stress relief/nature appreciation/fitness, (b) share similar values, (c) achievement/stimulation, (d) learn new things, (e) independence, (f) improve mental well-being and sense of self, (g) introspection, (h) teach/lead others, and (i) meet new people.

Tarrant, Manfredo, and Driver (1994) examined the psychological and physiological responses associated with the recollections of both active and passive outdoor recreation experiences. Physiological responses were measured based on changes in heart rate, skin conductance level, and systolic and diastolic blood pressure, while psychological responses were measured based on changes in positive and negative affective states. The researchers found that, in comparison to recollection of a distressful exam situation, active outdoor recreation recollections differed in regard to physiological responses, while passive outdoor recreation recollections differed in regard to both psychological and physiological responses. These findings led Tarrant et al. to propose a linkage between recollection of outdoor recreation experiences and beneficial outcomes. They state:

In our study, recollections of the active recreation experience produced moderate elevations in heart rate which has been shown to contribute to improved cardiovascular functioning (Froelicher & Froelicher, 1991) and increased positive mood which has been linked to improved self-esteem, lowered depression, enhanced immune responsiveness and reduced suicide rates. (Tarrant et al., 1994, p. 368)

Findings from these two studies suggest, therefore, that benefits do result from recollection of outdoor recreation trips.

### *Optimal Experiences and Benefits*

According to Manfredo, Driver, and Tarrant (1996), a key area for future research is the relationship between outdoor recreation experiences and beneficial outcomes. If they are correct, then it would seem to follow that if optimal experiences do occur during outdoor recreation, the relationship between these experiences and related subsequent benefits should also be an important research area. Unfortunately, this relationship has not been well-examined in traditional outdoor recreation situations (e.g., hunting, backpacking, day hiking, mountain biking, etc.). Nonetheless, studies in other situations suggest that optimal experiences may have beneficial outcomes. Csikszentmihalyi and Csikszentmihalyi (1988), for example, state that

“flow is a force for growth: Unless people get better at what they are doing, they can’t enjoy it any longer” (p. 262). Thus, it appears that relationships do exist between flow experiences and benefits such as improved skill and fitness levels.

Flow may also enhance a sense of the self. There is a very important and at first apparently paradoxical relationship between losing the sense of self in a flow experience, and having it emerge stronger afterward. It almost seems that occasionally giving up self-consciousness is necessary for building a stronger self-concept. (Csikszentmihalyi, 1990, p. 65)

This benefit may, in fact, be due to perceived changes in a variety of aspects of the self, including self-esteem (Wells, 1988) and self-efficacy (Csikszentmihalyi, 1990).

Optimal experiences have been linked to other psychological benefits, including reduced stress and positive mood states (Han, 1988; Hull, 1991; Massimini & Carli, 1988), as well as to what Quarrick (1989) calls “absorbed” learning (which involves deep experiencing, vs. the cognitive activity which occurs during “concentrated” learning).

Optimal experiences have also been linked to social benefits. Massimini and Carli (1988) found that, for Italian teenagers, flow experiences and sociability were related. Sato (1988) found that Japanese motorcyclists who experienced flow rated friendship/companionship as the activity’s biggest reward. And Allison and Duncan (1988) discovered that the major source of flow for both blue-collar and professional women “dealt with the interpersonal domain, where family, particularly children, were the focus of attention” (p. 129).

Finally, optimal experiences may affect a person spiritually and, as a consequence, how he or she relates to the natural environment. McDonald and Schreyer (1991) state that optimal experiences can result in an increased sense of connectedness with the earth and its creatures which, in turn, can result in “a greater sense of appreciation for the environment and the community of life” (p. 189).

In summary, although the relationship between optimal experiences and benefits in traditional outdoor recreation situations has not been well-examined, theory and research in related areas suggests that social, functional, psychological, and environmental benefits may result from optimal experiences which occur in such situations.

