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Understanding the Long-Term Impacts of Museum Experiences

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The value and importance of understanding the long-term impact of museums on visitors should not be underestimated. Such information enables museums to understand how to improve visitor experiences in museums, as well as the subsequent impact of those experiences, in a multiplicity of dimensions. These dimensions may include the enjoyment visitors feel, the kinds of things they learn, or the degree to which they develop understandings or appreciations of the messages museums communicate. Understanding how these dimensions of impact sustain, emerge, change, and diminish over time provides value information about how to improve museum experiences for visitors. The nature and quality of learning and enjoyment derived from a museum visit may shift significantly over time and the true impact from the museum visit may not actually occur during the visit, but afterwards, through subsequent experiences. If these experiences were caused or motivated by a museum visit, the true learning outcomes would only be fairly assessed if that follow-up by the museum visitor is taken into account. The long-term impact of museums should be considered not only at the level of the visitor but also at the level of the communities museums serve. Thus, understanding the long-term impact of museums enables a better understanding of how to serve and enrich communities, of which museums are a part.

This chapter explores what is already known about museums and their long-term impact on visitors, the complexities and challenges inherent in trying to study and understand long-term impacts, future research and

methodological approaches that we can use to effectively assess the long-term impacts of museum experiences, and the implications of these efforts for practice.

THE CONCEPT OF IMPACT

Museums are visited for a multitude of reasons: for leisure and enjoyment, to spend quality time with family/children/friends, to experience something unusual, to take part in a culturally enriching activity, to “learn new things,” and many more reasons, most of which can be summarized under “self-fulfillment.”¹ Consequently, the impacts of museum visits, be they long or short term, reflect the visitors’ agendas and span a broad range of experiences, from a life-altering experience to feeling slightly amused for a limited period of time. In addition, museums and similar out-of-school learning environments are used extensively for a variety of purposes by teachers who bring their students on field trips (Anderson, Kisiel, & Storksdieck, 2006; Griffin, 2004) and there is increasing pressure to demonstrate the short- and long-term benefits of these experiences.

Research in the visitor studies field has often focused on “learning” as an important outcome of a museum visit. “Learning” has very often been conceptualized as a cognitive process of reaffirming what is known, activating latent knowledge, or creating new knowledge at various levels of complexity. In addition, knowledge can be gained at different levels of complexity, from the simple awareness of things to declarative knowledge to highly complex conceptual understanding. Most museum scholars would contend that learning in and from a museum involves visitors who construct their own meaning and understanding—meaning and understanding that varies greatly depending upon the background, experience, and knowledge a visitor brings to the experience, the visitor’s social group, and the sociocultural and physical context of the institution itself (e.g., Falk & Dierking, 2000; Hein, 1998). In this perspective, learning is best conceptualized from the visitors’ perspectives and, if measured as long-term impact, needs to be based on and tied to the visitors’ overall museum experiences. When learning from and in museums is broadly defined and based on the visitors’ agendas, the subject of learning quickly expands well beyond the museum exhibits and programs, to include,

among others, learning about museums as places for lifelong learning and that museums are places to learn about oneself and the people who accompany the visitor. Additionally, much of the research on impact and learning has considered the individual (visitor) as the unit of analysis, yet changes that result from museum experiences can be examined on different (larger) scales. For example, several studies have investigated the impact of museum experiences on family groups (Borun, Chambers, & Cleghorn, 1996; Briseno, 2005; Ellenbogen, 2002) or even an entire community (Falk, Storksdieck, & Dierking, in press; Jones & Stein, 2004). Aside from “learning,” other outcomes that are relevant to museum visits are increased interest in a topic or subject, and subsequent higher motivation to learn about it, with resulting increase in attentiveness and exposure to subsequent reinforcing experiences. Given this complex set of potential museum visit outcomes, long-term impacts have to be conceptualized from the visitors’ as well as from the museums’ perspectives and need to be understood as broadly as the roles museums play in today’s lifelong learning societies.

