

An Identity-Centered Approach to Understanding Museum Learning



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abstract

This paper advances the thesis that museum visitors' identities, motivations and learning are inextricably intertwined. All individuals enact multiple identities, many of which are situational and constructed in response to a social and physical context. Identity influences motivations, which in turn directly influence behavior and learning. Visitors to museums tend to enact one or various combinations of five museum-specific identities, described here as: explorer; facilitator; professional/hobbyist; experience seeker; and spiritual pilgrim. Preliminary findings suggest that these identity-specific motivational categories might help to explain the long-term learning impacts of a museum visit.

INTRODUCTION

Mary and Molly are friends, and together they are visiting their local history museum. Throughout the visit, Mary busily chats with Molly, talking about her preparations for Thanksgiving dinner and occasionally using the historical objects on display as verbal props in her conversation. Meanwhile, Molly spends her time nodding at Mary while intently gazing at objects and intermittently reading the labels. How can we understand what is going on here and what this visit means to these two people? What are the likely long-term learning impacts of this visit, and what insights might we have gleaned about these impacts had we known something about the reasons these two women visited the museum this particular day? This paper puts forward the thesis that we could advance our understanding of this and other similar museum experiences by focusing upon the interconnections between visitors' identity, motivations and learning.

Learning and motivation—Even 200 years ago, it was appreciated that learning and motivation seemed to be always tightly intertwined (Herbart 1965). Unfortunately, the behaviorist paradigms of the twentieth century, as well as many cognitive ones more recently, largely ignored this relationship (Schiefele 1991; Schoenfeld 1999). Fortunately, the role

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of motivation in learning has begun to be rediscovered and re-appreciated as more investigators are studying learning outside of the artificial confines of laboratories and schools (see endnotes for a review).¹ Learning is the name we give to the complex biological process that underlies our ability to engage in such diverse activities as hitting a tennis ball, singing, knowing how to “read” facial expressions and “read” a work of art (see Falk, Dierking and Holland 1995). When using the term “learning,” we should never fall into the trap of thinking that it refers only to the internalization of facts and concepts. This is true of learning in general, and learning from museums in particular.

Viewed from this perspective, most human learning is self-motivated, emotionally satisfying, and personally rewarding. A number of investigators have found that humans are highly motivated to learn when they are in supporting environments (Deci 1992; Deci, Schwartz, Sheinman, and Ryan 1981; McCombs 1991); when engaged in meaningful activities (Dewey 1890; Maehr 1984; McCombs 1991; Salami 1998); when they are freed from anxiety, fear and other negative mental states (Diener and Dweck 1980; McCombs 1991); when individuals have choices and control over their learning (Covington 1992; Griffin 2004; Paris 1997; Paris and Cross 1983; Pintrich and DeGroot 1990); and when the challenges of the task meet the person’s skills (Csikszentmihalyi 1990a; 1990b). Since most, if not all, of these conditions typically apply to museum experiences, it follows that museums should be highly motivating settings in which to learn.

Museum visitor motivation and learning—Considerable time and effort has been invested in understanding the motivations of museum visitors. Historically, and even today, much of the research on visitor motivation has been driven by marketing concerns, and a disproportionate number of studies have treated demographic variables such as age, income, and education as key independent variables (see review in Falk 1998). Demographics may or may not correlate with buying decisions, but its variables have consistently been shown to be poor predictors of how and why people learn from museums (Falk 1993; Falk and Adelman 2003; Falk and Storksdieck 2005). Many investigators have gone beyond demographics and discovered a range of reasons for museum visits.² These may be: social and recreational; educational and self-fulfilling; cultural in small and large ways; evocative of awe and reverence; and restorative.

Taken as a whole, this research indicates that people have a finite number of reasons for choosing to visit museums. However, different investigators have categorized these various visitor motivations in different ways—many using descriptive rather than theoretical criteria. More recently, investigators have begun to document the strong connections between visitors’ entering motivations and their exiting learning.

