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Making Meaning Together: The role of interpretation  
during a short-term nature excursion

by

Kate Jurow

A dissertation submitted in partial fulfillment  
of the requirements for the degree of

Doctor of Philosophy

Environmental Studies

at

Antioch University New England

(2016)

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**For Rich, Heart and Gary**

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## **Abstract**

Interpretive nature walks are an important tool for conservation organizations, which use them to educate, and to connect visitors with their sites. Interpretive studies often focus on program outcomes. However, less research exists on how the experience itself is perceived by visitors. Is it primarily a learning process? What role does the guide play, and how does the process of interpretation affect the visitor experience? What implications might this have for interpretive techniques, and for organizations seeking to build supportive stewardship communities? The purpose of this study was to explore how the process of interpretation affects a short-term nature experience by examining it through the lens of both visitor and guide. I accompanied nature walks on Cape Cod, Massachusetts, USA, and subsequently conducted semi-structured interviews with guides and visitors. This provided a trifold perspective on each trip, enabling an examination of the trip as observed by the researcher, and as perceived by both visitor and guide. Learning was an important part of the experience, as expected. However, interviews revealed that a major aspect of a trip is social. A large proportion of respondent narrative was devoted to social observations: about group dynamics; the sharing of knowledge, experience, and personal history; social norms; and the guide's social aptitude. Information transfer did not always originate with the guide, but resulted from visitor-to-visitor interaction. Visitors learned from each other by comparing past experiences, speculating about observations, and generating questions for the guide. Thus, in addition to receiving knowledge delivered by the guide, visitors were engaged in active, constructive social learning and building and reinforcing common interests. At the same time, they were reinforcing a common identity as members of a particular social "tribe." Guided nature walks are thus revealed as a social forum for constructive

learning. Visitors are not merely passive recipients of knowledge, but active participants in a social learning experience. This discovery has implications for the role of interpreters, their selection, and training. It also offers an opportunity for organizations to use this social aspect as leverage for community-building and development of a stewardship identity among visitors.

## **Chapter 1: Introduction**

For several summers I was one of the people privileged to give nature talks and walks to national park visitors. I was an “interpreter,” someone designated to help visitors understand and appreciate the natural world. Every day I stood before a sea of expectant faces, explaining a fossil, a geological or forest landscape, or perhaps a rare bird. Usually the faces were receptive. Occasionally some looked bored; sometimes one or two were sleeping. Every day I wondered what I was doing. Was I reaching my audience? Why, or why not? What magic creates the connection and understanding that I was striving for? Where does it originate, and how could a naturalist such as myself conjure it into being?

I structured my presentations in accordance with interpretive guidelines developed by my organization: every program had a theme, goal, and learning objectives, all approved by my supervisors. With my interpretive toolkit in hand (techniques such as humor, sensory involvement, surprise), I was expected to attain the outcome defined by my organization: connection between visitors and the inherent meanings in my particular site, Grand Canyon National Park. The Grand Canyon is an astounding and magnificent place. It is one of the seven natural wonders of the world, a UNESCO Heritage Site, a geological marvel, and source of national pride. Surely, the assignment of connecting people to this icon was an easy one. And yet. What is the inherent meaning of the Grand Canyon? What does it mean to “connect” to that meaning, and how do we measure or even identify that connection? As an interpreter, I was convinced that the Grand Canyon experience offered an unparalleled opportunity to excite visitors about the natural world and the need to protect such places. But I understood nothing

about the process itself. Interpretation seemed a black box to me: visitors entered the box, had an experience, and (one hoped) emerged connected to something (Figure 1-1).



*Figure 1-1 Interpretive Experience Black Box*

What happened inside the box? What happened during the experience? What was in the hearts and minds of my visitors? How did my role as interpreter influence the experience and its outcomes? Was the model itself valid; i.e., was “connection” a realistic outcome? This study was designed to pry open the black box: to examine how nature interpretation facilitates a nature experience by exploring the experience through the lens of both visitor and guide.

### **Connecting to the Natural World: Interpretation, stewardship and organizational mission**

Recent media coverage has focused on the growing disconnect between humans and nature in an increasingly urbanized world. In 2005, Richard Louv grabbed national attention by proposing that today’s children suffer from “nature deficit disorder,” describing an “increasing divide between the young and the natural world.” Research supports the observation that both children and adults are spending less time in outdoor recreation and natural surroundings (Pergams and Zaradic 2006, 2008, Cleland et al. 2010, Larson et al. 2011).

Research also suggests that a sense of connection or affinity with the natural world may be associated with a desire to protect nature (Kals et al. 1999), and with environmental concern (Schultz 2001; Mayer and Frantz 2004; Dutcher et al. 2007, Nisbet et al. 2009, Davis et al. 2009,

2011, Zaradic et al. 2009). If Americans are, in fact, becoming increasingly disconnected from nature, and if nature connectedness is associated with nature protection and environmental values and behavior, what does that portend for the future of America's conservation lands? In response to this concern, agencies and organizations mandated with the preservation of America's wild lands have been developing programs and initiatives designed to reconnect the American public with its natural places. Visitation is one way that conservation organizations and agencies responsible for the stewardship of wild places work to foster these connections. They also rely on nature interpretation and education to help promote stewardship behavior towards the lands under their care.

The linkage of interpretation to stewardship has become a focus of NPS (National Park Service) interpretive goals, as well as those of conservation-focused NGOs (Non-Governmental Organizations), and a prime rationale for interpretive programming. As the NPS states on the website that introduces and supports its Interpretive Development Program, "People must *care for* what they first *care about*" (italics in original). The NPS Interpretive Development Program states that one of its goals is to "...result in a higher level of public stewardship for park resources."<sup>1</sup> The NPS 2006 *Interpretation and Education Renaissance Plan* lists as its first and primary goal to "engage people to make enduring connections to America's special places." The U.S. Forest Service More Kids in the Woods program was launched in 2006 to "help close the gap between America's young people and nature, and to ensure that future generations remain active in caring for the Nation's natural resources."<sup>2</sup> In its *Strategic Plan 2015*, Mass Audubon lists as its first strategic goal to "connect people and nature" and "engage and motivate

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<sup>1</sup> National Park Service 2008. Interpretive Development Program. National Park Service, Dept. of the Interior. <http://www.nps.gov/idp/interp/>.

<sup>2</sup> U.S. Forest Service, Compass Issue 14 <http://www.srs.fs.usda.gov/compass/issue14/02kids.html>

people to learn about and enjoy the natural world, and be inspired to act to protect the nature of Massachusetts.” In addition to stewardship, the Natural Lands Trust lists “Connecting People to Nature” as one of its key missions.

The association of interpretation with stewardship is an increasingly significant element in interpretive programming and in the training of interpreters. The National Association for Interpretation (NAI) is currently the major representative organization of the interpretive profession, certifying interpreters, guides, interpretive planners, developers, managers, and trainers. The pioneer of the philosophy and principles of interpretation, Freeman Tilden, defined interpretation as “an educational activity which aims to reveal meanings and relationships...rather than simply to communicate information.”<sup>3</sup> The NAI refers to it as “a mission-based communication process that forges intellectual and emotional connections between the interests of the audience and the meanings inherent in the resource”<sup>4</sup> (the place, object, or event being interpreted). Former executive director of the NAI, Tim Merriman, describes the need to transform audiences “from being visitors to being stewards, from being users into being advocates” (2002). Larsen (2002) addresses the importance of “a relationship between interpretation and resource management, because ...the audience determines if they will care enough about the resource in order to support the care for the resource...Resource management and interpretation have a great deal in common. They each apply different knowledge and skills to the preservation of a resource.”