WHAT WE ALREADY KNOW

There are but a handful of studies that have investigated long-term impact arising from experience in museum and museum-like settings, and most consider the longitudinal impact only over relatively short time frames—weeks and months after the visitor experience (see Anderson, 1999; Anderson, Lucas, Ginns, & Dierking, 2000; Adelman, Falk, & James, 2000; Storksdieck & Falk, 2003; Storksdieck, Ellenbogen, & Heimlich, 2005; Storksdieck, 2006). These studies generally find that cognitive and affective changes that can be measured directly after a visit tend to decline even over a period of a few months unless the museum experience itself is followed up by subsequent reinforcing experiences or assumes a personal relevance in the biography of the visitor. Still, most learning indicators, while declining from the immediate postvisit measurement to one conducted weeks or months later, tend to remain higher than prior to the visit. In addition, there are several studies that shed light on the impact of visitors’ memories of experience in such leisure-time settings (Anderson, 2003; Anderson & Piscitelli, 2002; Anderson, Piscitelli, Weier, Everett, & Tayler, 2002; Anderson & Shimizu,

2006; Bogner, 1998; Dettmann-Easler & Pease, 1999; Ellenbogen, Kessler, & Gillmartin, 2003; Falk & Dierking, 1990, 1992, 1997; Fivush, 1983; Hudson, 1983; McManus, 1993; Medved & Oatley, 2000; Medved, Cupchik, & Oatley, 2004; Stevenson, 1991; Wolins, Jensen, and Ulzheimer, 1992).

The various studies described above, and some others, indicate important aspects of long-term impacts from museum visits. These were summarized recently by a group of museum professionals as part of the *In Principle, In Practice* conference (Anderson et al., 2006). The following presents an expanded list of this summary:

- Museums and other free-choice learning institutions are clearly capable of fostering memorable and even transformative experiences (e.g., Falk & Dierking, 1997; Spock, 2000a, 2000b). These experiences determine the value assigned by visitors to their visit and, in the aggregate, determine the value of museums for the communities they serve.
- Factors such as prior knowledge and interest, visitor agenda, the sociocultural identity of the visitor, or prior experiences affect how visitors engage with the museum environment, learn from the museum visit, and encode memory (e.g., Anderson, 2003; Ellenbogen, 2002; Falk, 2006.)
- Various aspects of the museum environment, including the quality of exhibits and the opportunity to make personal connections, play a strong role in attracting and engaging visitors and making the memory more salient, memorable, inspiring, and personally satisfying for visitors (e.g., Falk & Storksdieck, 2005; McManus, 1993; Stevenson, 1991). What visitors remember after more than a year is mostly contextual (Falk & Dierking, 1997). Apparently, visitors forget the details of the content, but remember almost everything else in ways that are tied to their biographies or personal agendas for the visit.
- Memories of visits to museums, like all memories, are not stable—they change over time. Long-term memories from a museum experience are shaped not only by the nature of the visit itself but also by the visitor's subsequent memories and experiences (e.g., Anderson, 1999; Adelman, Falk, & James, 2000; Bielick & Karns, 1998; Ellenbogen, 2002, 2003; Falk, Scott, Dierking, Rennie, & Cohen Jones, 2004; Medved, 1998).

