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Houses of Worship as Restorative Environments

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Houses of Worship as Restorative Environments

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Abstract

This study of the restorative benefits of visiting a house of worship was based on questionnaire responses by 781 participants. Factor analysis of motivations for visiting yielded five factors, three of which matched those from a previous study (spirituality, beauty, and being away) and two new ones (contemplation and obligation). Factor analysis of activities at a house of worship yielded four factors along a gradient corresponding roughly to degree of organized religious practice: rituals, traditional activities, asking, and nonreligious activities. Spirituality and asking (for help or forgiveness) were the strongest predictors of positive outcomes, whereas nonreligious activities predicted negative outcomes. The results support and extend Attention Restoration Theory. They indicate that a house of worship can provide a compatible setting for satisfying a spirituality motive and for the cognitive activity of asking which can aid in conserving and restoring directed attention as well as fostering meditation and reflection.

Keywords

restoration, attention, reflection, spirituality, house of worship

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A recent large-scale study of spirituality among college students shows that whereas spirituality increases during the college years, attendance at religious services declines (O'Keefe, 2008). By the junior year in college, the percentage of undergraduates who attend religious services frequently drops from 44% to 25%. However, even the lower rate of attendance represents very large numbers of students who find benefit from visiting a house of worship. When we consider that there are other psychologically meaningful activities that can occur at a house of worship in addition to formal religious services (e.g., reflection, quiet prayer, socializing), it becomes clear that houses of worship are environmental settings that can play an important role in the well-being of students and nonstudents alike. In particular, we were interested in the potential restorative benefits that might accrue from visiting houses of worship.

The research reported here was patterned after a study of a monastery as a restorative setting (Ouellette, Kaplan, & Kaplan, 2005). That study is briefly reviewed below. In broad overview, the study documented the motives, activities, and outcomes involved in a retreat at a monastery as a restorative experience. The study also provided an opportunity to explore a spiritual dimension in restorative experiences and in restorative theory. We reasoned that if a monastery can be restorative, then surely it was worthwhile to investigate the restorative potential of a similar but much more widely accessible setting, the house of worship.

There were important differences in method and target population between the current study and the monastery study. The current study explored reactions to a generic setting category, houses of worship, whereas the previous study explored reactions to a retreat experience at a specific monastery. Although the two studies used the same general procedure, both the setting context and the kinds of issues that could be explored differed to some extent between the studies. The current study targeted a population of college undergraduates who frequent houses of worship, whereas the earlier study focused on older males who participate in a monastery retreat. We explore the implications of these differences further in the Discussion section. Given these differences, it would be reasonable to assume that results common to the two studies might have fairly broad generality. At the same time, results peculiar to the current study might provide valuable insights for further investigation into the restorative possibilities associated with houses of worship.

Theoretical Background

The present study and the previous one were guided by Attention Restoration Theory (ART; Kaplan & Kaplan, 1989; S. Kaplan, 1995, 2001). ART holds

that directed attention, the kind that requires an effort, can become fatigued from prolonged use, leading to the inability to focus attention voluntarily. Directed attention fatigue has several unfortunate consequences, including performance errors, inability to plan, social incivility, and irritability. Restoration requires a setting that is different from the ones that led to fatigue (being away), has sufficient scope and organization to occupy one's mind (extent), holds attention without requiring an effort (fascination), and supports one's inclinations or purposes (compatibility). All four of these properties are hypothesized to be essential for a successful restorative experience.

Kaplan (1995) draws a distinction between hard and soft fascination. Hard fascination is very intense, riveting one's attention and leaving little room for thinking things over. In contrast, soft fascination is of moderate intensity, enough to hold attention while still leaving room for reflection. Settings with soft fascination also include an aesthetic component which can help offset any pain that may accompany reflection. Both types of fascination can permit fatigued directed attention to rest, but settings with soft fascination enable the additional benefit of the opportunity for reflection. Herzog, Black, Fountain, and Knotts (1997) provide empirical support for distinguishing recovery of directed attention and reflection as separate benefits of a restorative experience.

Based on the necessary properties of a restorative setting and the distinction between hard and soft fascination, ordinary natural settings are generally expected to be better candidates for restoration than many typical urban settings. Many peaceful natural settings are thought to be especially good sources of soft fascination. Much of the research on ART has demonstrated the restorative superiority of natural over urban settings (e.g., Berto, 2005; Canin, 1992; Cimprich, 1993, 1999; Hartig, Evans, Jamner, Davis, & Garling, 2003; Hartig, Mang & Evans, 1991; R. Kaplan, 2001; Taylor, Kuo, & Sullivan, 2001, 2002; Tennessen & Cimprich, 1995; Wells, 2000). Some studies (e.g., Kuo, 2001; Kuo & Sullivan, 2001) have used formal mediation analysis to demonstrate that a beneficial effect of nature was mediated by its effect on directed attention capacity.

Some research has begun to investigate other possibilities for restorative settings such as museums (Kaplan, Bardwell, & Slakter, 1993), favorite places (Korpela, Hartig, Kaiser, & Fuhrer, 2001), and a monastery (Ouellette et al., 2005). As Ouellette et al. (2005) point out, despite the growing literature on restoration, there appears to be few empirical studies on the restorative benefits of spiritual settings.¹ On theoretical grounds, one would expect spiritual settings like houses of worship and monasteries to be good candidates for restorative experiences. Such settings are typically distinct and apart from one's everyday

settings (being away), have sufficient scope and coherence to occupy one's mind (extent), provide a peaceful and architecturally beautiful setting for reflection and other spiritual activities (soft fascination), and are supportive of one's motives for entering the setting (compatibility). Heintzman (2002) suggests that reflection is an important component of spiritual well-being and should be enhanced by settings with soft fascination. Both houses of worship and monasteries are likely to be settings rich in soft fascination. They are often located in peaceful surroundings and are themselves noted for being tranquil and quiet. In addition, many houses of worship, even those with modern physical designs, tend to have a strong aesthetic component in their architecture and interior design. S. Kaplan (2001) explores the parallels between seeking restorative settings and meditation as routes to restoration. In spiritual settings that foster reflection, seeking a restorative setting and meditation can merge into a single route to restoration.