## Methods

### *On-Site Phase: Optimal Experience Items and On-Site Questionnaire*

Based on a review of the literature, four potential optimal experience items were developed: (a) “living only in the moment; forgetting the everyday worries of life,” (i.e., a psychological state which is fundamentally different from that experienced during everyday life); (b) “becoming so absorbed in my experience that I lose track of everything around me,” (i.e., total

attention being focussed on a specific stimulus and reduced attention being focussed on peripheral stimuli); (c) "enjoying this visit so much I lose track of time" (i.e., an altered sense of time); and (d) "become so absorbed in my experience that I lose consciousness of my self" (i.e., loss of consciousness of the self). During pre-testing, however, concerns arose regarding respondents' ability to answer the "loss of consciousness of the self" item. As a consequence, this item was deleted.

Study respondents were asked how much of each of the optimal experience items they had got (1 = not at all, 3 = somewhat, and 5 = a lot) as part of an on-site questionnaire distributed at an Appalachian Mountain Forest Service National Recreation Area. A convenience sample was conducted which attempted to include a wide variety of outdoor recreationists. Of the 458 people approached, 410 (90%) agreed to participate in the study. Of the 48 individuals who chose not to participate, 26 (54%) were day hikers or backpackers, 11 (23%) were cyclists, and the remainder (23%) were engaged in a variety of other activities. Individuals were not asked why they chose not to participate, however study personnel reported difficulty in getting cyclists to dismount so as to complete the questionnaire. In addition, due to the severe weather conditions that occasionally occurred during the sampling period, hikers and backpackers often appeared more interested in reaching their cars than in completing the on-site questionnaire.

#### *Recollection Phase: Mail-Out Questionnaire and Benefit Items*

In order to measure the quantity of benefits gotten during the recollection phase of outdoor recreation, on-site questionnaire respondents were asked to provide their names and addresses so that they could be re-contacted at a later time. Using a modified Dillman (1978) method, study participants were subsequently mailed an eight page questionnaire approximately three weeks after being contacted. A postcard reminder was sent out two weeks later, with another copy of the questionnaire sent out approximately one week after the postcard.

Of the 410 individuals who completed the on-site questionnaire, 336 usable names and addresses were provided. Of these 336 individuals, 169 returned the mail-out questionnaire, resulting in an overall response rate of 50%. Although this response rate is low, and no attempt was made to check non-respondents for possible response bias, comparisons of on-site respondents and mail-out respondents indicated few significant differences. For example, although a chi-square test did indicate that those who visited the National Recreation Area for the first time were significantly ( $p < .05$ ) more likely to return the mail-out questionnaire compared with those who had visited the NRA five or more times, no significant gender or activity differences were found.

In order to examine off-site benefits, respondents were asked to reflect back and rate how much their visit helped them in regard to 18 beneficial

outcomes (1 = not at all, 3 = somewhat, 5 = a lot). Fifteen of the benefit items were either from, or were based on, Stein and Lee's (1995) research (e.g., become more physically fit, self-reliant, self-confident). The three remaining items (i.e., gain humility, gain greater respect for nature's creatures, learn more about who I am) were added based on perceived gaps in Stein and Lee's benefit inventory.

### *Data Analysis*

Data analysis consisted of five stages. First, to determine the quantity of optimal experiences outdoor recreationists reported getting, descriptive statistics for the three items were studied. Second, to examine if the three optimal experience items do form a scale, corrected inter-item total correlations, and Cronbach coefficient alpha were conducted. Third, the quantity of benefits gotten during the recollection phase of outdoor recreation was studied using descriptive statistics. Fourth, factor analysis, corrected inter-item total correlations, and Cronbach coefficient alphas were conducted so as to determine if there were similarities among the benefit items and to reduce the number of benefits. Finally, linear, quadratic, and cubic regressions were performed to determine what relationships exist between the quantity of optimal experiences during the on-site phase of outdoor recreation and the quantity of benefits during recollection phase of outdoor recreation. Selection of the best-fitting regression model was determined using the F-test method (Weisberg, 1980). Briefly, linear models were compared to more complex quadratic and cubic models. An F-test was used to see if the more complex model explained significantly more variance than the simpler model. All statistical analyses performed in this paper were conducted using SAS 6.12.

