

THE MUSEUM AS A RESTORATIVE ENVIRONMENT

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ABSTRACT: Museums seem to be ideal environments for a restorative experience. A collection of objects both aesthetic and fascinating would seem appropriate for aiding the recovery of directed attention, and perhaps for reflection as well. Yet, according to anecdotal reports, museums often seem tedious and tiring. The authors explore this apparent paradox both theoretically, in the context of attention restoration theory, and empirically. Study 1, a content analysis of material generated by focus groups for a Getty Foundation study, yielded categories remarkably consistent with the theorized components. For Study 2, 124 museum visitors completed surveys on restorative aspects of their visit. As with Study 1, results point to the restorative potential of the museum, but suggest that those who are already comfortable in museums are more likely to receive this benefit.

The function of a museum is often cast in educational terms. The museum brings history, culture, and enlightenment. If anecdotal evidence can be trusted, from the perspective of certain

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museum staff members, education may be not only the primary purpose, but the only legitimate purpose of a museum visit. On the other hand, there are theoretical grounds for suggesting that a quite different need may be met by the museum experience. The museum may, in addition to its educational function, play a restorative role. It may, in other words, create a sense of peace and calm that permits people to recover their cognitive and emotional effectiveness. If support could be found for this intriguing possibility, it could lead to an important change in the way museums are viewed.

In exploring this possibility, we have followed a dual strategy, theoretical and empirical. First, we present a theoretical analysis of the restorative environment and, in particular, of how the capacity to focus one's attention can be an essential link in understanding the concept. Then we examine the art museum in light of this theoretical analysis. Based on this theoretical introduction, two studies using different procedures and set in different contexts are discussed to examine whether museums can serve a restorative function and, if so, under what circumstances.

THEORETICAL FRAMEWORK

The hypothesis that a museum plays a restorative role is based on an analysis in terms of attention restoration theory (R. Kaplan & Kaplan, 1989). According to this theory, prolonged mental effort leads to directed attention fatigue (DAF). Although not identified by that name, the experience of DAF is a familiar one. Any time one has worked intensely on a project and subsequently finds oneself in a state of mental exhaustion, one has experienced DAF. The typical state of mind of students at the end of a semester is familiar example. It should be noted that even a thoroughly enjoyable project, if sufficiently intense and sufficiently prolonged, is likely to lead to DAF. Although stressful circumstances can lead to DAF, stress is by no means a necessary antecedent.

Many projects will lead to only mild cases of DAF. In its more severe manifestations, however, its impact on the quality of life

and the capacity to function can be disastrous. Symptoms can include distractibility, impatience, irritability, and an inclination to take unnecessary risks. In addition there is typically an impaired capacity to reason and to plan. Thus the overall picture associated with DAF is one of reduced competence.

To recover from DAF, in terms of attention restoration theory, it is necessary to rest directed attention. Although sleep helps in this process, the magnitude of DAF often exceeds what sleep can correct. Under such circumstances, it is essential to rest directed attention while one is awake as well. Such a wakeful but at the same time restful state is most likely to occur in the context of what we have called a restorative environment (S. Kaplan & Talbot, 1983). This concept covers a wide range of settings from wilderness to chamber music. All such environments, however, share certain common properties. Based on our previous research, we have identified four factors which together characterize this special type of environment.

The first of these factors, Being Away, requires that the environment be different from the usual, away from one's everyday cares and concerns. An environment that is away is a distinct and separate environment.

The second factor, Extent, involves a pattern of stimulation that is extended in time and space, that is perceived as an environment that one can enter and spend time in. This environment, then, must be large enough, at least conceptually, that one can move around in it and explore. It must also be coherent enough that it constitutes a larger whole rather than many unrelated pieces.

Fascination, the third factor, involves the qualities of an environment that one finds inherently interesting and engaging. Fascination constitutes the primary mechanism for resting directed attention in this theory. It entails a different kind of attention that, unlike directed attention, does not require mental effort and thereby permits direction to rest and recover.

The final factor, Compatibility, refers to the degree to which the environment supports what one intends to do, or, in other words, one's purposes (S. Kaplan, 1983). Being distracted and having to pay attention to something that seems peripheral to

one's purposes are examples of incompatibilities. Compatibility is fostered both by having purposes appropriate to an environment and having in the environment what one needs to meet one's purposes.