The Monastery Study

Ouellette et al. (2005) administered a survey to 521 male guests on the last day of their retreat at a Canadian monastery. The survey asked about recent personal problems, motivations for making the retreat, activities during the retreat, and outcomes of the retreat. Although results were presented separately for first time and repeat visitors, we focus on the results for repeat visitors because they are likely to be more relevant to the participants in our study, people who visit houses of worship. Factor analysis revealed four categories of motivation for retreat: spirituality, beauty, compatibility, and being away. Beauty seemed to be a combination of soft fascination ("allows me to do something fascinating," "beauty of the abbey") and extent ("explore a wonderful place") from ART. Thus, all four properties of a restorative setting from ART were represented in the retreat motivations as well as a distinct spiritual dimension. Motives tended to be stronger predictors of activities and outcomes than were personal variables or problems. The researchers were impressed by the distinct role of the spirituality motive in predicting outcomes, most notably overall satisfaction with the retreat experience.

The monastery study suggests some general conclusions that might serve as expectations for a study of houses of worship. First, the four necessary properties of a restorative setting postulated by ART are likely to be useful in accounting for activities and outcomes. They may not appear as four distinct predictors, but even if combined into a construct such as beauty, the influence of the ART predictors will be felt. Second, the spiritual context of the setting will likely mean that the motive of spirituality plays an important role in

predicting activities and outcomes. Third, motives may be more potent predictors (in terms of variance accounted for) than personal variables or problems. Finally, the pattern of effective predictors is likely to differ for different activities and outcomes. The motive of spirituality should be a predictor of overall satisfaction, whereas other motives may be more important for some of the other outcomes.

The Present Study

The main purpose of the present study was to explore how houses of worship can serve as restorative settings in the context of ART but with due regard for the spiritual nature of the setting. We adapted the survey used in the monastery study in a way that was sensitive to the changes in setting (monasteries versus houses of worship) and population sampled (adult males on retreat versus university undergraduates of both genders). The details of the changes are discussed in the Method section. Although most changes were aimed at generating items that made sense for a house-of-worship context while maintaining the factor categories of the monastery study in case they should be salient for our respondents, in some instances we wished to explore the possibility of new factors. Thus, in the section of the survey on motivations, we added items dealing with guilt, habit, and obligation. Major revamping was necessary in the activities section of the survey because the monastery study contained mostly items that were peculiar to the monastery setting. Our replacement items were guided by a determination to maintain a distinction between community and individual activities, as documented in the earlier study. However, we also included some new items dealing with petitioning, an activity that we thought was particularly relevant in houses of worship. For outcomes, we used exactly the same items as in the monastery study.

Method

Participants

Participants consisted of 781 undergraduate students at a public university in the Midwestern United States. All were enrolled in an introductory psychology course and participated to fulfill a course requirement. The vast majority of the participants were less than 20 years of age (86%; 14% were 20 to 29 years old and 2 respondents were in the 30 to 39-year-old range) and single (99%). A majority (69%) were female. Their religious affiliations were primarily Protestant (34%), Catholic (32%), and other (31%). Other did not include Jewish,

Islam, Eastern, or none which together accounted for 3% of the sample. Open-ended comments by participants suggested that they considered nondenominational and campus ministry, neither of which was available as a response alternative, to qualify as other. Because many of the students had to rely on campus ministry, which is not clearly affiliated with any religious denomination, this may help explain why the percentage was so high for that category. Most respondents visited a house of worship as part of a group of at least three people (56%) or with a single companion (32%). The vast majority had been attending a house of worship for 11 to 20 years (80%); no other time span exceeded 10%. A qualifying variable for the study was that potential participants should visit a house of worship at least occasionally because we wished to avoid participants who never visited. A house of worship was defined for potential participants as "any formal setting in which public religious activities occur. Houses of worship include churches, temples, synagogues, mosques, or any other structures that serve as settings for formal religious activities." Actual frequency of visits was fairly evenly spread. The modal category was once per week (33%), followed by at least once a month (28%), at least once a year (24%), more than once per week (10%), and less than once a year (2%).

Instrument and Procedure

The survey was patterned on the one used by Ouellette et al. (2005). We modified the structure of the survey to eliminate their distinction between first-time and repeat visitors. We also changed the content of items to focus on a house-of-worship setting rather than a monastery retreat. The survey consisted of 116 items plus a blank page for personal comments.² Blocks of items dealt, in order, with the following topics: (a) motivations for going to a house of worship (36 items), (b) experiences or activities while at a house of worship (19 items), (c) outcomes or results of a visit to a house or worship (15 items), and (d) recent problems and general mood states in the participant's life (27 items in two blocks). The question stem for the motivation items was "There are many reasons why people decide to go to a house of worship. How much do the following influence your decision to go to a house of worship?" For the activities items, the stem was "While at the house of worship, how frequently do you participate in the following activities?" For the outcome items, the stem was "At the end of a typical experience at your house of worship, to what extent would each of these adjectives describe you?" The items for problems and moods asked the participant to consider the past few months and indicate to what extent each item had been

either a problem (first block, 14 items) or described the participant's situation (second block, 13 items). The constructs measured by the various blocks of items are described in the first part of the Results section. Responses to the items were made using a 7-point scale ranging from *strongly agree* to *strongly disagree* for all blocks of items except the one for experiences or activities where the 7-point scale ranged from *never* to *almost always*. In addition, the survey contained 8 items dealing with demographic information and the personal background of the participants.