- Memory is influenced by visitors' satisfaction, interest, and motivation, much as these factors are shaped by visit memories themselves. Affect and memory seem to feed each other (e.g., Anderson, 2003; Falk & Dierking, 1997; Spock, 2000b; Medved & Oatley, 2000).
- People have varying abilities to recall and reflect on experiences. While museum visitors may report on what is important to them at the time, they may expand on their recollections and reflections much later (e.g., Ellenbogen, 2003; Falk, Scott, Dierking, Rennie, & Cohen Jones, 2004; McManus, 1993; Spock, in press).
- Salient aspects of an experience often remain latent until a later time (e.g., Falk, 1988; McManus, 1993; Wolins et al., 1992).
- There is evidence to suggest that identity is a key factor in how museum experiences are processed, encoded into memory, and recalled (e.g., Anderson, 2003; Ellenbogen, 2002, 2003; Falk, 2006; Medved et al., 2004).
- Attitude is generally not influenced by brief museum visits and museum-like experiences (Storksdieck, 2006). Even if short-term attitude measures indicate change, without subsequent reinforcing experiences and follow-up engagement, attitude scores tend to fall back to baseline (Adelman et al., 2000; Ellenbogen et al., 2003). However, attitude change can be sustained if the original experience lasted for at least a day, if not longer (Bogner, 1998; Dettmann-Easler & Pease, 1999).
- Long-term learning from museums may depend on the measure used and prior knowledge and interest of visitors (Falk & Storksdieck, 2003; Storksdieck & Falk, 2006). For some visitors, true learning might start only after the visit, while other may satisfy their quest for knowledge during the visit. Long-term learning seems to depend on initial learning, the type of learner, and the type of learning itself: shallow versus deep, conceptual versus declarative; long-term learning, at least for some visitors, might be connected to the ability to "digest" memories (McManus, 1993).
- Episodic memory is the explicit memory of certain events, such as the time, place, or emotions associated with the events (which affect how we memorize the event). Episodic memory is linked to semantic memory, the memory of facts and concepts. It seems that visitors create episodic memories with ease, recalling what they did and how

they felt during a museum visit (Stevenson, 1991); semantic memories, on the other hand, require subsequent reinforcing experiences or a strong personal connection to the topic or content to manifest themselves (Stevenson, 1991; Storksdieck & Falk, 2006; Falk, 2006). What people remember easily seems to depend to a large degree on the initial agenda of and enacted identity during their visit: Family-oriented visitors remember more strongly who they were with while visitors with an interest in the objects may better remember the specific event (Falk & Dierking, 1990; Falk, 2006).

- Sharing experiences with others through conversations (Stevenson, 1991) or by expressing emotions of the visits such as enjoyment, curiosity, frustration, and anger (Medved & Oatley, 2000) helps shape and enforce memories and therefore the subjective impact of a museum visit. Visitors tend to rehearse memories of their museum experiences when they discuss and relive their visits with others. Visits that spur conversations are thus more likely to create sustained memories.
- Affective school field-trip memories have a strong influence on future visitation (Anderson & Piscitelli, 2002; Falk & Dierking, 1990). Positive memories of museum school field-trip visits are linked to mild novelty and unusual experiences (Hudson, 1983; Wolins et al., 1992), connections to a child's sociocultural and personal life (Anderson, Lucas, & Ginns, 2003), and even classroom connections (Gilbert & Priest, 1997; Jensen, 1994; Wolins et al., 1992), an indication that embeddedness and connectedness—whether into the personal or some other sphere—is most important for children.
- Very long-term memories sustained over years or decades seem to focus on the social context of a visit (Anderson, 2003; Falk & Dierking, 1990). The sociocultural identity of a visitor seems largely to determine what visitors perceive during an experience and what they ultimately recall afterwards (Anderson, 2003). Overall, three factors seem important in shaping vivid long-term episodic and autobiographical memories of visitor experiences, namely, rehearsal of the memories, emotional affect associated with the source experience, and the degree to which their planned agendas were fulfilled or frustrated (Anderson & Shimizu, 2006).

ASSESSING AND INTERPRETING LONG-TERM IMPACT

As the discussion of long-term impact studies illustrated, researchers have employed a variety of methodological approaches to assess and interpret the long-term impact of museum experiences. Common to most studies of impact was the use of salient memories, which were recorded either through face-to-face or telephone interviews. While some researchers used prompts like souvenirs as symbolic representations of meaning and impact, or photographs of the museum, many employed sequenced questionnaires to trigger memories. Fewer researchers measured long-term impacts psychometrically, either as “learning” or as attitude, interest, and behavior change. While measuring the long-term outcomes of museum experiences certainly poses methodological challenges, there is no broad agreement in the field as to the most important, comprehensive, appropriate, or acceptable outcome measures that should be used and that—ultimately—would guide the use of methods and methodologies (Dierking et al., 2002). As it is with all social science research, the research questions (or objectives) dictate the research design of the study and the methods (tools) employed (Gay & Aireasian, 2006).