## Results

### *Demographics and On-Site Trip Data*

The average age of respondents was 37 years, with 73% being male and 27% being female. Over 75% of the sample had attended college or university (26% having done so for one, two, or three years; 27% having done so for four years; and 26% having done so for five or more years). Of the six income categories, the smallest percentage (10%) made under \$10,000 per year, while the largest percentage (27%) made \$25,000 to \$39,000 per year.

In regard to their earlier on-site experience, backpacking was the primary activity for 21% of the respondents, followed by mountain biking (19%), day hiking (16%), hunting (16%), and viewing scenery/wildlife (15%). Respondents were generally highly skilled in these activities (65% rated themselves a 7, 8, 9, or 10 on a 10 point scale where 1 = novice and 10 = expert). One half (50%) were at the site with close friends, while the others were with family members (29%), acquaintances/strangers (14%), or

by themselves (7%). Finally, 32% were first-time visitors to the National Recreation Area, 32% had visited between two and four times, and 36% had visited five or more times.

### *On-Site Optimal Experiences*

Means and standard deviations for each optimal experience item are shown in Table 1. "Enjoying this visit so much I lose track of time" was rated highest ( $M = 3.87$ ,  $SD = 1.15$ ), followed by "living only in the moment; forgetting the everyday worries of life" ( $M = 3.83$ ,  $SD = 1.16$ ); and "becoming so absorbed in my experience that I lose track of everything around me" ( $M = 3.23$ ,  $SD = 1.38$ ).

The corrected inter-item total correlations and Cronbach coefficient alpha support the use of these three items as an optimal experience scale (Table 1). All three corrected inter-item total correlations exceeded Nunnally and Bernstein's (1994) recommendation of .30 or greater. The three optimal experience items had a Cronbach coefficient alpha of .74 with no increase resulting if any of the items were deleted. This Cronbach coefficient alpha exceeds Nunnally and Bernstein's (1994) recommendation of .70.

The mean for the composite, three-item optimal experience scale was 3.65 ( $SD = 1.00$ ). Kurtosis and skew were, respectively,  $-0.05$  and  $-0.65$ , suggesting a relatively normal distribution (Huck & Cormier, 1996). One additional point must be made regarding the three-item optimal experience

TABLE 1  
*Mean, Standard Deviation, Cronbach Coefficient Alpha, and Corrected Item Total Correlations for On-Site Optimal Experience Items*

Items	Optimal Experience Scale				Alpha if Deleted	Corrected Inter-item Corr.		
	<i>M</i>	<i>SD</i>	Item Total Correlation			A	B	C
A) Enjoying this visit so much I lose track of time	3.87	1.15	.65		.54	—	.51	.56
B) Living only in the moment; forgetting the everyday worries of life	3.83	1.16	.50		.72	—	—	.37
C) Becoming so absorbed in my experience that I lose track of everything around me	3.23	1.38	.54		.68	—	—	—

Cronbach Coefficient Alpha (for standardized variables) = .74

Note: Respondents were asked "did you experience this yet?" (1 = not at all, 3 = somewhat, 5 = a lot).



scale's distribution; mail-out respondents did not differ significantly ( $p > .05$ ) from on-site respondents in their rating of the scale ( $M = 3.65$ ,  $SD = 1.00$ ,  $M = 3.54$ ,  $SD = 0.97$ , respectively). This finding suggest that, at least in regard to the quantity of optimal experiences outdoor recreationists got on-site, non-response bias was not a significant factor.

### *Recollected Benefits*

Of the 18 benefits measured during the recollection phase (Table 2), "reduce stress" was rated highest ( $M = 4.20$ ), while "gain greater knowledge