We ran 45 sessions consisting of from 2 to 32 participants. The procedure within each session was to obtain informed consent and then to pass out survey booklets and computer response sheets. The first page of the survey booklet contained instructions and a definition of a house of worship identical to the one given earlier. Participants made responses on the computer sheets and worked at their own pace. Most required from about 25 to 45 minutes to complete the survey.

Analysis

Our data-analysis strategy was also patterned after the one used by Ouellette et al. (2005). We factor analyzed the responses to items within each of the topic areas above to determine the underlying constructs being measured.³ Factor-based scores for each construct were derived by averaging the item scores for pure-loading items, reverse scoring items where necessary to ensure that a high score always meant that the participant was high in the construct. In subsequent analyses, we supplemented the factor-based scores with scores from individual survey items that met three criteria: (a) the item was not represented in the factor-based scores, (b) it dealt with a topic that we thought worth including in the analysis, and (c) scores for the item had no correlation with the factor-based scores that exceeded .40. (The outcome item on satisfaction was an exception. We included it as a separate outcome measure even though its correlations with each of the factor-based outcome measures exceeded .40. We did so because we felt it was important to examine satisfaction separately from all other outcome measures.) We then used regression analysis in three phases to predict (a) motivations from demographic/personal variables and problems-moods, (b) experiences/activities from demographic/personal variables, problems-moods, and motivations, and (c) outcomes from demographic/personal variables, problems-moods, motivations, and activities. We then built a final regression model predicting each outcome from all predictors that had been effective in previous analyses.

Results

Developing Measures of Problems-Moods, Motivations, Activities, and Outcomes

Factor analysis of 26 of the problems-moods items (One item, "other," was omitted from the analysis.) yielded five factors that accounted for 36% of the variance in the ratings. The first factor consisted of five items that were either direct descriptions ("burnout or exhaustion," "too much to do") or symptoms ("small things upset me," "had difficulty making decisions") of mental fatigue, as described in ART (S. Kaplan, 1995). We called the factor Mental Fatigue. The second factor consisted of six items all describing generally positive situations and feelings. We think of this factor as Positive Affect. The third factor consisted of three items all dealing with the inability to maintain focus. In deriving factor-based scores, we reverse scored the one positively worded item ("Generally could stay focused on a task") to render the factor as a problem, Lack of Focus. The fourth factor consisted of four items dealing with family, financial, and work-related problems. It seemed to be a catch-all category, and so we named it Personal Problems. The last factor consisted of two items focused on family difficulties and demands and thus was named Family Problems. Correlations among the factors ranged from $-.11$ between Positive Affect and Family Problems to $.46$ between Mental Fatigue and Lack of Focus. Table 1 contains descriptive statistics for all factors in this study. The top portion of the table shows that we obtained generally low mean ratings for problems. The only two problem categories slightly on the agree side of the scale were Mental Fatigue and Lack of Focus. The participants generally disagreed that the other two problem categories, Family and Personal Problems, were serious issues for them. The participants also agreed that Positive Affect described their mood state. The ranking of these categories suggests that mental fatigue, with its attendant lack of focus, is a salient problem for university students.

Factor analysis of the 36 motivation items yielded five factors. Factor composition varied slightly between solutions. We found the seven-factor solution, which accounted for 53% of the variance in the ratings, to be the most insightful. The first five factors of that solution consisted of at least two items and were easily interpreted. The first three of those factors were similar to factors found by Ouellette et al. (2005). The first factor consisted of 12 items like "worship God or a higher power," "be close to God," and "contributes to my spirituality." This was the Spirituality factor. The second factor consisted of five items such as "provides rest," "get away from daily responsibilities," and "removes me from a world of agitation and turmoil." This was the Being

Away factor. The third factor consisted of four items dealing with beauty (“allows me to appreciate the beauty of the setting”) and fascination (“fascinated by the setting”). As in the monastery study, the items seem to combine extent and fascination in a way that is reasonably summarized as Beauty. The last two factors were unique to this study. The fourth factor consisted to two items: “provides an opportunity to meditate” and “provides an atmosphere of contemplation.” We called it Contemplation. The last factor consisted of three items suggesting obligation, guilt, or habit as reasons for visiting a house of worship. We called the factor Obligation. Correlations among the factors ranged from .07 between Spirituality and Obligation to .57 between Being Away and Beauty. As Table 1 indicates, the Spirituality factor had the highest mean rating. Almost a full scale point lower was Contemplation, followed by Being Away. The remaining two factors had mean ratings close to the middle or neutral point of the 7-point scale. Note that the last two factors, Contemplation and Obligation, had weak internal consistency owing perhaps in part to the small number of items.