None of these properties is absolute; each can vary across a wide range, and a given environment can be stronger in some than in others. In general, the more the environment possesses these properties, and the more strongly they are represented, the more restorative the environment will be. Another factor that influences the depth of a restorative experience is the presence of an aesthetic component in the environment (S. Kaplan, *in press*). The depth of a restorative experience, in turn, is important not only because it leads to more rapid recovery from DAF. It produces a qualitative difference as well. With a more intense restorative experience, an individual is likely not only to recover directed attention, but to engage in reflection as well. Reflection constitutes a kind of "internal housekeeping" that allows one to function with less demand on directed attention in the future. Thus a restorative experience that also promotes reflection is particularly beneficial to the psychological health of the individual.

Attention restoration theory is admittedly a rather elaborate theory. It concerns the operation of a complex, far-reaching, and little-known cognitive control system. It is reasonable to ask whether such complexity is justified; could one not, for example, simply posit a "fun-seeking" motive to explain what we are calling restorative experiences? Such an interpretation, however, would be inappropriate. There are activities that people consider fun that are not restorative. There are also activities that are restorative that are not necessarily enjoyed.

There are two bases for suggesting that fun activities need not be restorative. First, there are activities that people in search of fun pursue that do not fit the four-part description of a restorative activity. Second, there is empirical support for this distinction. In a study of psychological functioning in AIDS caregivers, Canin (1991) examined the leisure activities of the study participants. She found that, whereas hiking or biking in nature were associated with reduced fatigue and burnout,

watching TV had the opposite effect. Other popular but restoratively ineffective activities in this study included drinking at parties and shopping. The central issue in whether or not an act is restorative is its ultimate effect on competence, not its enjoyment value.

On theoretical grounds, one would expect some activities to be restorative without being enjoyed, but so far the evidence in support of this hypothesis is anecdotal. Competence enhancement has been reported in two instances where enjoyment was absent. A recently bereaved individual reported that her walks in the woods were accompanied by sadness but indicated that they turned out to have been restorative nonetheless. In a second instance, a colleague with a progressively debilitating illness found that the help required from others to participate in a fishing trip made the experience frustrating and unpleasant. The discovery of markedly enhanced competence upon returning to work quite understandably came as a total surprise.

Given the centrality of competence in the theory, it seems clear that evidence establishing an empirical link between restorative activities and competence would be pivotal. Four studies bear directly on this issue. Two of these are reported by Hartig, Mang, and Evans (1991). Wilderness hikers returning from a trip showed superior performance on a proofreading task relative to their pretrip levels, whereas control participants' performance actually declined. These same authors also report a study comparing recovery from a taxing mental task in three different settings—a comfortable waiting room, an urban walk, and a nature walk. The latter setting scored highest on a Perceived Restoration Scale and led to the highest proofreading scores. (Proofreading was selected as a dependent variable in these studies because of the large demands it makes on directed attention.)

A clinical study of recovering cancer patients also supported the link between the restorative experience and competence (Cimprich, 1990). The experimental group, all of whom signed a contract agreeing to participate in three restorative activities a week, gradually recovered their directed attention as indicated by scores on the Symbol-digit test, by their rapid return to work,

and by their interest in initiating new projects. The control group showed no comparable improvement. And finally, Gilker (1992) studied the restorative power of a view from a dormitory window. Undergraduates with more nature in their view also scored higher on the Symbol-digit test. Taken together these studies suggest that the link between the restorative experience and competence is strong enough to cast doubt on fun-seeking behavior as an alternative interpretation.

APPLICATION OF THEORETICAL FRAMEWORK TO MUSEUM CONTEXT

Attention restoration theory was developed in the context of natural environments and, in particular, gardening (R. Kaplan, 1973) and wilderness outings (S. Kaplan & Talbot, 1983), but it is not intrinsically limited to these settings. Rather it is intended to be a fairly general theory of restorative experiences. Its application to a museum setting suggests some interesting possibilities.

An art museum by definition has Extent. It is not a single work of art, briefly observed, but an entire collection of such works, and typically is housed in a setting that is itself substantial. For most people, the Being Away component is also readily satisfied. The setting and its treasures are simply not the daily fare of most museum visitors.