For example, based upon a thorough review of the literature, coupled with open-ended interviews with hundreds of visitors at museums in England, Moussouri (1997) concluded that all the various reasons given for visiting museums could be placed into one of six different general categories which related to the functions a museum is perceived to serve in the socio-cultural life of visitors. She gave the categories generic names: education; entertainment; social event; life-cycle; place; and practical issues. In follow-up research, Falk, Moussouri and Coulson (1998) found that the public usually expressed combinations of these motivations, and perhaps more importantly, motivations directly

correlated with subsequent learning. Individuals who had a dominant education motivation for visiting the museum learned different things than did those individuals who had a dominant entertainment motivation—though both groups learned. These findings reinforced the observation of Paris (1997) that motivation and learning within the museum are not only connected, but that in order to understand visitors' museum motivations and learning, one needs to view both of these constructs in their broadest sense.

Research by Packer and Ballantyne (2002) also investigated the relationship between visitor motivation and learning. They collected data from 300 visitors, 100 each at an Australian science museum, art gallery, and aquarium. A factor analysis revealed five categories of motivations: learning and discovery; passive enjoyment; restoration; social interaction; and self-fulfillment. Many of the categories—but not all—were similar to Moussouri's. Importantly, Packer and Ballantyne also found that visitors' entry motivations correlated with differing learning behaviors in the museum.

Generalizing from these studies, we can conclude that people's motivations for visiting museums appear to directly influence their in-museum learning. This is not a new idea. Falk and Dierking (1992; 2000) as well as Doering and Pekarik (1996; Pekarik, Doering and Karns 1999) have written that visitors do not enter museums as "blank slates," but rather bring with them well-formed interests, knowledge, opinions, and museum-going experiences. Falk and Dierking referred to these entry conditions generically as the visitor's "personal context," while Doering and Pekarik talked about these more specifically as representing the visitor's "entry narratives." According to Doering and Pekarik, if we start with the idea that learning, broadly defined, is a major outcome of museum experiences, then it follows that differing learning outcomes are likely to be directly attributable to differing entry narratives. In addition, visitors' entering narratives will be self-reinforcing. Entry narratives will direct learning and behavior because visitors' perceptions of satisfaction will be directly related to experiences that resonate with their entering narrative.

Motivation and identity—Building on what we know about learning, we might then want to think of the reasons an individual opts to visit a museum—the motivation—as actually being a complex sociological and psychological construct assembled from a myriad of sources, including a visitor's prior knowledge of and experience with the setting, perceived social relationships and expectations, the social and cultural meaning s/he attributes to the institution, and personal interests and sense of identity. Sociologists say that these assemblages create a "horizon of expectation" in which an individual's sociological and psychological predispositions function like a lens in informing and shaping an individual's interactions with the world (see Alexander 2003). Learning, as we've seen, appears to flow from motivation, though not from some generalized implication of the term, but from very self-centered motives.

Harre and Moghaddam (2003) have postulated what they call "positioning theory," which relates individuals' learning to their specific motivations, which in turn are directly related to their orientation to the world. Similarly, Houle (1961), in a seminal typology of learners, focused primarily upon the learner's need for learning, rather than solely on what was being learned. The objective self-awareness theory of the 1970s, which suggests that individuals act in the world based upon an overt conceptualization of the "self"—acting positively when that self-perception is positive and negatively when negative—has reemerged (see Duval, Silvia and Lalwani 2001) as a way to explore cognitive and affective learning. All of these efforts to integrate motivation and learning converge upon the idea that an individual's motivations relative to learning are closely aligned with that individual's sense of self and identity. In other words, learning expresses identity.