CHALLENGES AND ISSUES SURROUNDING ASSESSMENT AND INTERPRETING LONG-TERM IMPACT

The challenges in assessing the impact of visitors’ experiences from museums are numerous. The challenges are also a function of the complex nature of human experience, the tremendous variability in museum experiences visitor experience, and also inherent to the chosen research methodologies employed to gain an understanding of the impact. The question remains: How can we assess the rich, complex, and highly personal nature of museum experiences, and specifically learning from and in museums, in valid and reliable ways? Dierking et al. (2002) concluded that the honest response to this question is “with great difficulty!” There are a plethora of factors that are threats to our understanding of impact, some which are obvious and others perhaps not so obvious. Some important limitations and realizations to consider in the understanding of long-term impact are discussed below.

1. The Museum Experience Reconstructs with Subsequent Life Experience

As described above, museum experiences are reconstructed with subsequent life experience following the visit. It is important to realize that impact from any experience over time is not static and that memories change: They can fade into oblivion, they can be rehearsed and thus sustained, or they can be redirected and changed (Falk et al., 2004). The impact of a museum experience can develop further, change, or diminish as a function of subsequent life experience. Both aspects, the dynamic memory and the change in the degree of impact over time, present an interesting dilemma—what aspects of impact can and should be attributed to the immediate experience, and when is the ideal time to measure impact? What aspects of an individual's memories of a museum experience are a result of the museum experience and what are attributable to the subsequent life experiences? This dilemma is compounded by the fact that subsequent reinforcing experiences can count as museum visit outcomes, as follow-up experiences, increased interest and attentiveness, or information-seeking behavior (Storksdieck, 2006). It is equally true that certain kinds of subsequent life experiences will enhance the impact of museum visits (Storksdieck & Falk, 2003)—but to generalize about impact is complex given the vast diversity of life experience that visitors encounter following their visits, and moreover, the set of subsequent life experiences that will be meaningful to the visitors and result in connections back to the museum experience. Thus, probing impact is never only a measure of the source experience alone, but rather a function of the impact of the source experience dynamically constructed and reconstructed with many other prior and subsequent life experiences since that experience (Falk & Dierking, 2000, 2002).

2. Visitor Reality Versus Objective Reality

It is well established that memories of personally relevant experiences construct and reconstruct longitudinally, and what visitors report may not be an entirely accurate account of how the experience that produced the memories actually occurred (Bruner, 1994; Freeman, 1993; Neisser & Fivush, 1994). However, it is important to realize that self-reported

long-term memory ought to be considered the visitors' current reality of the recalled events, which may or may not be entirely representative of the original reality (Anderson & Shimizu, 2006; Schacter, 2001). Recent trends in memory research focusing on memory failure or distortion, such as false memory (e.g., Schacter, 2001), further justify the need to investigate visitors' long-term memories of experience at events like museums.

3. Visitors' Abilities to Reflect on Experience Vary

Visitors' varying abilities to articulate their experiences pose a challenge in assessing long-term impact. Some visitors are highly reflective, while others, such as children, may not be able to reflect on their experiences, or may have difficulties verbalizing or expressing them. Thus, great care must be taken to ensure that the research methods that record memories or self-reported long-term impact do not create undue bias and that they are sensitive to the nature of the visitor. Large quantitative studies may avoid some of the biases by averaging effects over a sizable sample. However, qualitative studies with small sample sizes need to critically assess respondents' reflective abilities.