The latter two concepts, however, present a bit more of a challenge. On the face of it, an art museum's collection might be expected to offer much Fascination. It holds the highly selected products of one or more civilizations. It is unlikely that the artists themselves are insensitive to fascination in their creative endeavors. Presumably they intend to create objects that will hold one's interest rather than be boring. The very topics chosen, such as landscapes, food, nudes, important or famous people, and religious and mythological figures, suggest a sensitivity to what people find fascinating. For many visitors, the holdings of a museum must indeed be fascinating. But as James (1892/1962) pointed out, some fascination must be learned. Individuals unfamiliar with the cultural setting of a work of art

might fail to experience the Fascination that is likely to be an important part of a knowledgeable museum visitor's experience.

Compatibility might seem comparatively simple to achieve. Supposedly, people visit a museum to experience and learn about the great art the museum is intended to provide. Some visitors, particularly inexperienced ones, however, may come with considerably less well-formulated purposes than that. Furthermore, even for those who have clear intentions, many museums unintentionally erect substantial hurdles. The building layout may be complex, and maps (or floor plans) difficult to decipher. Being lost in a museum most likely does not support the purposes of the typical visitor.

Thus, at least in principle, a museum could serve as a restorative environment. This is, of course, no more than a theoretical supposition, but it does suggest several interesting and researchable issues:

1. Do museums serve a restorative function?
2. If so, for whom and when? Are there those for whom a restorative experience is a highly unlikely outcome of a museum visit?
3. What gets in the way of achieving a restorative experience for some visitors? Are there adjustments that museums can make to alter this state of affairs?

An initial approximation to gaining an understanding of these issues is based on a content analysis of comments generated by focus groups regarding reactions to a museum experience. The purpose of this portion of the research was twofold. We wished to determine whether, in talking about the museum experience in general, any of the themes theoretically related to the restorative concept would be raised. Second, because the data available to us included both experienced museum visitors and a nonvisitor subsample, it provided an opportunity to determine whether restorative aspects of the experience were differentially available as a function of experience.

A second approach to examining these questions used a questionnaire based on the results of the content analysis as well as on theoretical considerations. Its purpose was both as

a check on the results of the first study and as an effort to overcome some of the limitations inherent in the purely open-ended format for that study.

STUDY 1

Insights (Walsh, 1991) is a report of a major study of museum visitors' attitudes and expectations carried out for the Getty Center for Education in the Arts and the J. Paul Getty Museum. The study involved a pair of focus groups (with 8-12 participants), each meeting twice, at museums in each of 11 cities. One group in each case consisted of visitors (not further specified). Members of the other group were nonvisitors, obtained by telephone solicitation, with the restriction that family income had to be at least \$25,000 and the person had to have at least a high school education. The nonvisitors had never been to an art museum, at least not since their childhood.

Each focus group took part in three activities: a preliminary focus group to discuss their expectations, a visit to the museum, with instructions to look at particular galleries and to keep a diary, and a second focus group to discuss their experiences. The written report of this study (Walsh, 1991) provides numerous verbatim quotations from both the visitor and nonvisitor samples. Study 1 is based on a content analysis of quotations from the postvisit focus group sessions.

To categorize this extensive collection of open-ended data, a bottom-up procedure was employed. Repeated reading of the material led to the formation of categories; once these categories had been identified, the entire document was reviewed with them in mind. Finally, the categories were organized into a theoretically meaningful organizational structure. The entire collection was then recategorized to assure within-coder reliability.

RESULTS

Table 1 presents the frequencies of the different categories, divided into those representing description of the environment

TABLE 1
Frequency of Responses by Categories

	<i>Visitor</i>	<i>Nonvisitor</i>	<i>Total</i>
<i>Description of the environment</i>			
Being Away	12	7	19
Extent	9	6	15
Fascination			
Excitement, adventure	8	15	23
Cognitive involvement	13	4	17
Compatibility			
Orientation	7	20	27
Content comprehension	27	29	56
<i>Outcomes</i>			
Calm/peaceful, positive state	10	2	12
Reflection	6	1	7

and those reflecting restorative outcomes. The first section is organized into four components following the attention restoration framework.

Being Away consists of two categories reflecting “distraction from routine” and “escape from troubles/everyday.”