Identity has long been viewed as a causative factor in human behavior, going back at least to the writings of Sigmund Freud (1921), William James (1890) and John Dewey (1890), if not further. Jay Rounds, in this issue of *Curator: The Museum Journal*, does an admirable job of presenting an overview of identity. However, as he observes, identity is an elastic word, used diversely by theorists to cover a range of conditions and

relationships. "Identity," as it is used in this paper, is generally consonant with the psychological view of identity, which is referring to an individual's sense of self—what Jay Rounds (in this issue) describes as the ability to "explain ourselves to ourselves." As Rounds emphasizes, identity is not, by and large, a fixed state. Analogous to how we currently understand learning, identity is continually constructed (Goffman 1959). Not only does identity develop and change over time, but also each of us maintains numerous identities (see Cooper 1999). Different identities are expressed at different times, depending upon need and circumstance. Although each of us possesses and acts upon a set of enduring and deep identities—for example, our sense of ourselves as good or bad people, or as stewards or consumers of nature—most of our life is spent enacting what I would call "identity-lite." For example, after getting home from a long day's work, we think, "What should I do tonight, should I sit home in front of the tube, or should I read?" This is a form of "identity work" (referencing Rounds, in this issue), since what we're saying is, "Who do I want to be tonight?" Although this type of identity work is not of the kind that has typically occupied the thoughts of most academics, it is the identity work that fills the bulk of an individual's life. Most of us skate from one moment to the next, reacting to the world and adopting culturally and situationally appropriate "identities" to fit the moment. In this view, an individual's identity is more often than not a series of emergent properties that grow out of his or her interactions with the social, cultural and physical environment (see Clark 1997; Gee 2001; Holland, Lachicotte, Skinner, and Cain 1998; McClamrock 1995; Minsky 2002). In other words, identity is *often* transitory and is almost always situated in the realities of the world—a view championed by Goffman (1959) nearly a half-century earlier.

Concretely applying these ideas to museums, I would hypothesize that most museum visitors "enact" a museum "identity" during their visit: an identity that characterizes their motivations for that visit. This identity is specific to that visit, on that day, and although this identity will be consistent with how that individual "defines" himself or herself, it is unlikely that this identity is the one that would provoke the individual to say, "Now I see who I *really* am."

In other words, my identity today, when I visit a museum, may be that of a "tourist" because I happen to be visiting a new city, but next week, back home, I might go to a museum, maybe this time with my children, and enact a different identity, that of a "parent." I may be willing to say that being both a tourist and a parent are important aspects of who

"I am," but may not be willing to say that either is the single most important and defining aspect of my life. Nonetheless, on that day, in that museum, that identity defines my motivations, and by so doing, it also must influence my learning.

Investigating the intertwined constructs of identity, motivation, and learning—As part of a recently completed three-year National Science Foundation-funded investigation of visitor learning at the California Science Center in Los Angeles, Martin Storksdieck and I attempted to investigate the intertwined constructs of museum motivations, identity, and learning. The original purpose of this primarily quantitative study was to systematically and simultaneously investigate the impact on visitor learning of a dozen factors suggested by the Contextual Model of Learning (see Falk and Dierking 2000). In the first of two studies, we set out to determine how independent variables—such as prior knowledge, interest, prior experience, motivation, choice-and-control, within-group social interaction, between-group social interaction, orientation, advance organizers, architecture, exhibition quality, gender, age, time of day, day of the week, and race or ethnicity—individually and collectively contributed to visitor short-term learning outcomes. Each of these independent variables was measured using multiple methods, and validity and reliability coefficients were generated for each measure. (For a description of the exhibition, methods, and instruments used in this research, see Falk and Storksdieck 2005.) Because of the large number of independent variables we were considering, we initially restricted our dependent measures to changes in visitors' knowledge of topics associated with the content of a single exhibition—the *World of Life* at the California Science Center. Our random sample of visitors to the exhibition ($n = 191$) was characteristic of the diversity (in age, sex, origin, family type and size, and race or ethnicity) of visitors to the California Science Center, and included a range of individuals, from those who had only the most rudimentary knowledge of life sciences, to those with graduate degrees in biology and life-science careers. Immediately after visiting the *World of Life* exhibition, the vast majority of these visitors demonstrated a measurably enhanced understanding of life science (based upon seven different measures of knowledge change).