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<sup>3</sup> Tilden, Freeman. 1977. *Interpreting Our Heritage*. 2nd ed. Chapel Hill, North Carolina: University of North Carolina Press.

<sup>4</sup> National Association for Interpretation, <http://www.interpnet.com/>

If connection is, in fact, one key to stewardship, then the current push for preservation represents an ideal mission for interpretive programs. Good interpreters “provide opportunities for audiences to make personal, real, and significant connections to the resource.”<sup>5</sup> Merriman (2002) writes, “If we make our facts, stories and concepts...relevant to our specific audience and use the right communication techniques, great things happen. We refer to those great things as ‘connections.’ ” For practitioners working in wilderness parks and outdoor settings, this means helping visitors to engage with wild and natural places with the goal of motivating stewardship behavior. In this context, naturalists are being placed in the functional role of stewardship advocacy, with the explicit assignment to “inspire a new, diverse generation of park stewards.”<sup>6</sup> This is a position of significant responsibility.

Museums, zoos, nature centers, conservation organizations, as well as state and federal agencies retain guides and interpreters to help accomplish their respective missions. But what does it mean to engage people to make “connections” and how are these connections to be made? For organizations with a mission goal of connecting the public to nature, how can nature interpretation foster this connection? What does it really mean to “connect to nature” and what is the guide or interpreter’s role in this process? As visitors to natural places become increasingly strangers to these places, what interpretive methods are most effective in engaging people with the natural world?

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<sup>5</sup> Ibid.

<sup>6</sup> Bomar, Mary A. 2007. *The Future of America's National Parks: Summary of Park Centennial Strategies*. National Park Service, Dept. of the Interior.

## **Interpretation and the Nature Experience**

Personal interpretation (interpretation led by live guides) takes place in a variety of settings. The fundamental tenets of interpretation are assumed to apply in all of these settings: guides, naturalists, and interpreters help visitors to understand a place or event, in the hope that visitors will engage and connect with whatever is being interpreted. But interpretation occurs in the context of a very particular physical environment and experience, be it a quiet art museum, a historical site populated by re-enactors, or a whale watch in choppy seas. How does a specific environment and experience affect the techniques that interpreters use and how does it influence the effectiveness of interpretation?

A nature experience carries its own unique context, especially for a public that is increasingly unfamiliar with the natural world. It is out-of-doors and subject to weather, may require special clothing or gear, may be more physically challenging than visitors are accustomed to, and can be unpredictable or uncomfortable in a way that an indoor or urban experience is not. Further, a nature experience is not homogenous over time, nor is a participant a passive observer of a natural or wild landscape. Research demonstrates that a nature experience is dynamic and transactional, a holistic entity that encompasses visitor, landscape, time, social interactions, physical conditions, and emotional response (Hull et al. 1992, Hartig 1993, Patterson et al. 1998, McIntyre and Roggenbuck 1998, Werner and Altman 2000, Borrie and Roggenbuck 2001). The emotional and physiological states of participants change over time, and in longer-term experiences can be defined by observable stages. Even shorter-term nature experiences generate emotional response, changes in psychological well-being, and changes in feelings of connectedness to nature (Tinsley et al. 2002, Schultz and Tabanico 2007,

Korpela and Ylen 2007, Korpela et al. 2008, Kjellgren and Buhrkall 2010). An interpretive guide who leads visitors through a natural or wild experience is therefore not just delivering an interpretive program or information to a passive audience in a static environment. He or she is part of an interactive exchange in which a visitor traveling through the natural world undergoes a highly personal and fluid experience. If the nature experience is holistic, mutable, interactive and personal, then an interpreter is embedded in that whole, as integral a part of the experience as the park, sanctuary, or wildland being explored.

If personal interpretation is not just an educational option layered over a nature activity, but an integral part of a holistic and personal experience, what does that imply for interpretive methods? What does it imply for the role of the interpreter? How can interpreters use this perspective on nature experience to help visitors and participants to connect to nature and relate positively to the natural world?

While considerable research has been done on the cognitive aspects of nature interpretation in the field and on the experience of long-term wilderness immersion, few studies have focused on interpretation and the short-term nature experience. In a survey of visitors at ranger programs in national parks, Coble (2005) found that personal interpretation increases intellectual and emotional connections, but she did not define or further explore those connections, or how they were mediated. This study represents an attempt to expand on the theme of nature interpretation in a short-term experience by examining the experience itself.

## **Purpose of Study**

The purpose of this study was to explore how the process of interpretation affects a nature experience and influences the human-nature relationship by examining the activities and role of interpretive guides through the experience lens of both the visitors and guide. Since most visitors to conservation and wildlands are day visitors, I examined this question in the context of a short term nature experience.

My research questions were as follows:

- What are the ways in which interpretation influences a short-term nature experience?
- What role or roles does the interpreter play in the experience?
- What role does the act of interpretation play in the experience?
- Why do visitors choose guided nature experiences?
- How do guides choose the interpretive approaches that they deploy?
- What is the relationship between the approaches used by interpreter guides and the nature experience?

By addressing these questions, my goal was to shed light into the experiential “black box” of the interpretive nature experience.

## **Chapter 2: Literature Review**

The goal of this study was to understand the interpretive experience in a nature context by exploring the role played by both the guide and the process of interpretation. I began by looking at the setting: reviewing how researchers have studied and characterized the nature experience itself. I then reviewed the literature that examines interpretation in the context of a nature experience – in effect, exploring what happens when the interpretive process is layered onto a nature experience. Continuing to investigate relevant literature, I found significant insights in the field of tourism and leisure studies. This discipline examines nature and guided nature experiences from sociological and marketing perspectives. It raises issues such as authenticity, commercial exploitation, “branding,” and the role of the guide as mediator of experience. These three viewpoints – experiential, interpretive, and tourism/leisure – offer findings and ideas that impact both the theory and practice of personal interpretation (interpretation by a live guide) in a nature context, as I discuss in this chapter.

### **The Experience of Nature**

The nature experience has been examined through many lenses. Environmental psychologists explore how individuals interact with their environment – how they both affect and are affected by it. Researchers in this discipline have argued that individual and environment comprise a single system in which the various elements mutually define each other: the transactional perspective. Authors from fields as varied as recreational studies, mental health and landscape architecture focus on the restorative qualities of natural landscapes and the wilderness

experience. Others focus on the themes and dimensions common to nature experiences, and speculate on the origins of these themes. Still others view the nature experience as having qualities of a true relational partnership. In this section I examine these perspectives and their relevance to the guided nature experience.