The factor analysis of the activities items yielded four factors which accounted for 44% of the variance in the ratings. The first factor consisted of four items of a religious nature that cut across the personal–communal distinction (e.g., “listening to sermons or other spiritual talks,” “thinking about religious matters”) plus a fifth, apparently nonreligious activity (“socializing”) that traditionally happens at a house or worship. Our participants may have thought of socializing at a house of worship as an essentially religious activity in that it promotes a sense of community in a religious context. Many open-ended comments focused on interacting with like-minded people in a religious setting as a valued activity. We called this factor Traditional Religious Activities. In sharp contrast, the second factor consisted of all five items that dealt with clearly Nonreligious Activities (e.g., “letting my mind wander,” “thinking about work,” “watching other people”). The third factor (four items) focused on formalized religious activities, personal or communal (e.g., “participating in formal rituals,” “personal religious rituals”). We called it Rituals. The fourth factor consisted of only two items: “asking for help,” and “asking for forgiveness.” The factor was named Asking. Correlations among the factors ranged from .10 between Traditional Religious Activities and Nonreligious Activities to .40 between Traditional Religious Activities and Asking. As Table 1 indicates, the mean ratings for these factors reinforce a theme established by the ratings of the motivation factors: the primacy of spirituality (Spirituality, Contemplation) over formality (Obligation). Here the highest rated factors were Traditional Religious Activities and Asking, whereas the other two factors were closer to the middle of the scale. For our student

sample, activities at a house of worship seem to be categorized along a gradient of how intensely spiritual the activities are.

We used exactly the same 14 outcome items as did Ouellette et al. (2005), and our factor structure was very similar to theirs with minor differences in factor composition. Our Inability to Focus factor consisted of the only four negative adjectives (irritable, tormented, disorganized, and distracted) and matched theirs exactly. Our Peace factor consisted of five items, three of them ("rested," "clear-headed," "relaxed") matching those of Ouellette et al. The remaining two items on our Peace factor were "patient" and "competent." The competence item loaded on the Competence factor of Ouellette et al. and inspired its name. Our remaining factor consisted of three items ("alert," "efficient," "attentive") which matched items on their Competence factor. Because our competence item insisted on loading on our Peace factor, we were reluctant to name our final factor Competence, opting instead for Effective Functioning, following the terminology of R. Kaplan (2001). Our students seem to see competence more as an indicator of the peace of mind that comes from self-confidence than as a description of effective functioning. The two positive factors, Peace and Effective Functioning, were positively correlated ($r = .43$), and both were negatively correlated with Inability to Focus ($r = -.46$ and $r = -.38$, respectively). As indicated in Table 1, the positive factors (Peace and Effective Functioning) received mean ratings above the midpoint of the agreement scale, whereas Inability to Focus received a very low rating. The single item measuring satisfaction also received a high rating (mean = 5.61), attesting to the value undergraduate students place on visiting a house of worship.

Predicting Motivations and Activities

We examined six demographic/personal variables as predictors of the five motivations for visiting a house of worship: gender, age (collapsed into two categories: less than 20 years of age and at least 20 years of age), religious affiliation (collapsed into three categories: Protestant, Catholic, and other), how long the participant had been attending a house of worship (six ordered categories ranging from less than a year to 31-40 years), how often the participant visited a house of worship (five ordered categories ranging from less than once per year to more than once per week), and the typical size of the group with whom the participant visited a house of worship (three ordered categories: alone, with one other person, with a group). The results in the top half of Table 2 are based on separate regression analyses for each of the five motivations.⁴ Only three predictors were effective. Gender predicted the Spirituality

Table 1. Descriptive Statistics for All Factors

Factor	Descriptive Statistic		
	Percentage of Variance Accounted for	α	Mean Rating
Problems-moods			
Mental fatigue	8.31	.65	4.37
Positive affect	8.21	.73	4.44
Lack of focus	8.12	.74	4.16
Personal problems	6.27	.64	2.86
Family problems	5.09	.79	3.38
Motivations			
Spirituality	21.75	.93	5.82
Being away	7.23	.76	4.54
Beauty	6.76	.80	4.34
Contemplation	4.06	.57	4.92
Obligation	3.94	.64	3.92
Activities			
Traditional religious activities	12.53	.76	5.16
Nonreligious activities	11.21	.76	4.04
Rituals	10.52	.73	4.24
Asking	9.64	.80	4.90
Outcomes			
Inability to focus	18.93	.76	2.40
Peace	17.49	.78	5.11
Effective functioning	12.09	.74	4.78

motive, with males lower in the motive (means = 5.48 and 5.97 for males and females, respectively). Religious affiliation predicted Obligation. Catholics were higher in a sense of obligation (mean = 4.33) than Protestants or others (means = 3.78 and 3.72, respectively). Frequency of attending was positively related to Spirituality, Beauty, and Contemplation.

For predicting motivations, the five problem-mood factors were supplemented by five individual problem items: "alcohol or drug dependency," "problems with romantic relationships," "personal health," "problem with friendships," and "the world situation." These items did not load on any of the factors and had no correlations greater than .33 with the factors or with each other. The regression analyses, summarized in the bottom half of Table 2, revealed few effective predictors of motivations for visiting a house of worship and quite modest amounts of variance explained. Mental Fatigue was a

Table 2. Demographic/Personal Variables and Recent Problems-Moods as Predictors of Motivations for Attending a House of Worship

	Spirituality	Being Away	Beauty	Contemplation	Obligation
Demographic/personal variables					
Gender	-.19				
Religious affiliation					.17
How often	.34		.15	.20	
Adjusted R^2	.20	.02	.02	.04	.07
F	26.72	3.24	3.58	5.55	9.24
p	<.001	.002	.001	<.001	<.001
Problems-moods					
Mental fatigue		.14			.16
Positive affect	.13	.13	.15		
Alcohol/drugs	-.19				
World situation				.13	
Adjusted R^2	.06	.04	.03	.03	.06
F	6.21	4.11	3.07	3.54	5.98
p	<.001	<.001	.001	<.001	<.001

Note: Significant ($p < .001$) partial correlations are reported. Only predictors that were significant for at least one outcome measure are included. $df = 7,730$ for each analysis involving demographic/personal variables and $df = 10,770$ for each analysis involving recent problems.

positive predictor of Being Away and Obligation. Positive Affect was a positive predictor of Spirituality, Being Away, and Beauty. Alcohol/drug dependency was a negative predictor of Spirituality. Finally, the world situation was a positive predictor of Contemplation.