Logic would suggest that variables such as the quality of exhibitions (as measured by independent experts), the amount of time visitors spent interacting with the exhibition, as well as exhibition strategies such as advance organizers and thematic clustering (for a description, see endnote),³ should benefit all visitors, but our data suggested that this was not so. Significant benefits to some visitors' short-term learning (as measured immediately prior and immediately subsequent to experiencing the *World of Life* exhibition) could be attributed to these exhibit-related variables, but for others there was no discernable impact.

The key to understanding these subtleties came by clustering visitors based upon their entering attributes, such as prior knowledge of and prior interest in biology. As was found in previous studies (Falk and Adelman 2003; Dierking, et al. 2004), the results of this investigation indicated that the course of an individual's learning was better explained by who the visitor was than by what he or she did. In other words, learning accorded with what they knew and why they came. This is not to say that exhibits played no role in visitor learning. Rather, it emphasizes that an individual visitor's learning outcomes appear to be influenced—but not dictated by—interactions with exhibits. This conclusion was further reinforced by a second round of interviews with roughly one-quarter of the original sample. All of the individuals in the original sample were asked during their immediate post-*World of Life* visit interview (conducted between November 2000 and April 2001) if they would be willing for us to re-contact them at some unspecified later date. Of the 191 visitors who were interviewed after leaving the exhibition, nine out of 10 ($n = 171$) volunteered a phone number, an e-mail address, or both. In the summer of 2002, we re-contacted and conducted face-to-face interviews with 45 individuals, and telephone interviews with an additional seven persons, from the original sample. Our re-contact interviews were done in a conversational style and lasted between 40 minutes and two hours.

The interviews included a range of questions, most of which were open-ended. Incorporated into our protocol was an effort to understand, nearly two years after the initial visit, how these individuals made sense of their experience. One of the many ways we sought to analyze the data was in determining if identity played a role in their memory of the experience.

Preliminary analysis of this data (Falk and Storksdieck 2004) revealed that variables such as prior knowledge, interest, and number of “quality exhibits” a visitor interacted with, were not as robustly predictive in the long-term as they had been in the short-term. These 52 individuals told us that they found their science center experience satisfying and beneficial. As we probed more deeply, we discovered that these individuals’ perceptions of satisfaction and benefit could be directly tied to the reasons they had previously reported to us for attending the science center in the first place. Although reasons given by these individuals for visiting the California Science Center resembled the responses of individuals interviewed by Moussouri, Packer and Ballantyne, and others, our groupings differed from those observed by these earlier investigators. Using content analysis from both the long-term interviews and each individual’s entry motivation data collected two years earlier, we found five clusters of closely associated identity-related motivations: the explorer; the facilitator; the professional/hobbyist; the experience seeker; and the spiritual pilgrim.

The explorer—These individuals said they visited because of curiosity and/or a general interest in discovering more about the subject or the content of the institution. In fact, a number of these visitors self-described themselves as curious people, and saw places like the California Science Center as supporting their curiosity. There were comments like: “If you don’t try to revisit your knowledge in some way, by reading or watching TV or museums like this, I think you forget a little bit on the educational part and these things are very important.” And: “The more you are exposed to [science], the more you are going to want to learn, and you know hopefully want to strive for more.” They either volunteered, or when specifically asked, indicated that they did not really care about whether others in their social group enjoyed the visit; this visit was about themselves, first and foremost. As one visitor stated: “Oh sure, I was here with my family, but they were on their own. I came because I wanted to see the Science Center, not because of my family.” Another said, “I want to go and learn something new, too. It’s kind of a selfish thing.” Included in the explorer identity group were individuals who described themselves as “science lovers,” “learners,” “discoverers,” and/or “curious people.”