**TABLE 2**  
*Means, Standard Deviations, and Factor Analysis of Recollected Benefit Items*

Benefit Category and Factored Items	<i>M</i>	<i>SD</i>	Factor Loading	Factor <i>M</i>
Higher Meaning (eigenvalue = 7.49, variance explained = 41.6%)				3.27
Learn more about who I am	3.05	1.24	.89	
Better understand my life and values	3.10	1.18	.89	
Improve my sense of control over my life	3.18	1.20	.85	
Improve my self-reliance	3.23	1.21	.81	
Grow spiritually	3.09	1.24	.76	
Gain greater respect for nature's creatures	3.54	1.13	.74	
Enhance my environmental ethic	3.35	1.11	.70	
Gain humility	2.84	1.15	.67	
Connect with nature and all of life	3.91	1.02	.51	
Activity-Focussed (eigenvalue = 1.63, variance explained = 9.1%)				3.48
Become physically fit	3.38	1.00	.75	
Improve my outdoor skills	3.59	1.13	.71	
Greater Knowledge (eigenvalue = 1.31, variance explained = 7.3%)				2.65
Gain greater knowledge of area's plants & animals	3.37	1.12	.86	
Gain greater knowledge of area's Indians & pioneers	1.90	0.96	.65	
Social Interaction (eigenvalue = 1.04, variance explained = 5.8%)				3.23
Make new friends	2.63	1.30	.83	
Strengthen relationships with my companions	2.47	1.41	.58	

*Note.* Respondents were asked "today, reflecting back on my visit, I think it helped me to:" (1 = not at all, 3 = somewhat, 5 = a lot). Because only the "bring my family closer together" item loaded on the fifth factor, this item and factor were excluded from further analysis. Similarly, because the "become more self-confident" item loaded on two factors at or above the selected .50 cut-off, and the "reduce stress" item did not load on any factors at or above .50, both of these items were also excluded from further analysis.

of area's Indians and pioneers" was rated lowest ( $M = 1.90$ ), (i.e., 1 = not at all, 3 = somewhat, and 5 = a lot).

The number of benefit items was reduced using factor analysis (varimax rotation). Five factors (Table 2), explaining 69% of the variance, had eigenvalues of 1 or greater. Because only the "bring my family closer together" item loaded on the fifth factor, however, this item and factor are excluded from further analysis. Similarly, because the "become more self-confident" item loaded on two factors at or above the selected .50 cut-off (Nunnally & Bernstein, 1994), and the "reduce stress" item did not load on any factors at or above .50, both of these items are also excluded from further analysis.

Nine items loaded on the first factor at or above .50. Based on the characteristics of these nine items, this factor is concerned with a person's sense of self and life, the natural environment, and determining the "proper" relationship between the two. Further examination of this factor's underlying rationale will occur in the discussion section. At this point, however, we will simply call this factor the higher meaning benefit category.

Table 2 also shows the structure and content of the remaining factors. Two items loaded on the second factor at or above .50. These items—"become physically fit" (factor loading of .75) and "improve my outdoor skills" (.71)—are now called the activity-focussed benefit category. Two items loaded on the third factor: "gain greater knowledge of area's plants and animals" (.86) and "gain greater knowledge of area's Indians and pioneers" (.65). These two items now form the greater knowledge benefit category. Two items loaded on the fourth factor: "make new friends" (.83) and "bring my family closer together" (.58). These two items are hereafter referred to as the social interaction benefit category.

With the higher meaning benefit category, all nine of the corrected inter-item total correlations exceeded Nunnally and Bernstein's (1994) recommendation of .30 or greater. Reliability for the higher meaning benefit category was also acceptable, with the nine items having a Cronbach coefficient alpha of .93 with no increase resulting if any of the items were deleted. The inter-item correlation for the activity-focussed benefit category was .43; for the greater knowledge benefit category was .41; and for the social interaction benefit category was .30. These inter-item correlations are of medium effect size (Cohen, 1977; 1992) and, therefore, support the continued use of all three benefit categories.

### *Relationship Between On-Site Optimal Experiences and Recollected Benefits*

Regression analyses were used to determine the relationship between optimal experiences on-site (treated as the independent variable) and recollected benefits off-site (treated as the dependent variable). Selection of the best-fitting regression model was done using the F-test method (Weisberg, 1980); that is, a more complex regression model was used if it explained significantly ( $p < .05$ ) more variance than a less complex regression model. Significant regression models were found for three of the four benefit cat-

egories; specifically the higher meaning, social interaction, and greater knowledge benefit categories.