4. Who Are Visitors When They Enter the Museum Experience?

The notion that new knowledge (as one measure of impact) develops out of prior knowledge (past experience) is a fundamental tenet of constructivist theory, and has been demonstrated in both formal and informal learning environments (e.g., Anderson, 1999; Falk & Storksdieck, 2005). Applied to the broader range of outcomes for museum visits, visitors' prior interests, values, attitudes, knowledge, and motivations need to be factored into the museum visit outcomes—all key factors that may influence how visitors derive meaning and enjoyment in a museum setting. Yet it is almost impossible to measure in any acceptable time frame validly and reliably all the various psychographic factors that could influence a museum visit outcome, though first attempts are being made to develop short, closed-ended instruments that capture many of these factors (see Heimlich et al., 2005).

5. Instantaneous Measures Only Tell Part of the Story of Impact

It is important to realize that the impact of visitors' experiences throughout and at the conclusion of a museum visit are not static, but rather that visitors continue to construct and reconstruct their assessment and their memories as these become intertwined with subsequent experience in the days, weeks, months, and even years following the visit (Falk et al., 2004, 2006). What visitors value, and are hence able to articulate at a given instant, is contextual, and time is an important contextual variable. Thus, instantaneous measures of impact tell part of the impact story, but not the whole story. On the other hand, any time period studied later will also only tell part of an evolving story. This makes it impossible to declare an ideal time frame for conducting longitudinal impact studies. (However, for the sake of comparability, it would be desirable if the research and evaluation community were to recommend particular time periods after the visit as sample periods for measuring long-term impact.)

Assessing the impact of museum experiences should ideally include multiple "snapshots" of the impact over time—from initial experience to point(s) in time proceeding from the experience. Capturing longitudinal data is in itself challenging given the problems associated with contacting visitors after their visits and the resulting mortality (the loss of research participants in a study) that can be associated with certain kinds of long-term assessments. Post-hoc design studies such as Anderson (2003) are a useful way around these challenges given the caveats about visitor reality versus objective reality discussed earlier.

6. Assessment Interventions Have an Impact Themselves

The very act of probing visitors about their experiences has the potential to change their experiences and the overall impact of these experiences (Palys, 1997). This is an age-old problem in the social sciences—if one wishes to truly understand the impact of a museum experience on visitors, one cannot entirely discount the impact of the assessment procedures that visitors participate in on their overall museum experiences. The fact that we ask opinions or get visitors to reflect on their experiences actually changes their experiences in ways that would have ordinarily not occurred if we had not asked them. Typically, evaluators attempt to make the as-

assessment interventions as naturalistic as possible. If the assessment methods have the characteristics of being casual, noncompulsory, engaging, rewarding, and not overly taxing for the visitor, then one might rightly argue that the experience was a natural and harmonious part of the museum experience. Some even argue that visitors, ultimately, follow their own agenda, and since interactions with museum evaluators are voluntary and thus become part of that agenda, they ought to have only a very limited impact on the museum experience.

7. Issues of Validity and Reliability—Probes and Interpretations

Face-to-face assessment methods, such as interviews, can be complicated by a plethora of factors that can influence visitors' responses about the impact of their experiences. Reactivity as social desirability or simple pleasing of the interviewer creates a need to interpret positive data carefully and to insert mechanisms that minimize reactivity in general. Perceived power inequality between interviewer and visitor can also have an impact on visitor responses. For example, young visitors may not feel entirely at ease in expressing their opinions to interviewers who are mostly older than they. It stands to reason that if visitor have needs or desires that do not include participation in assessments and evaluations, the usefulness and reliability of data about their experience will be compromised. While a variety of methods and procedures exist to minimize reactivity (listed in any good textbook on social science or education research), even experienced data collectors with well-designed and validated instruments will need to assess reactivity in the data analysis and interpretation phase of their research.