The facilitator—In stark contrast to explorers, another group of individuals said they were visiting in order to satisfy the needs and desires of someone they cared about (other than themselves)—in particular their children. When asked why they came, they would say things like, “Science is important for the children.” This group included a large number of what we might describe as committed parents, who said they liked the Science Center because of its focus on science and its interactivity, making it an enjoyable place for children. One mother said, “[I] wanted [my daughter] to pick a few things, not many things because she’s so young, just focus on a couple of things that we could talk about later.” Although they saw this as a valuable experience for their children, a number of these individuals were quick to add, “I wouldn’t be here without children,” or “I personally would rather go elsewhere.” In this category was an individual who described himself as wanting to make sure he did “good things” for his family on the weekend. When probed further about “good things,” he said, “Like making sure we see the new movies when they come out, going to Disneyland at least once a year, maybe going to the ballgame, you know, things like that.” Although most of the people in this category self-described themselves as “parents,” there were also a couple of individuals who indicated that their purpose in visiting the science center was to please a spouse or boyfriend/girlfriend, and in one case the individual was hosting a visiting relative and his family.

The professional/hobbyist—This group was related to the explorer group, but these were not your typical explorer types. These individuals said they possessed a strong knowledge and interest in the content of the institution, and their primary motivation was not general but specific. Given their backgrounds, they were more interested in learning how the information was conveyed than in the information per se. Examples of this included one individual who said, “I’m a science teacher and I always get ideas for how to convey tough concepts by visiting science centers,” and another who said, “I’m in the medical field and [the Science Center] does an extremely good job in describing to non-medical people how our body works and how we process food and turn it into energy.” Another spoke of the desire to learn some specific nuance of the content: “We home school our children and we were studying human development at that time. We used the chick and frog hatching exhibit as part of our lesson for that day. . . . I explained to [the] kids about how the chicks hatched and which eggs would work and which did not.” This group was visiting with an eye towards enhancing their profession, avocation, or hobby.

The experience seeker—These individuals, often tourists, were motivated to visit primarily in order to “collect” an experience, so that they could say they’ve “been there, done that.” When probed, many of these individuals indicated that they came in large part in order to fulfill the expectations of others (“My brother-in-law was on my case because I hadn’t taken the kids here yet”), or were driven by recommendations or opinions of others (“We were on vacation and looking for things to do and the guy at the hotel said, you should go to the California Science Center”). It is not that people in this group don’t remember or learn things, but the experience is filtered through a recreational-identity lens. For example, one individual said, “I remember things because they [children] thought that was pretty funny. The burping of the body and where it makes sounds as the food goes up and down and stuff like that, all the little gross sounds, they loved that.”

The spiritual pilgrim—Although relatively scarce in our Science Center visitor population, some individuals visited in order to reflect, rejuvenate, or generally just bask in the wonder of the place. In terms of the Science Center, these are individuals who expressed an awe or reverence for the subject matter or setting: “The Science Center is a place for introspection, a place for ‘science.’” Only one individual in our sample gave answers that put him exclusively into this category; he felt that going to the Science Center enabled him to satisfy a need to be “surrounded by science”—for him, he was enacting a reverential self.