Although the higher meaning benefit category's linear and quadratic regression models were both significant ( $F(1, 161) = 23.34, p < .0001$ ;  $F(2, 160) = 14.76, p < .0001$ , respectively), the quadratic model explained significantly ( $p < .05$ ) more variance than did the linear model (adjusted  $R^2$ s = .12 and .15, respectively). Table 3 provides detailed information on the quadratic relationship between optimal experiences on-site and off-site recollection of the higher meaning benefit category.

Only the quadratic regression model was significant for the social interaction benefit category ( $F(2, 157) = 4.52, p < .05$  vs.  $F(1, 158) = 2.84, p > .05$  for the linear regression model). The adjusted  $R^2$  for the quadratic regression model was .04. Further information on the quadratic relationship between optimal experiences on-site and off-site recollection of the social interaction benefit category is reported in Table 4.

Similarly, only the cubic regression model was significant for the greater knowledge benefit category ( $F(3, 157) = 3.77, p < .05$  vs.  $F(1, 159) = 2.61, p > .10$  for the linear regression model and  $F(2, 158) = 1.31, p > .10$  for the quadratic regression model). The adjusted  $R^2$  for the cubic regression model was .05. Table 5 provides more information on the cubic relationship between optimal experiences on-site and off-site recollection of the greater knowledge benefit category.

## Discussion

### *Optimal Experiences On-Site*

There are two areas associated with on-site optimal experiences which require brief discussion: (a) how this study measured these types of experiences, and (b) the quantity of these experiences outdoor recreationists reported receiving. In regard to the first area, we believe that the three items developed in this study do provide a starting point for the development of a scale which measures similarities across a number of optimal experience constructs (i.e., flow, peak, and absorbing experiences). In regard to second area, optimal experiences do appear to occur during outdoor recreation events. On average, respondents rated the quantity of their optimal experience 3.65 (1 = not at all, 3 = somewhat, 5 = a lot). Additionally, at least for the respondents in this study, this quantity appears to be relatively normally distributed.

### *Recollection of Benefits*

There are two major issues concerning the benefit categories that require further discussion. First, there appears to be both similarities and differences between Stein and Lee's (1995) benefit domains and the benefit categories found in this study. For example, Stein and Lee's learn new things domain is similar to the greater knowledge benefit category found in this

**TABLE 3**  
*Quadratic Regression for the Higher Meaning Benefit Category*

Summary of fit					
Adjusted $R^2$		0.1452			
Root mean square error		0.8687			
Dep mean		3.27			
Parameter estimates					
Term		Estimate	Std error	$t$ Ratio	Prob > T
Intercept		0.76	.61	1.24	.2173
Optimal Experience		1.20	.38	3.20	.0017
Optimal Experience <sup>2</sup>		-0.13	.06	-2.35	.0201
Analysis of variance					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Prob > F
Model	2	22.27	11.14	14.76	.0001
Error	160	120.74	0.75		
C total	162	143.01			

**TABLE 4**  
*Quadratic Regression for the Social Interaction Benefit Category*

Summary of fit					
Adjusted $R^2$		0.0424			
Root mean square error		0.9420			
Dep mean		3.23			
Parameter estimates					
Term		Estimate	Std error	$t$ Ratio	Prob > T
Intercept		1.27	.66	1.91	.0574
Optimal Experience		1.12	.41	2.74	.0068
Optimal Experience <sup>2</sup>		-0.15	.06	-2.47	.0145
Analysis of variance					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Prob > F
Model	2	8.03	4.01	4.52	.0123
Error	157	139.32	0.89		
C total	159	147.34			