### *Nature Experience as Transaction*

Writing from the viewpoint of environmental psychology, Ittelson et al. (1976) dispute the position (common at the time) that individuals are separate from their environment, that they are independent responders reacting to external environmental stimuli. The authors contend, rather, that people and their environments are mutually interacting:

The way man responds to his environment affects the way he acts on it; the way he acts on it affects the way he responds. Out of this continuing process emerges a picture of man as the active creator, psychologically and physically, of the environment within which he functions... It is meaningless to speak of either as existing apart from the situation in which it is encountered. The word 'transaction' has been used to label such a situation, for the word carries a double implication: one, all parts of the situation enter into it as active participants, and two, these parts owe their very existence as encountered in a situation to such active participation—they do not appear as already existing entities which merely interact with each other without affecting their own identity... Out of this continuing process emerges a picture of man as the active creator, psychologically and physically, of the environment in which he functions.

Altman and Rogoff (1987) concur with this transactional concept of experience as embedded in a dynamic, emergent system. From their perspective, an event is a holistic entity, a “confluence of inseparable factors that depend on one another for their very definition and meaning.” Person and context “jointly define one another.” The transactional perspective also accepts change over time as intrinsic to a system: since no final “steady state” need be assumed, outcomes are expected to be “variable, emergent and novel.” Altman and Rogoff argue that this has significant implications for researchers examining an experience from a transactional

worldview. The “nature of tasks and instructions, the flow of events, how the setting relates to other aspects of a person’s life, the ‘meaning’ and interpretation of the situation by participants, and the familiarity of the participants with the settings” become essential to analysis of the experience. This perspective impacts methodology. If all aspects of a system are mutually defining, then an experimental design with dependent and independent variables becomes difficult to implement. Instead, the authors propound methodological principles that take into account both settings and context, seek “the ‘meanings’ of the events to participants,” and account as well for the role and perspective of the observer. These parameters suggest qualitative approaches that examine the structure and pattern of unfolding events.

This transactional philosophy is also reflected in a paper examining how people relate to nature in their home environment (Werner and Altman 2000). The researchers note how the transactional viewpoint forced them to think about “the social context of attitude and behavior change...about how people appropriate the physical environment and invest it with meaning.” The transactional viewpoint has emerged as a theoretical framework in the discourse of how people relate to nature vs. the built environment and, consequently, as a suggested methodology for the field of planning. In a discussion of the transactional approach as a proposed framework for the disciplines of landscape and urban planning, Hartig (1993) considers the transactional viewpoint critical to understanding the interplay between people and environment: “the process by which people shape and are shaped by their environments.” His discussion centers on experiences of the natural vs. the built environments, and the ways in which the experience of “natural” vs. human made environments are based on both evolutionary and sociocultural contexts. This reflects the Pollio and Heaps (2004) conjecture that nature experience can be

explained and reflected in both biological and sociological languages. While Hartig's survey focuses on the relevance of transactional theory to urban planning, it also illuminates the very individual quality of the nature experience, and the fact that it varies not only over time, but from event to event within the same individual.

Returning to the study of nature experience "in" nature (as opposed to the nature experience relative to the built environment), McIntyre and Roggenbuck (1998) emphasize the transactional aspects of nature experience, described as evolving in a constructivist way from interaction with the environment. "People to a large extent create their own experiences based upon past learning, their needs and selective focusing... Thus, the environment becomes the product of perception, not the cause (Ittelson et al. 1976)." Also using a transactional framework, Borrie and Roggenbuck (2001) used ESM (Experience Sampling Method) to examine aspects of the wilderness experience over time. Evaluating four aspects of wilderness experience (oneness/primitiveness/humility, timelessness, solitude, and care), they found that these varied over time, both feelings and cognition being dynamic, complex, evolving and multiphasic. Based on the emergent characteristics of a nature experience, the investigators chose to describe the nature experience as "transactional" – occurring between a person and the environment – and characterized by a changing focus of attention in any of five modes (suggested by Ittelson et al. 1976): self, others/social acceptance, task, nature, and emotion. Borrie and Roggenbuck found wilderness experiences involved "multiple states of mind, and both the mode of experiencing wilderness and feelings of connection were dynamic across time"; these changes displayed "a multiphasic pattern." They were also surprised to find that, for this particular study, the "highest focus for the visitors was on other members of their group... Focus

on self/introspection was on average low...feelings of oneness/primitiveness/humility, apparently so important to wilderness philosophers, was only of mid-level importance.” This unexpected strong social aspect prefigures findings of the current study. While examining themes in the experience of nature, Borrie (1995) writes of the “wilderness experience as process rather than outcome,” as does Beyer (1999), who notes that the nature experience possesses not only themes, but a dynamic, emergent quality.

In a paper challenging the prevalent “outcome” approach to measuring visitor experience (i.e., operationalized in descriptors such as “satisfactory”), Hull et al. (1992) argue that experience has emergent and dynamic qualities that can be examined using what they call an “experience pattern,” and that this varies across different groups of hikers (e.g., for some hikers the setting and characteristics of the hike affected their feelings of satisfaction; for a second group it did not). Changes in experience patterns of landscape, hike characteristics and mood influence satisfaction, were for some hikers also influenced by direction of travel on the trail and whether or not hikers reached their goal. Factors such as landscape beauty, mood, terrain, and distance to/from destination created a constantly changing and interactive experience. These results indicate that a nature experience is not only variable over time, but that individuals differ in their responses to landscape and to the process of moving through it. This conclusion highlights the importance of addressing individual experience and its variations when considering the human response to the natural world.

In a theoretical discussion of the tourism experience, Wearing and Wearing (2001) challenge the perception of tourist as a detached “observer” and “gazer.” They propose instead a postmodern concept of a dynamic self which is not separate from a landscape, but deeply

interconnected with it: "...we see the other as a world we are travelling through but at some stage that other becomes a part of ourselves." They argue that the tourist experience is "subjective, cumulative, embodied and emotional," characterized by "an 'I' which constructs and reconstructs the tourist experience in interaction with significant others, significant reference groups, and the generalized other..." Transferring this argument to the nature experience, one may argue that a visitor is not a discrete, disconnected entity walking through the woods (for example), but rather an embodied part of a dynamic, evolving event encompassing self, landscape, and social environment.

Thus the nature experience can be described as emergent and dynamic, the result not just of an individual observing a landscape (passive observation) but of an ongoing construction in which visitor, surroundings, and companions comprise a single evolving event or entity. Interpretation has in the past been perceived by both visitors and practitioners as an educational exercise in which information is transferred from a knowledgeable guide to a passive, if receptive, listener. However, if a visitor is an active constructor of a nature experience, and not a passive observer and recipient of information, what does this mean for the role of the guide and for the act of interpretation itself? The implications of these questions, particularly in light of the results of this study, will be addressed later in this document.

### *Nature Experience as Self-Change and Restoration*

Nature experience has been associated with changes that occur within the participant. These include a new awareness of something beyond the self (an Other, or universal purpose), a

new openness to experience and/or other individuals, an increased sensory and body awareness, and a new willingness to engage in introspection.