We were able post-hoc to place these 52 individuals into one of these five categories, or some combination of these categories (for details see Falk and Storksdieck, in prep). However, the vast majority of our sample (87 percent) fell into one of three categories: 1) They visited the Science Center primarily to satisfy their explorer identity. 2) They visited based upon their desire to satisfy their facilitator identity (primarily in the role of parent). 3) They visited for some combination of these two reasons. The few individuals who fell into one of the remaining three categories, or combinations of these three, were excluded from further analysis because of small numbers. We then compared the changes in each group's understanding and knowledge of life science concepts over time (pre-exhibition, immediately post-exhibition, and 18–23 months later).⁴ Figure 1 shows that knowledge of life science of an individual in one of the three main groups—explorer, facilitator, or the combination explorer/facilitator—changed over time in different ways. There was little, if any, difference between these three populations either prior to the visit or immediately following the visit, but after nearly two years, striking differences emerged in the three populations' knowledge of life sciences. Although some of the positive learning effects persisted among the visitors who were largely motivated to visit in order to provide a quality experience for someone in their family (such as children, spouse or close friend), these individuals showed a significant decline in their knowledge over time. By contrast, those individuals who visited primarily, or at least in part, for the purpose of satisfying their own personal learning needs and curiosity, appeared to maintain the knowledge they gained over the long-term. While the data should certainly be considered as indicative rather than conclusive, these conclusions appear to be consistent with the idea that visitors' identity-related visit motivations influence visitor learning in museums, particularly in the long term. One explanation for the results may be that although all visitors benefited from exposure to the *World of Life* exhibition in the short term, only those with a strong internal motivation for exploration continued to seek out experiences that reinforced this initial learning. It is worth noting that explorers were not better educated, more knowledgeable, or even more interested in the subject than were facilitators; they just had a different goal for the visit.

However, as emphasized earlier, learning about life science, which was the topic of the exhibition, was only one of many possible things visitors could do during their museum experience. For example, early in the delayed interview, each individual was asked to respond to a range of questions about their experience, including questions that sought to explore whether individuals felt they learned new things about their companions, whether they found the experience spiritually satisfying and whether it fulfilled their recreational

needs. When asked to recall details of their visit, facilitators or explorer/facilitators were noticeably better at providing such details than were explorers. Many explorers found it extremely difficult to talk about the social companions with whom they had visited (though all had visited as part of a social group). The social-identity-motivated individuals could not only accurately recall who they were with, but spontaneously described the benefits of the visit almost totally from the perspective of the other individuals, both at the time of the visit and subsequently. In other words, facilitator and explorer/facilitator individuals showed evidence of superior social learning as compared with explorer individuals, as would be predicted by their social agenda (see Falk and Dierking 1992). These findings represent just two of several interesting results that are emerging from our use of identity-related visit motivation as a way to understand museum learning (Falk and Storksdieck, in preparation).

Next steps—Encouraged by these preliminary findings—and again with support from the National Science Foundation—Joe Heimlich, Kerry Bronnenkant, Janelle Barlage and myself, in collaboration with the American Association of Zoos and Aquariums, set out both to validate these preliminary assumptions about identity and to investigate ways to quickly and reliably assess visitors' "museum identity." Focusing specifically on visits to an aquarium or zoo, we collected data from 3,115 individuals at 10 aquariums and zoos from

Figure 1. Changes in biology understanding over time as a function of visitor's "enacted" identity (N=45).

[Figure 1 here]

across the country. Our investigation was conducted as a series of iterative studies—each building upon the findings of the previous study.

As was suspected from the work at the California Science Center, using identity as a lens to understand visitor motivation for attending an aquarium or zoo was not a simple task. You cannot just directly ask visitors why they visited today, or "What identity are you enacting here today?" Simply asking "Why are you here?" leads to stereotypical answers ("to have fun," "to learn something," "to do something with my family"), and simply reflects a visitor's perspective on why she or he ought to be in a place. To move beyond these limitations, we began by generating a long list of questions, derived from previous research conducted in both museum and non-museum contexts (see Heimlich, Bronnenkant, Witgert, and Falk 2004), in order to determine whether any of these questions would both accurately categorize visitors in terms of a function of identity and correlate with visitors' self-reported in-museum behaviors and exiting learning outcomes. The ultimate goal was to create a set of valid and reliable quantitative scales for determining "museum identity" that could be readily applied in any zoo or aquarium setting.