For prediction of activities, we added a fifth activity category consisting of a single item, "Meditation." This was the only item that failed to load on any of the factors and its largest correlation with any of the factors was .35. The regression models predicting each of the five activities from the six demographic/personal variables generally accounted for only modest amounts of variance (adjusted R^2 ranging from .02 to .11) except in the case of Traditional Religious Activities (adjusted $R^2 = .32$). Only three predictors were effective. How long the participant had been attending a house of worship was a positive predictor of Traditional Religious Activities (partial correlation = .15). Frequency of attendance was positively related to Traditional Religious Activities, Rituals, and Asking (partial correlations = .41, .18, and .16, respectively). Religious affiliation predicted Traditional Religious Activities and Rituals (partial correlations = .30 and .28, respectively). The pattern of means varied for the two activities. For Traditional Religious Activities, Protestants were

Table 3. Motivations as Predictors of Activities at a House of Worship

Motivations	Traditional Religious Activities	Nonreligious Activities	Rituals	Asking	Meditation
Spirituality	.43	-.26	.16	.38	-.14
Being away		.16			
Beauty				-.14	
Contemplation		.14	.17		.48
Obligation		.28			
Adjusted R^2	.23	.18	.11	.20	.28
F	47.49	35.15	21.12	40.14	159.32
p	<.001	<.001	<.001	<.001	<.001

Note: Significant ($p < .001$) partial correlations are reported. $df = 5,775$ for each analysis.

highest, followed by others, and then Catholics (means = 5.69, 5.28, and 4.57, respectively). For Rituals, Catholics were highest, followed by Protestants, and then others (means = 4.79, 4.15, and 3.87, respectively).

As was the case for the demographic/personal variables, problems-moods played a minor role in predicting activities at a house of worship. Adjusted R^2 ranged from .02 to .06 in the five regression models. Only two of the predictors were effective. Mental fatigue was positively related to both Nonreligious Activities and Asking (partial correlations = .16 and .15, respectively). Alcohol/drug dependency was negatively related to Traditional Religious Activities (partial correlation = -.13).

In contrast to the other types of predictors, motivations were more potent predictors of activities at a house of worship. The regression analyses are summarized in Table 3. Note the higher adjusted R^2 values. Spirituality predicted all the activities. It was the only predictor of Traditional Religious Activities and a strong one. It was also a relatively strong predictor of Asking. Spirituality was negatively related to Nonreligious Activities and Meditation. Whereas Spirituality inclined participants away from Nonreligious Activities, Being Away, Contemplation, and Obligation were positive predictors of such activities. Contemplation as a motive was also a positive predictor of Rituals and a strong positive predictor of Meditation. The appreciation of Beauty as a motive tended to lead participants away from Asking.

Predicting Outcomes

The regression models predicting each of the four outcomes (three outcome factors plus the satisfaction item) from the six demographic/personal variables

Table 4. Results From Separate Regression Models Using Motivations and Activities to Predict Each Outcome Measure

	Satisfaction	Inability to Focus	Peace	Effective Functioning
Motivations				
Spirituality	.49	-.37	.27	.39
Being away			.17	
Obligation	-.14	.15	-.15	
Adjusted R^2	.32	.16	.23	.26
F	74.75	31.53	48.14	55.98
p	<.001	<.001	<.001	<.001
Activities				
Traditional religious activities	.18	-.19		.13
Nonreligious activities	-.30	.29	-.19	-.24
Asking	.18	-.18	.14	.55
Adjusted R^2	.17	.16	.10	.42
F	33.33	31.02	17.32	114.70
p	<.001	<.001	<.001	<.001

Note: Significant ($p < .001$) partial correlations are reported. $df = 5,775$ for each analysis. Only predictors that were significant for at least one outcome measure are included.

accounted for small amounts of variance (adjusted R^2 ranging from .03 to .06). Only one predictor was effective. Frequency of attendance was related to all four outcomes, negatively to Inability to Focus (partial correlation = $-.21$) and positively to the other three outcomes (partial correlations of .16, .19, and .21 for Peace, Effective Functioning, and satisfaction, respectively).

Personal problems-moods were also not strong predictors of outcomes (adjusted R^2 ranging from .04 to .07). Only two predictors were effective. Positive Affect was positively related to Peace, Effective Functioning, and satisfaction (partial correlations = .18, .15, and .16, respectively). Concern about the World Situation was positively related to Peace (partial correlation = .13). Given that Inability to Focus was among the outcome variables, notably absent from the list of effective problem predictors was Lack of Focus.