**TABLE 5**  
*Cubic Regression for the Greater Knowledge Benefit Category*

Summary of fit					
Adjusted $R^2$		0.0494			
Root mean square error		0.8748			
Dep mean		2.65			
Parameter estimates					
Term	Estimate	Std Error	$t$ Ratio	Prob > T	
Intercept	5.78	1.34	4.32	.0001	
Optimal Experience	-4.09	1.47	-2.78	.0060	
Optimal Experience <sup>2</sup>	1.44	0.49	2.92	.0040	
Optimal Experience <sup>3</sup>	-0.15	0.05	-2.93	.0039	
Analysis of variance					
Source	DF	Sum of Squares	Mean Squares	F Ratio	Prob > F
Model	3	8.66	2.89	3.77	.0119
Error	157	120.16	0.77		
C total	160	128.82			

study. In contrast, the two items that make up this paper's activity-focused benefit category are part of two separate domains in Stein and Lee's study; stress relief/nature appreciation/fitness and achievement/stimulation. Similarly, the two items that make up this paper's social interaction benefit category are most closely related to two separate benefit domains in Stein and Lee's study; share similar values and meet new people. One explanation for why different benefit classes were found is that the two studies did not begin with the same number of benefit items (i.e., 18 in this study and 54 in Stein and Lee's study). Another explanation is that Stein and Lee's study focussed on a benefit's desirability, while this study focussed on the actual benefits outdoor recreationists believe they have gotten.

Second, although the higher meaning benefit category incorporates aspects of three of Stein and Lee's (1995) benefit domains (i.e., introspection, independence, and improved mental well-being and sense of self), it may be better understood holistically, using the concept of meaning. Baumeister (1991) states that meaning is "mental representations of possible relationships among things, events, and relationships. Thus meaning *connects* things" (p. 15). In addition to connection, Baumeister believes that stability is a second important aspect of meaning. Both connection and stability are implicated in something as mundane as the meaning of sentence and as profound as the meaning of one's life. In regard to latter level of meaning,

Baumeister (1991) notes that "ultimately, the most popular sources of meaning in life are contexts that span very broad time frames" (p. 360).

Examination of the items which loaded on the first benefit factor seems consistent with Baumeister's (1991) view of meaning. Specifically, the two highest loading items (i.e., "learn more about who I am" and "better understand my life and values") are concerned with making sense of one's self and life. The relevant, stable, long-term context is the natural environment, as illustrated by some of the terms found in other items (e.g., "nature," "nature's creatures"). Finally, the relationship between the individual and the natural environment is exemplified by the item "connect with nature and all of life;" while the specific nature of this relationship is reflected in terms of control (e.g., "improve my self-reliance" and "improve my sense of control over my life"), deference (e.g., "gain humility"), and spiritual (e.g., "grow spiritually") and ethical values (e.g., "gain greater respect for nature's creatures" and "enhance my environmental ethic").

Knopf (1987) provides further support for this interpretation when he states that nature can be "described in terms of its capacity to carry meaning" (p. 788). Knopf notes that these meanings may include nature as: (a) an affirmation of life's order, importance, and purposiveness; (b) something stable, timeless, and universal; (c) a pure, cleansing power greater than human action; and (d) a symbol of mystery, spirituality, or a new form of reality (1987, p. 788). Based on the above, therefore, this factor does appear to be concerned with one's sense of self and life, the natural environment, and determining the proper relationship between the two. As will be proposed in the next section, this interpretation provides insight into how and why the quantity of on-site optimal experiences affects the quantity of the higher meaning benefit category off-site, during recollection.

### *Relationship Between Optimal Experiences and Benefits*

After examining the regression models, at least three types of relationships appear to exist between the quantity of on-site optimal experiences and the quantity of benefit categories recollected off-site. First, there appears to be no significant relationship between the quantity of optimal experiences on-site and the quantity of the activity-focussed benefit category off-site. This finding is somewhat surprising, since Csikszentmihalyi and Csikszentmihalyi (1988) contend that continual improvement is necessary to ensure future flow experiences. Potentially, this result may be because, as noted in the literature review, skill (and challenge) "are less characteristic of the experience than they are conditions contributing to the achievement of flow-like experiences" (Mannell, 1979, p. 183).

Second, there appears to be a quadratic relationship between the quantity of optimal experiences that occur during the on-site phase of outdoor recreation and the quantity of the higher meaning and the social interaction benefit categories during the recollection phase of outdoor recreation. Examination of the regression models indicates that, in general, very low (i.e.,

scale mean score of 1 or 1.33), low (1.67, 2, or 2.33), and moderate quantities (2.67, 3, 3.33) of optimal experience result in lower quantities of these two benefit categories; high quantities (3.67, 4, and 4.33) of optimal experience result in the highest quantities of these benefit categories; and very high quantities (4.67 or 5) of optimal experience result in lower quantities of these benefit categories.