8. Sensitivity of Tools

The sensitivity of assessment tools and probes are critical for the quality of data that are generated, particularly in longitudinal studies. As previously discussed, there is a wide range of tools (instruments and protocols), methods (procedures), and methodologies (designs of research and evaluation studies) for gaining understandings of the impact of visitors' museum experiences. Sensitivity of tools, methods, and methodologies refers to the degree to which one can gain information, appreciate, discern, and hence

understand the impact of the experience on the visit. Certain types of questions aimed at probing impact are more revealing than others. For example, asking *Did you enjoy your visit to the gallery; yes/no?* certainly provides information, but the leading nature of the question and the limited choices, and thus the overall lack of sensitivity will severely limit the validity of the results. Asking questions such as *What was it about your visit to the gallery that you enjoyed most/least?* provides a deeper level of sensitivity, and hence more appreciation about the nature of the impact, and asking enjoyment on a rating scale or semantic differential provides the choices that allow visitors to more appropriately express their perspectives.

The challenges we discuss here are but some of many that confront researchers who are concerned with understanding long-term impact. The challenges are not insurmountable, but it is necessary to acknowledge and address them in the development of research studies and research approaches that address long-term impact. Ultimately, all good research designs (both qualitative and quantitative, short term or long term) aim to minimize the threats to validity and reliability—flagging these issues serves as a useful reminder to guide the development of methodologically sound studies.

FUTURE RESEARCH AND METHODOLOGICAL APPROACHES

Finding valid and reliable ways to assess the impact of museum experiences beyond the actual visit is a challenge: there are few studies that have investigated long-term impact of museum or other leisure experiences and hence the literature on the topic is thin; the methodological difficulties and potential threats to validity and reliability are real; and the community of interest at this time is relatively small. Despite these challenges, we feel that increasing our understanding of the impact of museum experiences and of museums themselves over longer time frames would add significant value and is thus worth the effort.

Invitational Gatherings

We believe the field would benefit at this juncture by drawing together researchers and practitioners in order to collaboratively resolve many of the key issues surrounding long-term investigations of museum visitor impact. Following are some of the definitions, range of interests, time

frames, influences, methodological challenges, and theoretical frameworks that such an invitational gathering might work on.

Broader Definitions

A broad, multidimensional definition of impact may help counter the inherent tradeoffs in setting goals and attempting to assess the impact of museum experiences. Whether consciously acknowledged or not, exhibitors, programmers, and researchers roughly make choices between (1) documenting clearly defined outcomes immediately or soon after the visitors' experiences, and, on the other hand, (2) documenting sustained or persistent, and sometimes evolving open or nondefined outcomes in several weeks or months after an experience, or even much later in the visitors' lives. Each of these contrasting approaches is suited to different needs. For example, near- or short-term assessment make utilitarian sense for both down-and-dirty formative and more carefully constructed summative evaluations. On the other hand, intermediate- or long-term assessments are better suited to questions of how memorable the experience and how profound the learning was, and how it was embedded into the visitor's biography. How we address these two approaches (or even mix them in our evaluation and research studies) has implications for our choices of learning and research goals and strategies, and even for the scope of the underlying ambitions of our programs and organizations.

Shared definitions enable better understanding within a community of practice. In order to communicate and agree on goals and research strategies, we need to address definitional questions such as: What are the functional meanings of "long-term impact" (categories?) versus "long-term outcomes" (individuals?)? Are "long-term impact," "long-term memories," "long-term learning," and "long-term meaning-making" functionally equivalent, and if not, how are they different? Would it be useful to adopt an expanded three-level nomenclature of "immediate assessments" (during visit), "intermediate-term assessments" (weeks or months later), and "long-term assessments" (years later)?

Larger Units of Analysis

Is there utility in expanding the unit of analysis beyond individuals, to include families, school classes, and communities? Assessing impact on

these larger units of analysis, collected at some distance from the museum experience, is complicated, but can add important information and alleviate some of the data bias that occurs through selective remembrance. Based as they are primarily on discrete memories of individuals, how can these individualized and dispersed recollections be aggregated for meaningful analysis (other than, of course, by interviewing groups)? Some interesting conclusions have been drawn from reports of widely shared iconic memories (e.g., visits to world fairs), but other research strategies may have to be developed to make sense of the long-term impact of the plain-vanilla group museum visit. For example, does the typical school group visit share enough common and memorable elements that interesting questions of long-range impact can be studied? Do the recollections of family vacation trips to historic sites and national parks hold promise for useful analysis? Do visits to museums plant enough common, long-term memories that can be analyzed to get a handle on the broader impact of museums in the community beyond evidence of individual outcomes?