Separate regression models for predicting each of the four outcomes from motivations and from activities are summarized in Table 4. As in previous analyses, models with motivations or activities as predictors accounted for more variance than models with demographic/personal variables or problem-mood variables as predictors. The top half of the table shows that among the motivations Spirituality had relatively strong relations with all four outcomes. It was a negative predictor of Inability to Focus and a

Table 5. Results From Final Regression Models Based on Significant Predictors From All Previous Analyses for Each Outcome Measure

	Satisfaction	Inability to Focus	Peace	Effective Functioning
Problems-moods				
Positive affect	.13		.16	.18
Motivations				
Spirituality	.45	-.19	.22	.25
Being away			.24	
Activities				
Nonreligious activities	-.13	.18	ns	-.14
Asking	ns	ns	ns	.53
Adjusted <i>R</i> ²	.36	.21	.28	.48
<i>F</i>	61.64	34.11	36.39	118.51
<i>df</i>	7,759	6,760	8,758	6,760
<i>p</i>	<.001	<.001	<.001	<.001

Note: Significant (*p* < .001) partial correlations are reported. Only predictors that were significant for at least one outcome measure are included. ns = variables in regression model that were not significant at *p* < .001.

positive predictor of the other three outcomes. Obligation had the opposite pattern, except that it did not predict Effective Functioning. Being Away was positively related only to Peace, emphasizing the importance of getting away for achieving respite. The bottom half of the table shows that both Traditional Religious Activities and Asking were positively related to Effective Functioning and satisfaction but negatively related to Inability to Focus. Nonreligious Activities had exactly the opposite pattern of relations. In addition, Nonreligious Activities was a negative predictor of Peace whereas Asking was a positive predictor.

Final Models for Predicting Outcomes

Significant predictors of outcomes in all previous analyses were used to build final regression models for each outcome measure. Table 5 includes only predictors that were effective for at least one of the outcome measures in the final models. To aid comprehension, the significant results in Table 5 are shown graphically in Figure 1. Two points are immediately evident. First, the demographic/personal variables are completely absent from the final models. Thus, those variables had no ability to predict outcomes apart from their relations to the other categories of predictors. Second, as was true in previous

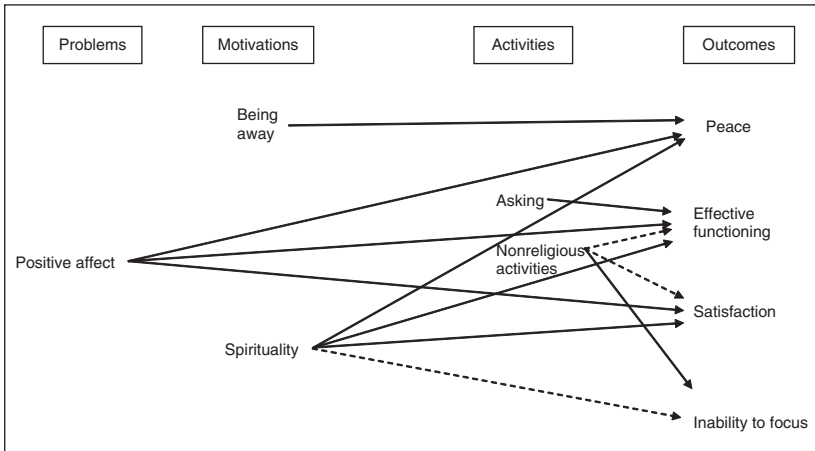


Figure 1. Significant Predictors of Outcome Measures in Final Regression Models
 Note: Dashed lines indicate negative relationship.

analyses, motivations and activities were generally stronger predictors of outcomes than were problems-moods.

Table 5 and Figure 1 aid our understanding of the distinct pattern of predictors for each outcome measure. For satisfaction, the strongest predictor was Spirituality. This finding reinforces the open-ended comments of many of our students who emphasized that their major goal in visiting a house of worship was to enhance their relationship with God. Spirituality was the only predictor that was effective in all four analyses, but it was the strongest predictor only for satisfaction. Two other predictors of satisfaction were Positive Affect and Nonreligious Activities, with positive and negative relations, respectively. There were only two predictors of Inability to Focus, and the relations were relatively modest in strength. Inability to Focus was positively related to Nonreligious Activities and negatively related to Spirituality. Note again the absence of Lack of Focus (the problem) as a predictor of Inability to Focus (the outcome). Effective Functioning produced the strongest predictor relation of the study. Simply Asking (for forgiveness or help) was far and away the most potent (positive) predictor. Spirituality and Positive Affect were also positive predictors, whereas Nonreligious Activities was a negative predictor. There were three positive predictors of Peace: Being Away, Spirituality, and Positive Affect.

Discussion

This study continues the trend toward examining the restorative experience in settings other than nature. Specifically, it extends the work of Ouellette et al. (2005) in studying restoration in a spiritual context. The major difference is that whereas the previous study focused on a spiritual setting that is relatively inaccessible to the majority of people in need of restoration, the current study concentrated on a generic setting, the house of worship, that is widely available, widely used, and that plays an important role in the lives of many people. Thus, study of the restorative benefits of houses of worship can further our understanding of the enormous influence of environmental settings on human behavior. Other important differences between the two studies, discussed below, include participant population, study context, and method. As noted earlier, common findings that transcend these differences seem likely to have broad generality. New findings might provide useful clues for further investigation. We examine both kinds of findings in the following discussion.

Several similar findings in the monastery and current studies speak to the expectations outlined in the introduction. First, both studies yielded three common restoration motives: spirituality, beauty, and being away. Given that beauty can be seen as a combination of soft fascination and extent, the ART predictors were well-represented in both sets of results. Moreover, the lack of a perceptible compatibility motive in the current study does not mean that compatibility is unimportant in restoration at houses of worship. The combination of a strong spirituality motive, meaningful activities that satisfy that motive, and strong satisfaction means that compatibility must have occurred for the typical respondent.

Second, both studies emphasize the importance of context-specific motives in addition to the ART predictors. For both studies, the preeminent context-specific motive was spirituality. In both cases, it was a distinct motive, was among the highest-rated motives, and was generally a positive predictor of outcomes. In this study, spirituality was easily the strongest predictor of overall satisfaction. Although the two studies highlight the importance of context-specific motives, such motives can be seen as extensions of underlying ideas in ART rather than as indicators of a need for new theoretical concepts. As Ouellette et al. (2005) points out, spirituality involves aligning oneself with an unseen order for the purpose of dealing with otherwise uncontrollable issues that may be distracting. Such a cognitive coping strategy avoids depletion of directed attention that would occur if there were no other means of dealing with these issues.