Initially, at least, the discovery of this kind of relationship seems to be counter to the literature, since optimal experiences are usually perceived only in a positive light—i.e., as a factor which can lead to reduced stress (Han, 1988; Hull, 1991; Massimini & Carli, 1988); improved interpersonal relations (e.g., Allison & Duncan, 1988; Massimini & Carli, 1988; Sato, 1988); or spiritual and environmental betterment (e.g., McDonald & Schreyer, 1991). However, an individual's pursuit of very high quantities of optimal experiences may also have a detrimental effect; what Driver (1996) calls a disbenefit. As Maslow (1970) states:

out of the joy and wonder of his ecstasies and peak-experiences he may be tempted to *seek* them, *ad hoc*, and to value them exclusively, as the only or at least the highest goods of life, giving up other criteria of right and wrong. Focused on these wonderful subjective experiences, he may run the danger of turning away from the world and from other people. (p. viii)

Csikszentmihalyi (1990) concurs, stating:

enjoyable activities that produce flow have a potentially negative aspect: while they are capable of improving the quality of existence by creating order in the mind, they can become addictive, at which point the self becomes captive of a certain kind of order, and is then unwilling to cope with the ambiguities of life. (p. 62)

It would appear, therefore, that very high quantities of optimal experiences may not always prove to be the most beneficial, at least when the quantity of the higher meaning and social interaction benefit categories are recollected by outdoor recreationists.

Examination of these two quadratic regressions also indicates that although the quantity of on-site optimal experiences explains only 4% of the variance in the quantity of the social interaction benefit category (a small to medium effect size), it does explain 15% of the variance in the higher meaning benefit category (a medium effect size; Cohen 1977, 1992). The latter finding may be because: (a) outdoor recreationists' optimal experiences take place in the natural environment; therefore, these special, out-of-the-ordinary, and/or meaningful (Mannell, 1996) experiences may either occur because of attributes *of* nature (Kaplan & Kaplan, 1989) or attributions *to* nature. Consequently, sense of self and life, the natural environment, and the relationship between the two is recollected as being both more "meaning full" and more beneficial as the quantity of optimal experience increases. (b) Some optimal experience characteristics (e.g., rhythm or flow, loss of consciousness of time, sense of re-creation, different from everyday life) are similar to some of the meanings attributed to nature (e.g., order, timeless-

ness, cleansing, spiritual, new forms of reality; Knopf, 1987). Once again, these experiences may result in sense of self and life, the natural environment, and the relationship between the two being recollected as both more meaningful and more beneficial as the quantity of optimal experiences increases. And (c) a combination of both (a) and (b) may be responsible for the quantity of on-site optimal experiences affecting the quantity of the higher meaning benefit category recollected off-site.

Finally, there appears to be a cubic relationship between the quantity of optimal experiences during the on-site phase of outdoor recreation and the quantity of the greater knowledge benefit category off-site, during the recollection phase of outdoor recreation. Specifically, very low (i.e., scale mean score of 1 or 1.33) and high (3.67, 4, or 4.33) quantities of optimal experiences produce higher quantities of the greater knowledge benefit category than low (1.67, 2, 2.33), moderate (2.67, 3, 3.33), and very high (4.67, 5) quantities of optimal experiences. Arguably, this finding may be due to different ways of learning about an area's history, flora, and fauna. For example, one outdoor recreationist may try to memorize a plant's name (i.e., "concentrated" learning), while another outdoor recreationist may try to experience the "essence" of the same plant (i.e., "absorbed" learning; Quarrick, 1989). Because optimal experiences and concentrated learning are largely disparate, the first recreationist could report a very low quantity of optimal experience but a definite learning benefit. In contrast, because optimal experiences and absorbed learning are not disparate, the second recreationist could report a high quantity of optimal experience as well as a definite learning benefit. What does not appear possible, however, is for an outdoor recreationist to report a very high quantity of optimal experience and a definite learning benefit. In this instance, the recreationist may be so focussed on his or her experience, that learning—either concentrated or absorbed—cannot occur. In conclusion, the quantity of optimal experiences during the on-site phase of outdoor recreation does appear to explain some of the variability in the greater knowledge benefit category—albeit only a small to medium amount (Cohen 1977, 1992).