Extent, referring to an environment extended in time and space, was also represented by two categories, namely, a relatively literal sense of an extended environment (“in a different world”) and a more conceptual or historical sense (“feeling like you’re there [the time and place of the art],” “taken back in time”).

The third heading, Fascination, was represented by a rich array of categories. Grouped together here are “excitement,” “adventure,” “interest,” “awe and wonder” and “emotional involvement” that all reflect a relatively straightforward sense of fascination. By contrast, the “cognitive involvement” category represents a more conceptual form of fascination. This occurred in two forms, “being stimulated to consider thought-provoking questions” and “being fascinated by a sense of history and/or culture.” Several study participants seemed to be struck by the continuity found throughout cultures and historic periods: “It was fascinating to explore the different cultures, but most of the cultures were very similar in nature.” Such comparisons imply active and self-directed cognitive activity.

The Compatibility of the environment is also divided into two components, each reflecting several categories. The first, involving orientation, included expressions of "feeling lost," "concerns about comfort," and suggestions for the "flow or organization" of the museum layout. The latter component relates to ways to enhance comprehension of the content, including desire for "help understanding art" and "needing explanation." The desire for greater understanding of the art itself, particularly the meaning of the painting, was the need expressed most often in the report. Participants also wanted to understand the techniques used, as well as the period and culture of the artist.

A number of comments made by study participants could not be classified in terms of the characterization of the museum environment. Many of these appeared to be descriptions of what happened to their own psychological state as a result of the museum experience. Three of the categories identified under the outcomes heading, "positive state," "calm/peaceful" and "re-energized" are grouped together here. "Reflection," also a possible outcome of a restorative experience, is perhaps the most striking category. Responses here ranged from gaining a new perspective on one's life to working out problems or "just thinking."

The categorization scheme included in Table 1 incorporated the vast majority of the comments. The few remaining comments dealt with educational and learning interests as well as some expressions about the presentation of the art or the building itself.

Although this form of analysis cannot provide a definitive picture, the results nonetheless present some interesting contrasts. The overall frequency of recorded comments for visitors and nonvisitors is not dramatically different; the pattern of responses between these two subsamples, however, reflects striking contrasts. Not surprising was the more frequent expression of concern about feeling lost and less comfortable on the part of nonvisitors—individuals who did not frequent museums at all or had not visited since childhood. More surprising, perhaps, is the small difference between the two groups with respect to desiring help with understanding the art.

The pattern of comments related to the Fascination aspect of the theory is also noteworthy. The visitors expressed only half

as many comments related to the excitement and adventure of the visit, whereas the nonvisitors had very few comments reflecting fascination at a more conceptual level.

Only 16% of the responses in the outcomes section were made by nonvisitors. This suggests that the museum environment may be more restorative for visitors than for nonvisitors. It is not unlikely that this difference is due to the fact that visitors experience less confusion and are more comfortable in the museum environment than nonvisitors.

DISCUSSION

Study 1 had two purposes. The first was to determine if any of the material raised in the focus groups concerning the experience of visiting a museum suggested the appropriateness of a restorative analysis. We were frankly surprised by these results. The fit of the restorative model to these open-ended comments, recorded in a study developed for a totally different purpose, was little less than remarkable. The vast majority of the recorded comments could be incorporated without strain into this framework.

The second purpose of Study 1 was to examine visitor/nonvisitor differences with respect to restorative aspects of their experience. Here too the results were striking. The vast preponderance of the restorative outcome comments were made by visitors. The nonvisitors, by contrast, were high on "feeling lost" and showed very little restorative outcome. These findings suggest that restorative experiences in the museum context might be far more accessible to experienced individuals. It also provides grounds for suspecting that lack of Compatibility, and especially wayfinding concerns, might play a role in the relative absence of this experience among nonvisitors.

STUDY 2

The content analysis of the Getty Foundation report suggested a number of qualities of the art museum experience that

could make it restorative. It was also helpful in providing a vocabulary of how museum visitors describe the restorative aspects of their visit. In designing a follow-up study, we wanted to avoid the limitations inherent in a purely open-ended study. We also wanted to take a closer look at some of the Compatibility factors that make a restorative experience more or less available. In the second study, we thus used a survey format and included only individuals who chose to come for a museum visit.