Third, motives were relatively strong predictors in terms of variance accounted for. In the monastery study, the greatest adjusted R^2 values occurred when predicting activities from motivations. In the current study, the greatest adjusted R^2 values occurred when predicting either activities or outcomes from motives. In this study, activities were also relative potent predictors of outcomes, primarily because of the predictive power of the new activity factor, asking. In the causal flow implied by our data-analysis scheme, motives and actions are closer to outcomes than personal problems or demographic variables. The adjusted R^2 values support this schematic framework. The results for frequency of attendance provide a concrete example. In the initial analyses, frequency predicted all four outcomes. However, in the final analysis including all levels of predictors, frequency was ineffective. Thus, frequency may have only indirect connections to outcomes.

Finally, the results of both studies point to a distinction between deeper, more transcendent spiritual experiences and the organized practices of religion. The major indicator of this distinction in both studies was the importance of spirituality as a motive and as a predictor. The quest for spirituality operated independently of activities in both studies. In the current study, the distinction also appears in the activity factors. Asking was a strong predictor of effective functioning in the final regression model, whereas ritual and traditional religious activities were ineffective. This does not mean that organized religious activities cannot be an aid to spirituality for some people (possibly older age groups, as discussed below), but they were relatively ineffective in this study.

New Insights

The present study yielded some valuable new insights. The most striking new insights came from the portion of the survey that differed most from the one used in the monastery study, the activities section. That section allowed us to distinguish between traditional religious activities and nonreligious activities and to show, in the final regression model, that the latter were better predictors of outcomes, albeit generally negative predictors. However, the most impressive new insight was the power of asking as an activity. That simple two-item scale, with its strong internal consistency, produced the strongest predictive relation of the study. Because the asking items deal with issues that cannot be resolved by an individual, the strong relation with effective functioning points, even more clearly than the spirituality results, to the importance of being able to offload difficult issues onto a higher power. The implications for preserving

directed-attention capacity were described earlier. One could hardly have wished for a more striking example of the basic ideas of ART.

In addition, our results suggest an intriguing hypothesis for future research. It appears that asking may be partially mediating the relation between spirituality and effective functioning. All three variables were positively related to each other (Tables 3 and 4), and when spirituality and asking were included together as predictors of effective functioning in the final regression model, the partial correlation for asking hardly changed (down from .55 in Table 4 to .53 in Table 5) whereas the partial correlation for spirituality was substantially reduced (from .39 to .25). Such a causal chain makes sense. Although motivations may have direct links to outcomes, they should also work through the intermediary of relevant actions. Our suggestion is based on post hoc perusal of results, and it would be worthwhile to have a confirmatory test.

Nonfindings can also be insightful. An intriguing example is the failure of lack of focus as a prior problem to predict inability to focus as an outcome. Of course, it is possible that the variables are simply unrelated. However, each had acceptable reliability and both would appear to be getting at the same construct. On theoretical grounds, one would certainly expect that if visiting a house of worship had no effect, then there would be a strong positive correlation between problems with focus before and after visiting. On empirical grounds, one might also have expected a positive correlation because both scales contain an item dealing with distraction (although otherwise they seem to be fairly distinct in terms of item content). The nonrelation seems to indicate that visiting a house of worship neutralizes the predictive power of prior lack of focus. A subtle benefit, perhaps, but a useful one nonetheless. The same conclusion would seem appropriate for mental fatigue as a problem because it was also unrelated to inability to focus as an outcome.

In contrast, positive affect generally predicted positive outcomes. Although it is tempting to draw a distinction between attention-related and mood-related effects in restorative experiences, we are reluctant to do so based on the results for positive affect. First, although the instructions for items dealing with problems-moods asked the respondent to consider the past few months, we cannot be sure whether the scale reflects a more transient state, such as a mood or a more stable personality dimension. Second, examination of item content suggests a fair amount of overlap between the positive affect scale and the three outcome scales that it predicted. For example, the affect scale contained an item dealing directly with satisfaction (obviously similar to the corresponding outcome item), an item about easily reaching conclusions (similar to "efficient" in the outcome scale for effective functioning), and an item about being in paradise

(similar to “rested,” “patient,” and “relaxed” in the outcome scale for peace). Thus, the relations between positive affect and the outcome variables are not particularly surprising and we are disinclined to base any weighty theoretical conclusions on them.

A final contrast between the present study and the monastery study is that being away was the most effective predictor of peace in our study whereas beauty held that distinction in the earlier study. However, it is noteworthy that being away was the most effective predictor of peace for first-time monastery visitors. As Ouellette et al. (2005) point out, perhaps the appreciation and importance of beauty occurs only with increased experience in a spiritual setting.

Limitations and Future Research

This study had several limitations. First, it was based on retrospective self-report, which can detract from the validity of findings. On the other hand, it is clear from the extensive comments provided by many respondents that they were deeply engaged in the task and generally eager to share their feelings regarding their house-of-worship experiences.⁵ Second, only one kind of measure, self-report, was used. This raises the possibility of monomethod bias or halo effects producing weak positive relations apart from any substantive relations among the constructs measured. Although we tried to avoid false positives by setting a stringent alpha level for tests of inference, many of our relations were nonetheless small in magnitude and could have been partly the result of such biases. We can say that our effect sizes were comparable with those of the monastery study. Still, confirmation with different measurement methods would be desirable. In a similar vein, our factor analyses explained small amounts of variances and some of the factors had weak internal consistency. All these methodological weaknesses suggest caution in interpreting results.