In summary, the quantity of optimal experience during the on-site phase of outdoor recreation is a predictor of three of four benefit categories measured during the recollection phase of outdoor recreation. The nature of these relationships varies, with two quadratic and one cubic regression relationship being found. The quadratic relationship is of particular importance because it suggests that: (a) very high quantities of optimal experience may not result in correspondingly quantities of the higher meaning and social interaction benefit categories (and potentially, due to the addictive nature of very high quantities of optimal experiences, disbenefits may even result). And (b) the quantity of optimal experiences gotten on-site has a medium effect (Cohen, 1977, 1992) on the quantity of the higher meaning benefit category—a category which is concerned with the fundamental issues of how people make sense of their selves and their lives, the natural envi-



ronment, as well as what constitutes the proper relationship between the two.

### Study Limitations, Management Implications, and Research Recommendations

There are at least four limitations which may affect the findings in this study. First, the optimal experience scale developed in this paper requires further development and testing. Second, the list of benefits measured in this study was relatively small. Third, the quantity of benefits recollected likely varies depending upon how long after the on-site visit the recreationist completed the mail-out questionnaire (e.g., after receiving the first mail-out questionnaire, the postcard reminder, or the second mail-out questionnaire). Finally, some concern exists regarding the amount of variance the quantity of on-site optimal experiences explained (i.e., 4% of the social interaction benefit category, 5% of the greater knowledge benefit category, and 15% of the higher meaning benefit category).

Having noted these difficulties, the authors still contend, however, that: (a) optimal experiences occur during the on-site phase of outdoor recreation; (b) during the recollection phase of outdoor recreation, people believe they have gotten benefits from their visits; and (c) the quantity of optimal experience during the on-site phase of outdoor recreation affects the quantity of at least some benefits off-site, during the recollection phase of outdoor recreation. While the size of this effect is small to medium for the social interaction and greater knowledge benefit categories and medium for the higher meaning benefit category, it is comparable with effect sizes found in other areas of the behavioural sciences (Cohen 1977, 1992). Further, by implementing some of the research recommendations that follow, it may be found that the effect of optimal experiences on benefits is, in fact, even greater. At this point, however, the authors will simply put forth that the quantity of optimal experiences got during the on-site phase of outdoor recreation is a predictor of the quantity of benefits gotten off-site, during the recollection phase of outdoor recreation.

These findings have at least two potential implications for outdoor recreation planners and managers. First, since most public land management agencies are mandated to provide outdoor recreation opportunities, it is necessary for their employees to appreciate the variety of experiences that occur in these natural areas—including optimal experiences. Second, the need to measure such special, meaningful, and/or out-of-the-ordinary (Mannell, 1996) experiences becomes even more important as emphasis shifts to planning and management of both hard-to-define, nature-based values and benefits. The authors believe that studies such as this one offer a means for doing both.

Finally, in regard to future research, four recommendations are put forth. First, similarities and differences among optimal experience constructs

(e.g., flow, peak, and absorbing experiences) must be clarified. Second, refinement of the current optimal experience scale should occur. Future research may, for example, be able to develop an optimal experience scale item which measures loss of consciousness of the self. Third, greater empirical research on the kinds of benefits—and disbenefits—outdoor recreationists accrue is needed. Fourth, future research on the multiple phases of outdoor recreation is necessary; including, but not limited to, how optimal experiences during the on-site phase of outdoor recreation are related to off-site benefits during the recollection phase of outdoor recreation.

Optimal experiences, by definition, are special, meaningful, and/or out-of-the-ordinary. Further study of such experiences, particularly their effect on people after they leave outdoor recreation settings, is both needed and worthwhile.

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