METHODS

This survey was part of a larger, ongoing research effort, carried out at the Toledo Museum of Art, one of the 11 museums included in the Getty study. Museum visitors were approached at the end of their visit and asked to fill out a brief questionnaire. A part of the survey dealt with the potential restorative aspects and outcomes of a museum visit.

The survey included a series of questions that corresponded to properties of a restorative experience (Being Away, Extent, Fascination, Compatibility). Another series of items assessed outcome variables: their sense of well-being, and how relaxed, rested, and preoccupied they felt. Responses to these items all used a 5-point rating scale. Respondents also provided ratings of their level of comfort, familiarity, and experience with art and museums as well as some demographic information. Finally, there were several items asking for specific reactions to the museum floor plan they had used during their visit.

PARTICIPANTS

Of the 124 respondents, 48% were women, 33% men (19% either did not indicate gender or marked both). Most of the visitors (85%) came with someone else—family, friends, or for a class, and spent, on the average, 2 hours in the museum. The four most commonly cited reasons for visiting were “to wander around and enjoy the collection,” “to see what the museum has to offer,” “to see a specific gallery,” and “to see what’s new since my last visit.”

RESULTS: CATEGORIES OF RESTORATIVE EXPERIENCE

The 23 restorative-related items were subjected to nonmetric factor analysis and a clustering technique (R. Kaplan & Kaplan, 1989). Of the four categories that emerged from these procedures (see Table 2), three characterize specific, more negative reactions—feeling Tired (both mentally and physically), feeling Harried and distracted, and finding oneself Preoccupied with other concerns.

The fourth and largest category, which we called Restored, included 13 items reflecting each of the four components of the theoretical framework: Being Away (e.g., “Seeing the art carried my mind in many directions”), Extent (e.g., “It was like being in a whole different world”), Fascination (e.g., “There were many fascinating things to see”), and Compatibility (e.g., “It felt right; I was doing just what I wanted to be doing”). The Restored category also included some items that characterize outcomes, such as feeling “refreshed, restored,” “thoughtful, reflective,” and “calm, relaxed.”

The four categories support the notion that a restorative experience is multifaceted. Being tired, as opposed to harried, is perceived as a distinct and separate state of mind, and neither of these represents the opposite end of a continuum from being restored. Rather, all four categories tap independent dimensions, feelings that can coexist. (The intercorrelations among all four of these categories ranged from $-.10$ to $.27$, with the exception of $r = .35$ between Preoccupied with other concerns and Harried.) At the same time, the fact that the Restored category combined the four components of the theoretical framework, as well as restorative outcomes, provides corroboration for the interrelatedness of these conditions and the need to have many of them available to achieve a restorative state.

RESULTS: FACTORS RELATED TO THE RESTORATIVE QUALITY OF THE MUSEUM

The mean scores (Table 2) for these categories indicate that in general, the visitors felt they had a fairly restorative experience and left the museum feeling only a little tired, harried, and

TABLE 2
Empirically Derived Categories of Restorative Experience

<p><i>Tired</i></p> <p>How you feel: physically tired mentally tired</p> <p>It felt exhausting, as if it would never end.</p>	<p>Mean 1.79</p>
<p><i>Harried</i></p> <p>How you feel: confused distracted rushed, harried</p>	<p>Mean 1.38</p>
<p><i>Outside concerns</i></p> <p>I couldn't stop thinking about my everyday problems and concerns. There wasn't much here to look at. I would rather have been somewhere else.</p>	<p>Mean 1.28</p>
<p><i>Restored</i></p> <p>How you feel: Refreshed, restored Calm, relaxed Thoughtful, reflective Tranquil, content Alert, focused</p> <p>I saw what I wanted to see. I was involved, engaged, absorbed. It was like being in a whole different world. There were many fascinating things to see. Seeing the art carried my mind in many directions. There is so much to see; I would like to explore for days. It was really different from the ordinary and the everyday. It felt right; I was doing just what I wanted to be doing.</p>	<p>Mean 4.00</p>

preoccupied. Comparisons of visitors in terms of background variables revealed few significant differences with respect to these four empirically derived categories. Those who came with a group or class left more tired, and those whose museum visit was 3 hours or more scored higher on Restored.