There were also sampling issues. This study and the monastery study were based on nonrandom samples from very different populations (predominantly female Midwestern university undergraduates and older adult male retreat participants). There are many important differences between students early in their college careers and older adults from many walks of life. The relevance of activities such as ritual and asking may differ for the two age groups. Our college students apparently felt that asking was much more salient in a spiritual context than was ritual. Although there is no basis for direct comparison, it would not be surprising if the relative salience of the two activities differed for older people. A related issue is that we had no comparison groups. Thus, we

have no basis for concluding that college students who attend houses of worship differ from any other population in motives, activities, or outcomes. All we can conclude is that their stated motivations, activities, and outcomes appear to fit reasonably well into an attention-restoration framework, a modest conclusion at best. The bottom line is that generalization of results beyond a restricted population is not easy to gauge. However, as noted earlier, findings common to both this study and the monastery study presumably have a greater likelihood of external validity.

Some differences in findings between the two studies might reflect, at least in part, differences in context and method. For example, an important contrast involves the amount of preparation and planning necessary for a retreat versus a visit to a house of worship. Both the effort involved in getting to the setting and the age difference in the samples may account for why beauty was a more effective predictor in the monastery study than in the current study. Yet another contrast concerns method. The monastery study used a 5-point step scale ranging from *not at all* to *very much*, whereas the current study used a 7-point scale ranging from *strongly agree* to *strongly disagree* for most blocks of items. The difference in the number of steps is not a serious problem. Translation of means is easily accomplished, and the difference in number of steps should have little effect on correlation measures. However, we cannot know what effect the difference in descriptions of the steps may have had.

The use of factor analysis to support a theoretical view of the world might also be considered a limitation. It is an old truism that what goes into a factor analysis determines what comes out. If the items in our survey dealt exclusively with ART, then finding factors that were compatible with ART would be trivial. However, that was not the case. As noted in the introduction, we included motivation items dealing with guilt, habit, obligation, and seeking a sense of community. In general, the activities items had little obvious connection with ART. The personal-problems items ranged far beyond ART and included such topics as health, financial problems, and the world situation. On the other hand, the outcome items were inspired by the theory, and it is fair to say that the entire survey was slanted toward the theory because of what we wanted to study. Here again, caution in interpretation seems wise and conceptual replication by future research is indicated.

A striking difference between the monastery study and the present study is that the former assessed reactions to a specific shared environmental setting, whereas the latter was based on a distillation of all previous experiences with a generic category of settings. Although it might be tempting to discount results based on reactions to generic setting categories, such a view is probably short-sighted. Cognitive map theory postulates that generic setting categories are based

on specific experiences and provide a useful guide to effective functioning. An example from Kaplan and Kaplan (1982, p. 49) is telling. If you know that you are in a big amorphous building, it may be difficult to figure out what to do or how to find your way around. On the other hand, if you can pick up enough cues to recognize that you are in a hospital, you can draw on your generic knowledge of the setting category to guide your decisions about appropriate behavior and way-finding. From this perspective, it seems clear that the study of generic setting categories such as houses of worship can make an important contribution to the environment-behavior field.

Results from this study provide some guidelines for future research on restorative experiences in spiritual settings. As noted, we are now in a position to postulate some causal sequences, such as partial mediation of the relation between spirituality and effective functioning via asking, that could be investigated prospectively. A second potential line of research concerns age-related changes in the salience of restorative activities and motives in spiritual settings. For example, does the importance of asking decline with age? A third line of research clearly indicated by the preceding discussion is to compare the restorative benefits of spiritual settings across different participant populations and to compare the restorative benefits of spiritual settings with those of other types of restorative settings. A fourth promising area for study is whether specific design features, such as the visual richness of buildings (see Herzog & Shier, 2000), affect the restorative benefits associated with spiritual settings.

Despite the current study's limitations and methodological differences from the monastery study, the results highlight themes that have concerned humans throughout history: the need for respite and for getting away from life's trials and tribulations, the concern for transcendence, spiritual development, and aligning oneself with an unseen order, the quest for internal peace, and for help in coping with largely uncontrollable difficulties. Environmental settings can either aid or obstruct humans as they struggle with these concerns. The results of this study add to the growing body of evidence that restorative experiences in spiritual settings provide a common means for dealing with such concerns.

Notes

1. A broad search of document databases in psychology, sociology, and "general search" was conducted for references with the keyword combinations of "motivation" (or "reasons") and "church attendance." The yield was slight. In the voluminous literature on extrinsic-intrinsic religiosity, the extrinsic-social factor correlates with church attendance (Kirkpatrick & Hood, 1990), suggesting that some people

attend church as a means toward social gain. Not including demographic predictors, motivating factors suggested by other studies include parental encouragement (Krause & Ellison, 2007), intensity of belief (Sawkins, Seaman, & Williams, 1997), "psychosocial benefits" (Pargament, Steele, & Tyler, 1979), religious services, and the desire to relate to God (Lasker, 1971). Although some of the themes in these findings were echoed in our survey items, our main inspiration for items was the survey used in the monastery study and our own intuitions.

2. The complete survey is available from the first author.
3. All factor analyses used principal-axis factoring and a varimax rotation. Pure-loading items were defined as those with a factor loading of at least $|\cdot 40|$ on only one factor.
4. For all regression analyses reported in this article, alpha was set to $\cdot 001$ to guard against Type I errors of inference.
5. A few respondents tried to proselytize the researchers by devices such as detailed maps to their houses of worship and warm invitations to attend.

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