A qualitative study of two wilderness trips (Fredrickson and Anderson 1999) examined spiritual inspiration as an element of wilderness experience. The authors identified two very distinct ways in which trip participants related to the experience: 1) in an embodied way, “as if there was some deep connection between themselves and the natural world,” and 2) having a “relationship” to the natural environment, as if they were not a part of the actual setting. These results parallel in some respects the conclusions of a 2006 Hutson and Montgomery study, in which the investigators observed two kinds of ways in which nature guides related to nature: as an “integral part of the spiritual self,” or “interconnectedness-seeking,” in which participants sought sensory engagement and fulfillment. Dimensions of spirituality that emerged from the Fredrickson and Anderson data included concepts and descriptions such as Ineffable, Intangible, a “centering force,” heightened sensory awareness, and a feeling of timelessness. The respondents in a 1999 Beyer study describe “increasing permeability and expansiveness of one's habitual egoic self,” an experience of a whole self “without barriers, obstructions, or divisions...a sense of self inhering in nature and nature inhering in the self... a deep sense of harmony and peace with self and nature; and an identification of self with all of nature, with one's conception of God, and with the cosmos.” These perceptions were not limited to wildland experiences. In two cases, the participants spent time in sparsely-inhabited “wilderness,” but the third participant described a deep connectedness experience in her own garden. In addition, two of the cases involved short-term experiences (half-day or less), demonstrating that these effects are not confined to wilderness or longer-term immersion experiences.

Nicholls and Gray (2006) identified three conditions that were key to mediating the therapeutic qualities of a wilderness experience for troubled adolescents. The first the authors call “dropping the wall” (defined by participants as a defensive wall) in order to “let nature in.” “When the wall was dropped you just notice things more and you take everything in, the surroundings, the atmosphere with people, the noises...the view and things like that.” The second condition was a focus on process (as opposed to a daily goal). This created a feeling of relaxation and freedom from pressure. Teens in a 2001 Haluza-deLay study expressed the same sentiment that nature was a place free of stressful demands, a place for relaxation. The third condition the authors identify as “the right to choose,” the freedom to make a positive choice for mindfulness. These participant actions – dropping of defenses, focus on process, and a sense of active mindfulness – confirm the qualities of openness, freedom and reflection found in other studies.

In a review of spirituality and the nature experience, Heintzman (2010) points to research that explores the reasons that nature may affect spirituality:

Nature elicits a sense of wonder, awe and amazement (e.g., Fox, 1997; Grafanaki et al., 2005; Heintzman, 2000; Loeffler, 2004; Schmidt and Little, 2007); helps some people connect with their God or a higher power (e.g., Heintzman, 2000, 2007a, 2007b; Loeffler, 2004); provides a sense of peacefulness, calm, stillness and tranquility (e.g., Grafanaki et al., 2005; Fox, 1997; Heintzman, 2007a; Loeffler, 2004; Stringer and McAvoy, 1992); creates space to explore spirituality through reflection (Bobilya et al., 2009); and is powerful and therapeutic (Fox, 1997).

In a study of a river rafting experience, Arnould and Price (1993) describe three main organizing themes: communion with nature, connecting to others (“communitas”), and “extension and renewal of self,” facilitated by learning new skills, facing fear, and a willingness to experience the moment and the process of rafting a wild river. River guides, they demonstrate,

are important mediators of these themes, actively helping participants to create reinforcing narratives of communion, rejuvenation and personal growth. The authors also emphasize the importance of the guide's role in shaping overall participant experience (referring to guides as "impresarios").

Many studies that examine the nature experience involve longer-term "immersion"-type trips described above, lasting six days or more, and taking place in designated wilderness areas. But are these various themes – spirituality, communion, rejuvenation – also shared by the short-term nature experiences common to day visitors? The effects of short-term nature experience are frequently studied in urban parks or local reserves, often in the context of the restorative aspect of the nature experience. Attention Restoration Theory (ART, Kaplan and Kaplan 1989, Kaplan 1995) posits that the prolonged exercise of directed attention such as that engendered by the distractions of urban life creates mental fatigue; and that a nature environment, because of its inherent "soft fascination" (provision of rich visual and sensory stimuli) provides a way to alleviate this fatigue. In this model, a nature experience, even a local, short-term one, offers stress reduction and a restorative experience for both cognitive and affective processes. This effect has been used as an argument for the importance of natural preserves and landscapes, especially in a largely urban environment (an argument raised early by Fredrick Law Olmsted in 1870). White et al. (2013) surveyed 4,255 individuals about recent visits to a "natural environment" which included a very wide range of natural settings: farmland, urban parks, forests, countryside, and beach; these visits ranged in duration from a few minutes to a full day. They found that "visits to nature, in general, were associated with relatively high levels of recalled restoration." Longer visits correlated positively with a greater sense of restoration, as did

certain landscapes. A 2008 paper (Berman et al.), based on the ART, demonstrated the cognitive benefits of interacting with nature, finding that participants who were challenged in a “directed-attention” test, and directed to walk in a natural setting performed subsequent cognitive tasks more accurately than those who subsequently walked in an urban setting. The practice of shinrin-yoku (forest walking, or “forest-bathing,” Morita et al. 2007) showed a reduction in hostility and depression and an increase in “liveliness” among participants. Similar studies (Tinsley et al. 2002, Shin et al. 2005, Korpela et al. 2008) demonstrated the restorative value of nature places, specifically in a short-term experience such as a park visit or day hike. Thus, in the same way that wilderness immersion has been shown to motivate internal change, studies show that short-term nature experiences can also be restorative and mood-influencing.

Thus, nature experience has been identified as having elements that create change in self: restorative qualities, the facilitation of increased sensory awareness and engagement, a sense of openness and the dropping of psychological defenses, and feelings of spirituality.

### *Themes and Dimensions of the Nature Experience*

Nature experience has also been identified with common themes and dimensions, some of which (e.g., spirituality) overlap with the themes of change and restoration just described.

Pollio and Heaps (2004) asked undergraduates to describe situations in which they were aware of nature. The investigators identified four key themes that define the nature experience: Power and Scale, Danger and Safety, Beauty, and Connection/Alienation. The Power and Scale theme was characterized by issues of scale, abundance, vastness and size (both large and small). Danger and Safety, in addition to the eponymous descriptions, included words such as

“soothing,” “exciting,” and “calm.” Beauty referred not just to physical characteristics, but “sensual, spiritual or emotional” reactions, both positive and negative (e.g., “inspirational,” “infested”). Connection/alienation was indicated by expressions that described being related to nature or separate from it. The researchers speculate that the connection/alienation theme is a manifestation of E.O. Wilson’s “biophilia” hypothesis (1993) – the innate tendency of humans to value connection with the natural world (that being the originating landscape of our species, despite its current trend toward urbanization). With regard to the danger/safety dimension, the authors point to Ulrich’s 1993 complementary analysis, in which he speculates that there may be a “genetic predisposition” to fear aspects of nature such as lightning, snakes, etc., that posed a threat to early humans. Reviewing these biophilia/biophobia responses, they note that the biological bases postulated by Wilson and Ulrich mirror the experiential, phenomenological results of their own studies: “...the phenomenologist and the biologists do not hear different meanings, only that phenomenological meanings are couched in the language of everyday life whereas biological meanings are described in terms of genetic predispositions consistent with Darwinian theory.” In other words, the dichotomous themes identified by Pollio and Heaps support the hypothesis that how people experience nature (both positively and negatively) has a biological basis.