The preliminary results from this investigation indicate that visitors to aquariums and zoos do reliably fall into some combination of these five museum identity categories. Either because of the large sample size, or perhaps because of the nature of zoos and aquariums, the results indicated that all five identity motivation categories were well represented. However, as was found to be case at the California Science Center, the vast majority (93 percent) of zoo and aquarium visitors fell within multiple categories; in other words, visitors were enacting multiple visit identities. Consequently, we concluded that there are not five categories but at least 25 categories of museum identity: the five main

categories and 20 combinations of primary and secondary motivations. Although other variables in addition to identity (such as visitor age, presence or absence of children, previous zoo visits) were also explored in this study, none seemed to equally predict both entry motivation and exit self-reported learning (see Heimlich, Bronnenkant, Witgert, and Falk 2004; Heimlich, Bronnenkant, Barlage, and Falk, in prep).

As of this writing, this same team is conducting a series of intensive, long-term research investigations at four U.S. aquariums and zoos. A tool for measuring visitor identity will be one of many instruments we will use to investigate visitors' zoos and aquarium learning. Our hope is that this new tool will provide a meaningful way to segment audiences, and to determine to what extent identity can be used as a valid and reliable independent variable for describing and potentially predicting how visitors to zoos and aquariums behave, and what if any changes in visitor learning occur. We anticipate findings from this research to be available by mid-2006. Plans are also in place to conduct similar investigations at two living history museums as part of a recently funded Institute of Museum and Library Services grant.

IMPLICATIONS

Without question, our results are preliminary, so why present these findings now? It seems likely that by doing so, this line of research will stimulate valuable discussion and debate.

It appears that many in the museum community may find it disconcerting to prioritize the entering beliefs and interests of the visitor. Museum professionals may feel that this attention on visitor identities diminishes the central importance of exhibitions and programs that have historically been the focus of staff effort, and introduces a wild-card element by emphasizing things we can't control, such as the mental state of incoming visitors. I argue that the alarm is unnecessary. The research does not imply or indicate that exhibitions and programs have no effect on visitors. It does assert that a visitor's entering identity—which is strongly influenced by how museums are perceived and used within our society (see Lippman and Kermode 1996)—creates the prism through which exhibitions and programs are experienced. It is the point emphasized earlier by Doering and Pekarik (1996): the visitor, not the institution, drives the visitor's experience in the museum. The visitor uses the raw material provided by the museum to construct a new experience that is both unique to the individual and potentially satisfying within the identity-construct that has already shaped him or her. The fact that there appear to be such a finite number of identity categories is reflective of cultural overlays in relation to the "museum," which delimit what the average visitor believes can be achieved in these settings, at this place and time. For a museum professional to wish to abdicate from this identity-development "stuff" out of fear of being unable to control the results is perhaps understandable, but such action (or inaction) ignores the human realities of how meaning is constructed and how museums currently are used by the public to support personal growth and development. I suggest that, in this specific sense, the visitor comes to the museum precisely in order to engage in this subtle process of building personal meaning. At the same time, the museum must remain cognizant of its own culturally and physically imposed identity in order to open up this potentiality for the visitor. If either side (museum or visitor) is absent from or unengaged with this process, the nature of the exchange has the potential to be less than fulfilling. Museums can and do influence visitor identities, both through the experiences that are provided, and through marketing. And we can design exhibitions and programs that directly relate to and build from visitors' needs. The question of whether we can do a better job than we currently do is a testable one. Perhaps the field could benefit by taking a more empirical approach to practice—for example, designing parallel exhibits based on this or other models and determining outcomes.