Longer Time Frames

Studies that utilized intermediate-term assessments (time frames of several weeks or months), for practical reasons, make up the majority of the slender body of long-term impact research. Most of the information that can be recovered weeks or months after the event is different from the memories of experiences that are so vivid and transformative that they can be recalled in substantial detail years after the event. Longer time frames are likely to act as powerful filters, leaving in memory the most important aspects of an experience in ways that add value to the field by uncovering significant positive or negative remembered experiences that may yield other and possibly profound evidences of the impact of museums.

Methodological Clarity

If we aspire to study and make sense of memories as a way of confirming the impact of museum experiences over longer periods of time, we will need to develop and become comfortable with a wider arsenal of longitudinal research tools. Particularly intriguing are the possibilities of comparing years-later, open-ended interviews, recorded narratives, and written essays with

verifiable archival material (photographs, catalogs, drawings, planning documents, press coverage) that might establish how closely an individual's memories paralleled the objective evidence, and particularly how the substance of what was learned was reflected in the goals of the original exhibit or program developer. Future studies ought to provide stronger rationale for the choice of research design and methods, and ought to link to the breadth of existing studies to allow for better compatibility of findings.

Influence of Memory and Subsequent Reinforcing Experiences on Immediate Experiences

Distant memories and their influence on immediate experience, and the role of subsequent reinforcing experiences on affective and cognitive learning, need to be better integrated in biographical approaches to museum assessment. There are intriguing reports that memories of earlier museum experiences, sometimes long buried, when triggered by later events, jell or are re-organized and given new or deeper meanings in the recovery process. These "aha's!" (when latent knowledge is finally embedded into a conceptual framework through one additional learning experience) mark new learning based on very strong but not fully realized impressions, and are often the most powerful "learning experiences" of visitors. They are also an important aspect of free-choice learning. Among the avenues for assessing long-term impacts of museum experiences, these may be the most productive directions for further study. Examples of these delayed insights were offered more than a few times when museum professionals were asked to tell stories of "significant, memorable, pivotal museum learning experiences" they observed or participated in (Spock, 2000a, 2000b). Museum visits are not isolated events, and researchers ought to distinguish between three very different effects of museum visits: (1) museum experiences can reinforce prior experiences, (2) they can provide new experiences, and (3) they may spark new experiences. All three aspects are intertwined as individuals meander through their own biographies.

Theoretical Frameworks

Many early studies that examined learning and long-term impact have been conducted atheoretically, that is, without a grounded linkage to the

theories of learning, psychology, or memories. Nowadays, there are many sound theoretical platforms backed by hundreds of studies upon which the outcomes of long-term impact studies can be interpreted. For example, constructivist learning theories (of which there are various kinds) permit interpretation of learning both in informal and formal contexts (see, e.g., Anderson et al., 2003); schema theories of memory can be employed to understand how visitors recall events and how they “encode” memories; and recent research about links between affect and long-term memory can help in determining factors that manifest memories in visitors (Anderson & Shimizu, 2006). Finally, the Integrated Experience Model (Storksdieck, 2006) and the Contextual Model of Learning (Falk & Dierking, 2000) provide frameworks that specifically embedded museum visits into previous experiences and follow-up and subsequent reinforcing experiences.

CONCLUSIONS AND IMPLICATIONS

The investigation of the long-term impact of museum experiences is a wide, largely underresearched field in which there is ample opportunity and scope for new investigations to contribute significantly to the understanding of visitor experience. Long-term impact studies may not only provide the field with a more complete understanding of the benefits visitors derive from museum experiences, they may also help the museum field better understand the true value of museums for the communities they serve. What is currently needed is a broad, comprehensive longitudinal impact study that follows visitors of diverse museum types (science, art, history, identity, etc.) over a long period of time, using a variety of measures, to document impact; a study akin to similar ones conducted in the medical field. Thus, deepening our understanding of the long-term meaning of museum experiences could have huge implications for the museum and leisure study field in general. This understanding could help museum professionals in developing institutional mission and goals, designing exhibitions and programming, and assessing visitor experience and learning.