In an analysis of outdoor experience, McIntyre and Roggenbuck (1998) identified a similar dichotomous pattern in two broad categories of person-nature transactions: positive situations, in which nature was described as “awesome” and “beautiful,” and situations that entailed danger and obstacles, which generated apprehension and excitement. These results bear similarities to Pollio and Heaps (2004) and could be viewed as supporting their contention of a

biological basis for both nature affinity and fear of natural phenomena. The negative aspects of nature experience uncovered in these studies explain one key aspect of the nature guide's role: the protection and safety of visitors in a potentially dangerous environment (Weiler and Davis 1993, Davidson and Black 2007, Randall and Rollins 2009).

Using as a basis the work of classic American nature writers such as Aldo Leopold, Henry David Thoreau, John Muir, and Sigurd Olson, Borrie (1995) proposed six “aspects of the wilderness idea”<sup>7</sup>: humility, oneness, primitiveness, timelessness, solitude, and care. He then evaluated these categories as a basis for description of a wilderness experience using the ESM (Experience Sampling Method) and confirmed that they were, in fact, pertinent dimensions of the wilderness experience. (Borrie also demonstrated that response varies over time spent in the wilderness, an aspect that will be discussed later in this review.) It is interesting that similar themes emerge from other, phenomenological studies that are similarly inductive, but based on actual participant experience (Arnould and Price 1993, Borrie 1995, Geller 1995, McIntyre and Roggenbuck 1998, Beyer 1999, Pollio and Heaps 2004, Dutcher 2007, Vining et al. 2008). Not surprisingly, it appears that emotions and sensations captured and expressed by nature writers are representative in many ways of the personal nature experience.

Research thus reveals that the nature experience has themes and dimensions that appear in the works of classic American nature writers as early as Thoreau and persist in the experiences of contemporary nature visitors. The question of whether these themes persist in a guided interpretive nature experience is not addressed in these studies. However, the 2001 Borrie and Roggenbuck study mentioned earlier found that “feelings of oneness/primitiveness/humility,

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<sup>7</sup> Borrie's study specifically addresses “wilderness” as opposed to “nature.”

apparently so important to wilderness philosophers, was only of mid-level importance” and that participants in a wilderness trip were most highly focused on each other. The prototypical American nature experience emphasizes solitude (which, in fact, appears as a theme in several of the studies cited above), but many contemporary visitors experience nature in the company of others. How might the presence of others (including a guide), impact a nature experience? Do the themes and dimensions identified in these studies have implications for the role of the guide? Interpretive practitioners, particularly in areas with high visitation such as national parks, may find themselves attempting to convey nature themes (including silence, awe, and solitude) to groups of 30 or more. Is this an attempt doomed to fail, or can a guide’s acknowledgement of these themes sensitize visitors to their presence?

### *Nature Experience as Relationship*

Researchers have suggested that closeness to nature, and the nature experience, have qualities of a relationship, and can in fact be characterized as such. Schultz (2002) uses a graphical analogy featuring physical overlap as representative of an individual’s closeness to nature (IOS – the Inclusion of Others in Self scale). Beyer (1999) also employs a physical analogy, the image of actually “moving closer” to nature. Brooks et al. (2006) propose that connection to a nature place can be described as if that place were a true partner in a relationship, referring to “active construction and accumulation of place meanings.” Long-term relationships with the study site (Rocky Mountain National Park) were fostered by both physical and social interactions in the setting. Social interaction and social ritual in backcountry settings create shared meanings and common narratives. Sequestered from the stresses and distractions of everyday life, interviewees indicated that such settings also strengthened interpersonal

relationships and fostered openness, enabling them to “drop the walls and let the bullshit go and just have a talk.” Over time, identity became defined in relation to this particular place: “actual behaviors and thoughts were directed toward knowing the self in relation to place.”

Schroeder (2007) examines the human-nature relationship through the lens of gestalt psychology, focusing on how a sense of the human-nature relationship is conveyed in the gestalt quality of place, and how this may give rise to a feeling of moral responsibility toward nature. People’s favorite natural places have a quality that he identifies as “good gestalt.” This is not intrinsic to the place itself, nor is it a purely subjective phenomenon. Schroeder argues that it arises from a discourse that occurs between place and individual. Based on open-ended surveys, the author suggests that nature is perceived as having intrinsic order, coherence, beauty, serenity, and value that is not attributable to “human intention or design,” as well as “intrinsic rightness.” The author also cites phenomenological writings that imply “a connection between the experience of wholeness of place and a sense of moral obligation” (Seamon, 1993, Tuan 1993).

As discussed in the Introduction to this document, a key motivator for much of the research on nature experience and connection has been concern for environmental stewardship. Schultz et al. (2004) demonstrates that concern for the biosphere correlates with feelings of nature connectedness. He emphasizes the importance of nature connectedness in evaluating attitudes about environmental issues. “At a psychological level, the degree to which an individual associates him- or herself with nature is directly related to the types of attitudes that s/he develops.” For Schultz, this confirms that environmental education needs to foster a sense of connectedness. Citing literature that demonstrates “the transforming ability of encounters with nature,” he concludes:

Perhaps one of the ways in which encounters with nature can transform an individual is through a sense of connectedness. Similarly, environmental education has long sought to promote pro-environmental attitudes and behaviors, but has achieved only limited success (Zelezny, 1999). Perhaps, educational activities that promote a connection with nature will have longer lasting effects?

One of the “educational activities” championed by many organizations as a way to promote connection with nature is interpretive programming. Schultz’s suggestion that a feeling of connectedness may be achieved through educational activities supports this approach. The next section examines how the goal of stewardship dovetails with the principles and practices of the field of interpretation.

## **Interpretive Theory and Nature Audiences**

### *Inspiring Stewardship*

As early as 1945, interpretation was identified as a way to inspire stewardship of protected parklands (Mackintosh 1986). In order for parks to fulfill their mission of preserving natural wildlands “to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations,”<sup>8</sup> they must inspire public protection. The National Park Service (NPS) comments on the website that introduces and supports its Interpretive Development Program (<http://idp.eppley.org/>) “People must *care for* what they first *care about*” [italics in original]. The association of interpretation with stewardship is an increasingly significant element in interpretive programming. The National Association for Interpretation (NAI) describes the need to transform audiences “from being visitors to being stewards, from being users into being advocates” (2002). Larsen (2002)

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<sup>8</sup> National Park Service Organic Act, 16.U.S.C. 123 and 4, Aug.25, 1916

addresses the importance of “a relationship between interpretation and resource management, because ...the audience determines if they will care enough about the resource in order to support the care for the resource...Resource management and interpretation have a great deal in common. They each apply different knowledge and skills to the preservation of a resource.” Implicit in these statements is the conviction that interpretation can and does create wildland stewards. But a direct relationship between interpretation and stewardship is complex and challenging to demonstrate.

The NAI defines interpretation as “a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in a resource.” In 1956 Freeman Tilden laid out the basic principles of interpretation in his seminal book, *Interpreting Our Heritage*. He maintained that interpretive programming must relate to the visitor; and that interpretation is not the presentation of isolated facts, but must provoke the visitor, reveal meanings, and proffer a holistic, rather than a piecemeal, viewpoint. For more than half a century these tenets served as the foundation for interpretive programming. Almost 40 years later, Ham (1992) developed his own set of interpretation guidelines: interpretation should be enjoyable, relevant, organized, and represent a unifying theme. More recently, researchers have been examining these principles in an effort to identify the most effective interpretive techniques.