The definition of identity presented in this study may appear to suggest that the "self" being expressed in museums is shallow, ephemeral, or provisional. Some critics may charge that this view of the self creates a diminished value for the art, science, and history that museums wish to communicate. Another position is offered by the work of Paris and Mercer (2002), Stainton (2002), and Ellenbogen (2003), who have argued that people use museums as vehicles for deeply expressing identity. These authors have tended to frame the conversation in ways that focus on how people use the content of the museum's exhibitions to actively confirm, dismantle and/or elaborate deeply held identities like ethnicity, gender, and social place. Without a doubt, this kind of "identity work" does occur, but my data, although limited, suggests that many individuals attend museums—at least, science centers, zoos and aquariums—to confirm and define identities that many in the museum profession might find more prosaic. Certainly, identity maintenance and building is occurring, but like the science center parent quoted above who cited the museum as just one of many suitable venues for doing "good things" with his children, the content of the exhibitions may seem to be of relatively little importance.

For this individual and many others like him, the museum was valued because it was perceived as a good place to support parental identity. Although learning specific aspects of science—or it could have been art or history—did not seem to be a requisite part of his identity work that day, the more profound work may be going on in silence. I would argue that museums can provide opportunities for identity work that are in stark contrast to the stated purposes of the institution—or apparently so—yet these deep streams (being a parent, being an explorer, expressing curiosity, expressing social cohesion) are aspects of the

self that people find immensely fulfilling and that museums should not reasonably shun. In conclusion, given the complexity of the museum systems we are attempting to understand, the identity-motivation relationship described in this paper is, at best, only likely to partially describe and predict what visitors do or learn. Identity is ultimately highly idiosyncratic and difficult to measure. No two visitors ever have exactly the same identities, or, for that matter, motivations or learning. The coarse-grained categories I've described are just that. It is also fair to say that there could be, and almost certainly are, other identity categories that museums support. So, bearing all of the above qualifications in mind, we can conclude that there appears to be preliminary data supporting the idea that combinations of the five core identities described above allow us to capture, in broad outline, the situated identities enacted by a large number of museum visitors (or at least, science center, zoo, and aquarium visitors). Further, these enacted identities appear to directly influence visitors' behavior and learning. If true, this approach would suggest that—whether a visitor is maintaining or building identity—he or she is actively engaged in using the social and physical context of the museum to make personal meaning, an observation that provides us with a new and interesting way to make sense of how people learn in museums. Much of this we have long understood. For example, we have intuitively recognized the learning behavior of explorers and professionals/hobbyists because these types so closely mirror most museum professionals' museum-going identities. But only recently have we begun to appreciate just how differently learning occurs among facilitators, experience seekers, and spiritual pilgrims. If these preliminary findings hold up, this framework might enable us to get better at measuring different types of learning outcomes and understanding how better to satisfy different types of visitor identity needs. Clearly, there is a lot of work ahead, but I am hopeful that this research will point the field in some new and interesting directions.

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NOTES

1. See: Csikszentmihalyi and Hermanson 1995; Deci and Ryan 1985; Dweck 1986; Falk and Dierking 2000; McCombs 1991 and 1996; Paris 1997.
2. See: Doering and Pekarik 2000; Ellenbogen 2003; Falk 1998; Falk and Dierking 1992; Gore, Mahnken, Norstrom, and Walls 1980; Graburn 1977; Hood 1983; McManus 1992; Merriman 1991; Miles 1986; Moussouri 1997; Packer and Ballantyne 2002; Pekarik, Doering and Karns 1999; Prentice, Davies and Beeho 1997; Rosenfeld 1980; Wells and Loomis 1998.
3. An "advance organizer" is a brief sentence or paragraph that summarizes what the conceptual content of an exhibition or program will be; it provides learners with a way to cognitively organize the information they are about to encounter. "Thematic clusters" is a term used to describe the effort to group exhibits together in cognitively meaningful ways. For example, if there are four exhibits that deal with genetics, rather than distribute them randomly through an exhibition, all four would be placed in close proximity to each other so that visitors could see the interrelationship of the ideas presented.
4. Changes were measured using Personal Meaning Mapping Breadth scores as this was deemed to be the most robust of our seven dependent measures. For more details on both Personal Meaning Mapping and this choice of measures, see Falk and Storksdieck (2005).

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