It would be reasonable to expect that one's familiarity with the particular museum and personal knowledge about art would play important roles in how restorative such a visit was. Surprisingly, neither of these variables was a significant predictor. On the other hand, these data clearly indicate that issues as fundamental as feeling comfortable in a setting and being able to find one's way around can dramatically impact the quality of one's visit. Those who reported feeling more comfortable in art muse-

ums in general left the museum more restored. The visitors who reported a higher level of confusion and of feeling lost scored significantly lower on Restored and higher on Harried and Tired than the others.

When responding directly to questions about their use of the museum floor plan, visitors who found the maps confusing were more aware of outside concerns and less restored. Visitors who reported understanding the plan well enough to tell someone else where to locate it, left the museum more restored and less harried than those who did not.

DISCUSSION

It must be emphasized that these results do not permit definitive conclusions concerning the restorative potential of museums because there were no measures of DAF before and after the museum visit. Nonetheless these findings are highly suggestive. The items included in the Restored category mirror the elements that constitute that kind of environment—Being Away, Extent, Fascination, and Compatibility—providing substantial construct validation for the restorative concept. The art museum can be a distinctive, substantial, interesting, and friendly place to visit. However, although a restorative experience may well be possible, it is by no means assured.

The findings suggest two factors that play a major role in the restorative potential of the museum setting—what we have called comfort with museums and ease of wayfinding. Comfort in this context refers to how at ease one is within that kind of setting, to knowing what kinds of behavior are appropriate and what one is supposed to do in a museum, rather than to familiarity with the specific museum. It has to do with being able to figure out what one wants to do and how to carry out those intentions.

As it is characterized by these results, comfort relates closely to the compatibility notion: A compatible setting is one in which one's purposes and inclinations fit with what the environment affords (S. Kaplan, 1983). For most people, going to an art museum is purposive; it is an activity one has decided or chosen to do. Thus comfort has less to do with how much one feels one

knows about art than it does with being able to accomplish one's purposes, whatever they may be, within that setting.

Obviously, visitors come with different purposes. The likelihood of their visit being restorative depends on two considerations. First, one's purposes need to be commensurate with what one can do and is interested in doing. Second, the environment must support the visitor's purposes. So, the data suggest that people who were able to find what they came to see left more restored; those who thought they could show others how to find things in the museum left feeling less confused and harried.

The purposes of the experienced museum visitor may include exploring the nuances of a painting, enjoying favorite artists or styles, or just wandering through the galleries. Museums have done an excellent job of meeting the purposes of this kind of visitor. In the Getty Report analysis, most of the comments about the restorative qualities of the setting came from the more experienced visitor; cognitive involvement was rarely reported by novices. Likewise, in this study, those who felt more comfortable in the museum and who chose to spend more time there tended to have a more restorative experience.

But what of the novice or first-time visitor? These people, who may not yet be convinced they need or want an art museum experience, are far more likely to feel out of place and awkward in museums. In fact, many such people probably were not even represented in this survey because they rarely go to museums. It would be reasonable to assume that many of these visitors come with less well-defined purposes. Some of them may have very little imagery of the kinds of purposes that are appropriate to the setting and within their competence. And no matter what their other purposes, these visitors' concerns with feeling lost and confused may well demand much of their physical and mental energy.

CONCLUSION

The complementarity of these two studies is remarkable. They both strongly suggest that serving as a restorative envi-

ronment is a nontrivial role that a museum plays for its visitors. The first study, which systematically sampled individuals who do not ordinarily attend museums, leads one to conclude that the restorative function is far less accessible to this group. The second study suggests that experienced visitors who are comfortable in museums in general are particularly likely to find the museum experience restorative. And both studies indicate that problems of orientation and wayfinding undermine or preclude a restorative experience.

Interestingly, the factors that seem crucial here are not the ones traditionally emphasized as the focus for museums, such as how much one knows about art or learns on the visit, how much one likes the art, nor how edifying an experience one had there. Although these, no doubt, play a role in the quality of one's museum visit, in this study, the more mundane issues of feeling comfortable and being able to find one's way around the museum figured more centrally in how restorative people found that environment. One might conjecture that only after one has managed the comfort and wayfinding concerns of the museum is it possible to receive full benefit from the aesthetic wonders that it holds.

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