If the goal of interpretation is to create connections between the audience and a resource, one of the first questions that arises is, What is the effect of interpretive programming on visitors to natural sites? Does it create connections of any kind to a specific site or nature as a wider concept? Does it generate the behavioral changes required for stewardship? Does it have any

effect at all? The next section examines the relationship between interpretation, cognition, and behavior in the context of nature experience.

### *Cognitive Effects: Learning in nature*

Cognitive studies on nature interpretive experiences conducted by Doug Knapp have demonstrated that personal interpretive programs can and do promote knowledge retention. In a qualitative study focusing on factors affecting long-term memory storage (Knapp and Yang 2002), Knapp identified novelty of topic and setting, visual images, and activities as factors that promote long-term retention of interpretive programs (in this case, a program on bats). A similar study involving an interpretive program about white-tailed deer (Knapp and Benton 2005) showed that memories were recalled two years after the program and pointed to similar factors affecting recall: visual recollections, memories of novelty items (in this case antlers), and the interpreter (remembered as both interesting and amusing). The “richest descriptions” were related to exercises that actively involved the participants. A heritage program study (2006) provided similar findings. On the basis of this and additional research, Knapp developed a learning model for interpretive programming based on concepts of episodic and semantic memory (Tulving and Donaldson 1972, Tulving 1983). In Knapp’s model, a well-designed interpretive program creates episodic memories (remembered experiences) that ultimately transform into semantic memories (knowledge) which are abstract and relational. He argues that three key variables in Tulving’s system aid in episodic memory and should therefore be key to interpretive programming: active delivery, personal relevance, and repetition.

While these studies demonstrate the effectiveness of nature interpretation in long-term cognitive recollection, they do not address behavioral or attitudinal changes. An earlier study (Knapp and Poff 2001) examining the effects of an interpretive nature experience designed for fourth graders revealed slightly different results: limited cognitive and behavioral impacts from an environmental interpretive program (after four months), but a significant positive effect on place connection. After four months, students recalled vividly and accurately only the aspects of the experience that involved a predator-prey game, and reported as well strong positive feelings towards the site. This supports Knapp's point that activity is an important part of effective interpretation. Passively delivered information associated with the program, such as ecological concepts, wilderness information, and environmental issues information, was "vaguely recalled at best and in many cases misunderstood or misinterpreted." Also, students were less likely to engage in environmentally responsible behaviors as time passed after the trip. Thus, the longer-term effects of the program were place attachment and recollection of game activities, as opposed to environmentally responsible behaviors, which declined over time.

A longitudinal study of fourth through seventh-graders in a residential environmental education (EE) program (Stern et al. 2008) measured program outcomes for a variety of factors: stewardship, interest in discovery, ecological place awareness, and connection with nature. Connection with nature was evaluated by an index based on comfort in the outdoors, feeling "a part of nature" (rather than separate from it), behavior involving active observation in natural settings, and interest in outdoor activities. While measurements conducted immediately after the program showed success in all outcomes, including nature connectedness, a three-month follow up survey indicated that students' interest in discovery and their connection with nature faded

over time, although place awareness and commitment to environmental stewardship remained significant. In this case, it should be noted, teachers initiated extensive follow-up activities involving stewardship behavior at the school. Another exception was the “comfort” factor of nature connectedness. Students’ comfort in the outdoors remained significantly higher after three months. This research involved an immersion EE program, as opposed to the short-term contact characteristic of interpretive programs. But it points to a transient quality of nature connectedness, and the potential importance of follow-up in enhancing outcomes. Other results of interest were that larger groups showed significantly more positive outcomes (a result not anticipated by the researchers) and longer experiences generated greater effects.

In a 2005 paper, Brody formulated a theory of learning in nature based on his own research (Brody et al. 2002) and studies on learning in informal situations (Falk and Dierking 2000). As Brody describes it, “meaningful learning in nature is a result of direct experiences over time, in which personal and social knowledge and value systems are created through complex cognitive and affective processes.” In this model, three action based factors (acting, thinking, and feeling) interact with four variables (the physical setting, the individual, shared social group elements, and time spent) to create a learning outcome. The model predicts that for meaningful learning to occur: (1) action and interaction must occur – in the natural setting, with others, and over time; (2) learners should be processing information received and integrating it with direct experience of the site, previous knowledge, and the impressions and ideas of others sharing the experience; (3) learners should be aware of existing feelings, values, beliefs, and emotions, be prepared to assimilate and accommodate new and shared experiences, and reflect on changes in their attitudes and beliefs over time.

This is a complex mandate for both learner and interpreter. It requires self-awareness and openness in the learner and, by implication, the facility in the guide or interpreter to evoke these qualities while simultaneously conveying information, managing activities, and ensuring the safety of visitors. It is not an impossible mandate – many interpreters and guides instinctively achieve this. But it requires a willingness in both the learner and the interpreter to explore new experience and change attitudes and beliefs, a mandate that is not quite so explicit in other models. Organizations can and do set standards and expectations for guides. But although the ideal learner may indeed be self-aware, willing to actively share experience, and explicitly open to new attitudes and beliefs, it may be unrealistic to have such high expectations of all visitor-learners. A practical model for learning in the field needs to account for the exigencies of field interpretation and the varying interests and capacities of visitors.

#### *Examining the Nature Interpretive Experience: Personal interpretation*

Personal interpretation – the interpretive process mediated live and in real-time – has been demonstrated to be a preferred form of interpretation (compared to signage, audio tours, brochures, and films), as well as a positive factor in visitor experience. Intellectual and emotional connections were the focus of a survey conducted by Coble for the National Park Service (2005). Its purpose was to measure interpretive outcomes (defined by Coble as “connections”) in a cross section of national park sites, including both heritage and nature parks. In Coble’s study, which evaluated the impact of interpretive offerings that included activities, tours, exhibits, signage, films, and brochures, personal interpretation provided the “most meaningful” onsite interpretive experience: “Ranger-led programs far surpassed any other program type as respondents’ most meaningful onsite interpretive experience.” Respondents

who participated in ranger-led programs were most likely to form both intellectual and emotional connections to the meanings of park resources. Park films were also significantly associated with favorable interpretive outcomes. In addition, key factors that Coble identified in the success of interpretive offerings were visitor onsite experience and the personal qualities and characteristics of the visitor. “Onsite experience” included such factors as interpretive offering, respondent group size and composition, and location of the survey; visitor characteristics included reason for visit, life experience, and demographics. Coble points out that while certain factors are beyond the control of park managers, others, such as type of interpretive offering and appeal for target visitor audience, can provide practical guidance on how managers should most effectively allocate interpretation budgets. Her study also emphasizes the value of personal interpretation, a subject of ongoing discussion in the NPS as well as the interpretive community<sup>9</sup>.