There is a range of implications for museum practice, evaluation, and research, some of which we briefly summarize as a starting point for future conversations.

A. Implications for Practice

- *Align missions and goals with biographical perspectives of visitors*
Museum visits are part of a large free-choice and leisure infrastructure, and visitors may not perceive them as unique and individual events in their lives. Museums ought to acknowledge their role within this broad tapestry of experiences.
- *Design with past and future experiences in mind*
Linking to previous experiences and providing opportunities for follow-up are already part of good museum practice.
- *Create partnerships to link museum visit to other experiences*
Linkages are best achieved when cultural institutions cooperate. Competition is healthy, but museums ought to reach out to other institutions that operate within their “educational” or “experience” infrastructure to enrich their visitors’ lives and to provide more opportunities for subsequent reinforcing experiences and follow-up.
- *Encourage repeat visits*
Part of any subsequent reinforcing experiences and follow-up are return visits. These may be more likely if visitors are being provided with individualized experiences that fit into their biographies.
- *Provide opportunities to remember*
Visitors will remember some aspect of their museum experience. Museums ought to strategize what it is that they want their visitors to most remember and then encourage visitors to experience these things. Naturally, key memorable experiences will differ for different visitor types, and will range from object memories to social memories.
- *Be aware that visitors remember the visit selectively*
One strong incentive for “managing” visitor memories is the fact that visitors might otherwise recall the unexpected: something negative that stood out from the expected. Hence, museums need to avoid negative

associations at all cost. They will otherwise color visitors' perspectives, or—as suggested above—balance them with easily obtainable positive memories.

B. Implications for Evaluation

- *Include long-term in logic model*
This should happen as a matter of principle. Only if long-term goals are part of the design phase for visitor experiences will they become default aspects of evaluation.
- *Define outcomes over time*
Currently, outcomes tend to be defined as if they occurred or become evident at one moment. It would be helpful to distribute outcomes along a timeline that acknowledges more openly the difference between immediate, intermediate, and long-term outcomes of museum visits.
- *Ensure realistic timelines for including longitudinal components in evaluation and link those to a theoretical framework*
Most projects do not allow for longitudinal research because evaluation studies need to be completed shortly after programs or exhibitions are made available to the target groups. The funding community ought to decouple project funding from evaluation funding to allow for independent timelines or extend the timeline.
- *Use multiple methods and ensure that methods don't create a bias*
No matter what the time frame of an evaluation, laser-like studies on predefined outcomes will always benefit from additional open-ended questions, and open-ended research will often benefit from using comparable indicators.

C. Implication for Research

- More research is needed to link memory and impact, and we need a refined model of learning and memory over time that is applicable to free-choice settings.
- We need to assign meaning to certain time frames and create consensus in the research community on what these time frames represent. Does it matter whether we ask visitors to talk about their museum ex-

perience three months, a year, or 30 years after a visit? What questions are best asked within what time frame? Is there an “optimal” time delay for sampling “intermediate” and “long-term” experiences?

- We need to include more biographical research to make stronger links between prior experiences, museum visits, and subsequent experiences.
- We need to expand the research methods currently in use to include ethnographic studies of communities around museums, or conduct more quantitative, multi-institutional studies of long-term learning over specified time frames.
- We need to better understand the links between immediate, intermediate, and long-term impacts.

ENDNOTES

1. See Ballantyne & Packer, 2005; Borun et al., 1996; Dierking, Luke, Foat, & Adelman, 2000; Doering & Pekarik, 1996; Falk, 2006; Hood, 1983; Moussouri, 1997; Paris & Mercer, 2002; Pekarik, Doering, & Karns, 1999; Prentice, Davies, & Beeho, 1997; Rounds, 2004.