With the same issue of audience preference and appeal in mind, Yamada and Knapp (2009) conducted a study designed to measure adult visitors’ interpretation preferences at a nature park in Japan. Eighty percent of respondents indicated that they preferred viewing exhibits accompanied by an interpreter, while viewing exhibits without the presence of an interpreter was preferred by just 22 percent of respondents. The most favored interaction during the visit was speaking with an interpreter. Although it could be argued that cultural differences play into this outcome, results of studies conducted in the U.S. and other countries similarly point to contact with a naturalist or guide as contributing significantly to visitor satisfaction during a nature experience. Morgan et al. (2003) examined the effect of user fees charged for a naturalist-guided canoe tour in California. The results indicated that the naturalist increased

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<sup>9</sup> Vaughn, Sam. 2004. It's a Matter of Balance. *Journal of Interpretation Research* 9, no. 2: 62-64.

visitors' appreciation of the resource and satisfaction with the experience, despite the fee charged. In an Australian study (Beckmann 1989) the two "most enjoyed" aspects of natural park visits were specific experiential components (i.e., being out at night, discovering rock pools) and the presence of a ranger-interpreter. A 2003 NPS report<sup>10</sup> on visitor interpretive media usage and preference indicated that park brochures and visitor centers were the most used interpretive offerings: 62 percent of visitors used brochures and 54 percent used visitor centers. Only 22 percent of visitors participated in interpreter-led programs, but they ranked highest in quality of all interpretive offerings and also received a high importance ranking. Although they do not examine the effect of the interpretive experience on connection (as Coble does) these studies demonstrate the very high value that nature park visitors place on the presence of an experienced naturalist guide, and the overall impact that it has on visitor experience.

A more in-depth examination of the interpretive experience is provided in a phenomenological study (Barrie 2001). In a series of interviews involving visitors to both heritage sites and nature parks, Barrie identified three major elements that define a "meaningful" interpretive experience: (1) personal (existing in the visitor); (2) site (elements influenced by interpretive personnel, such as topic, design, appeal to the senses, characteristics of the interpreter, ability to experience the site for oneself, etc.); and (3) outcome (fact acquisition, understanding, awe, remembrance, or no impact), with each element possessing several sub-categories. The personal and outcome elements are factors also identified by Coble in her 2005 study, and "personal relevance" is one of Knapp's recommended strategies for successful program recall. Barrie also discovered that certain elements were linked together, suggesting

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<sup>10</sup> Forist, Brian. *Visitor Use and Evaluation of Interpretive Media*. National Park Service Visitor Services Project. National Park Service, Dept. of the Interior.

patterns in the way visitors experience a meaningful interpretive program. For example, personal interest was linked to program topic, topic to awe, and authenticity (seeing for oneself) to understanding. These findings reinforce Tilden's proposition that successful interpretive programming must relate to the visitor, and also support his point about authenticity in his definition of interpretation, "...an educational activity which aims to reveal meanings and relationships through the use of original objects"<sup>11</sup> ("original objects" representing authenticity and the impact of seeing for oneself).

Hill and Cable (2006) argue that interpreters need to understand authenticity and its role in interpretation, and that "an experience might include multiple types of authenticity." Discussing authenticity in the context of a nature setting, they point out that while ecotourism and outdoor recreation are based on "real" places (an actual rainforest, mountain, etc.), a personally "authentic" nature experience can also be found "in a greenhouse or conservatory: hues and shades of greenery, smells of living organisms, sounds of actual tropical birds." In other words, individual perceptions of "authentic" vary, and a visitor may perceive as authentic an experience or object that an interpreter or naturalist considers artificial. Therefore, they contend, interpretation should not necessarily shun commercialism or commercially constructed experience if it helps the visitor create meaning. This assumption presents interesting implications for nature interpretation: how effective are representations of objects or experiences (a replica of a cougar skull, a dramatic narrative of a flood event, a reconstruction of a rain forest), relative to the actual thing or experience itself? Barrie's findings indicate that "seeing for oneself" is a major element of a meaningful personal interpretive experience, while Hill and

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<sup>11</sup> Tilden, Freeman. 1977. *Interpreting Our Heritage*. Third Edition. Chapel Hill, North Carolina: University of North Carolina Press. p8

Cable suggest that authenticity lies in the beholder. If this is the case, then the best way to determine what is “authentic” is to ask visitors themselves.

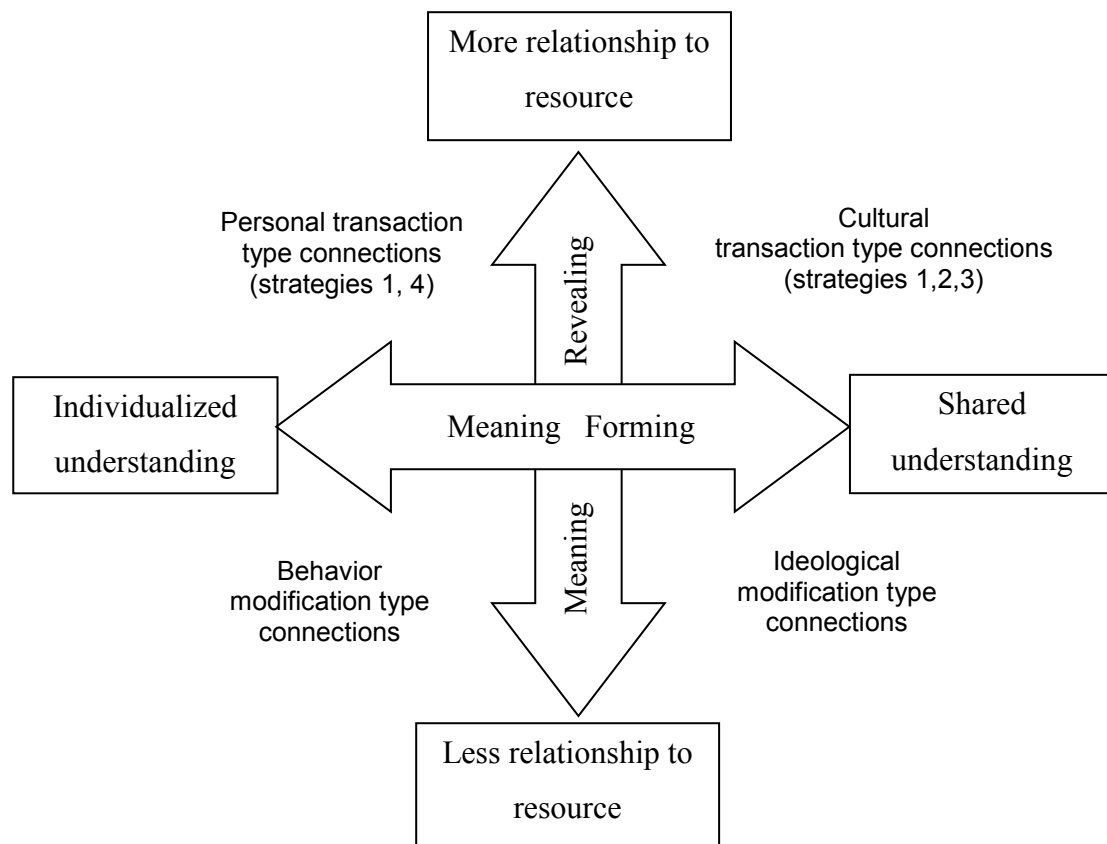
The studies above examine interpretation from the point of view of the audience experience. The set of articles that follow look at the nature interpretation experience from a practitioner’s vantage point.

### *Interpretive Practitioners: Facilitating meaning and connections*

A 2003 study (Chen) focuses on personal interpretation specifically in the NPS, examining how interpretive practitioners create opportunities for connections, which is defined as “a link between visitor experience/interests and a meaning of the resource,” and also, borrowing an NPS definition, “moments of intellectual and/or emotional revelation, perception, insight or discovery related to the meanings of the resource.”<sup>12</sup> Chen presents the following framework model for the interrelationship of meaning, interpretation, and connection (Figure 2-1).

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<sup>12</sup> National Park Service (2001) Nodule 103 Worksheet: Definition of Success – Effective interpretive talk – Self assessment. Interpretive Development Homepage. [HTTP://www.nps.gov/idp/103/worksheet.html](http://www.nps.gov/idp/103/worksheet.html)



*Figure 2-1 Conceptual Framework of Meanings, Interpretation and Connections*

Reprinted with permission from Chen, Wei-Li Jasmine. 2003. "The Craft and Concepts of Interpretation: A Look at How National Park Service Interpreters Reveal and Facilitate Opportunities for Connection." PhD Diss., Forest Resources Science, West Virginia University.

places different categories of connections and connection opportunities in the resulting quartiles. Within this framework, increased revelation of meaning (Y-axis) leads to a deeper relationship to a resource; the type of connection created depends on whether the meaning is formed from an individual or common understanding (X-axis).

As part of the same study, in an analysis of 197 "units" (interpretive talks or writing products), Chen identified four strategies that interpreters use to connect visitors with resource meanings and places these four strategies within her model. The four strategies are: (1) developing unexpected links to a resource (e.g., an oyster shell in an unexpected location as an

indicator of the impact of rail transportation in the 19<sup>th</sup> century); (2) unlocking layers of meaning; (3) deconstructing myths and popular concepts; and (4) using word pictures (rich visual descriptions) to create a holistic experience and understanding.

Using Chen's model, the interpretive strategies of developing unexpected links and word pictures are ways to facilitate relationship to a resource based on individual understanding. Developing unexpected links, unlocking layers of meaning, and deconstructing myths are strategies which rest on cultural or shared understandings. In this architecture, strategies based on behavioral and ideological modification (e.g., stimulated, response-centered approaches to meanings) deliver less meaning, and therefore, a less significant relationship with a resource, than strategies based on revealing meanings. This property of the model becomes key when connection is the variable that interpreters are attempting to motivate in visitors: meaning mediates connection/relationship. However, it should be noted that in Chen's model it is the interpreter or institution (in this case the NPS) that determines the desired meaning, as opposed to the visitor. In this respect, the model is mute on the issue of constructive learning – the concept (based on Piaget) that individuals construct meaning by assimilating new information into existing mental models. An institution may assign a revealed “meaning” to a resource, but visitors/learners will integrate this meaning directive into their own world construct, in their own way, and in a fashion that cannot be controlled by the institution. In this sense a “resource meaning,” as defined by an institution, may assume a very different aspect when internalized by individual visitors, even when interpreters deploy the strategies commended by Chen.

With a similar goal, an Australian focus group study of 30 cave guides and managers (Davidson and Black 2007) sought to identify practices and principles that the guides felt were

essential to successful interpretation. The participants validated Ham's four principles of interpretation (1992): (1) visitor enjoyment; (2) relevance to the audience and the resource; (3) organization; and (4) presence of unifying key theme or message. The participants also identified five additional principles: (1) group management – the guide strives to recognize each person both as an individual and a group member; (2) protection – visitors should feel safe, and the interpretive environment itself should be safe; (3) two-way communication – the guide should be an active listener, not just a lecturer; (4) holistic – the program should link the site to broad ecological, geographic or social elements; and (5) emotion – the guide facilitates an experience that has emotional dimensions. This last element, emotion, is an explicit part of the NAI definition of interpretation, a process which “forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource.” However, emotion was viewed by the guides not just as a means to the end goal of connection, but as a core outcome in and of itself:

Cave guides placed a considerable importance on delivering an emotional experience, rather than an intellectual or learning experience...The guides did not perceive providing an emotional experience as a tool or method of enhancing the tour, but as their *core agenda* [italics in original]; the guides wanted the experience to be a “feeling” experience...what emerged from the voice of the profession is a different emphasis and articulation of “emotion” that until recently was subdued in the existing literature.

Strategies that the guides used to facilitate an emotional experience included encouraging visitors to a “complete aesthetic experience” that included temperature, smell, sound, and touch. One of the guides spoke of using “emotional language.” This phrase was not defined in the study report, but the fact that it was used demonstrates an intent by the speaker to complement the cognitive.

The Davidson and Black study suggests a different approach to interpretation from Chen's. The cave guides study focuses on emotion, as opposed to meaning. An interpretive methodology and recommendation based on the Chen study emphasizes the importance of meaning-making, and its proposed impact on connection. NPS interpretive theory is founded on resource meaning, and the visitor's relationship to meanings. Since Chen examined NPS practitioners, who are measured according to NPS standards, it's not surprising that the practitioners in her studies adhere to this methodology. A methodology based on Davidson and Black would focus on the emotional dimensions of nature experience.

A 2004 study (Knapp and Benton) assessed the elements and principles that interpreters in five U.S. national park units identified as important to the success of an interpretive program. The researchers also reviewed the programs themselves. The principles most consistently cited as important by the interpreters were: (1) relate to the visitor; (2) attempt to use innovative techniques; (3) meet basic programming needs; and (4) community outreach. "Relating to the visitor" implied understanding the audience, and connecting the visitor to the park resource. "Innovative techniques" for the interpreters meant avoiding traditional methods such as lecturing, and offering instead a variety of experiences and opportunities for interaction. However, virtually all of the programs observed involved didactic, one-way presentations. According to the researchers, "visitors had few opportunities to offer their own responses to interpretive messages," and the researchers describe a "lack of 'two-way dialogue'". These results suggest a significant gap between what interpreters believe and the strategies they are taught to employ (active learning methods), and what they actually do in the field.

## *Summary*

These studies of how interpretive practitioners help visitors make meaning demonstrate the high value that nature park visitors place on the presence of an experienced naturalist guide, and the impact that a guide/interpreter has on visitor experience. Personal interpretation can increase both intellectual and emotional connectedness, and can be an effective medium for learning. Interpretive techniques that have been identified as effective in facilitating learning and connection-making include interactive programming, demonstrating personal relevance to the visitor, concept repetition, “authenticity,” sensory involvement, the use of “word pictures,” and revealing unexpected links and layers of meaning. These are methodologies that view the visitor as learner and potential steward. They involve knowledge transfer, emotional involvement, personal relevance, and the understanding and acceptance of common meaning. In the section below I review the visitor nature experience from the perspective of the tourism and leisure industry.

## **Tourism and Leisure**

From the tourism and leisure perspective the nature visitor is a consumer, and an experience is a product within an “experience economy” (Pine and Gilmore 1998). In a review of literature on the nature-based tourism experience, Vespestad and Lindberg (2011) refer to such an experience as being a “product” with “value,” and define a nature-based tourism experience (as opposed to a nature-based experience) as one associated with commercial interest. While the interpretive field focuses on cognitive and recollection outcomes and the forming of connections, the tourism/leisure discourse examines how providers of experience can offer “value” to consumers (i.e., the visitors having the experience). In exploring the meaning of value in a nature

experience, the tourism discourse addresses “extraordinary experience” and “magic”; authenticity and the concept of “staging”; the phenomenon of attention; and the mediating role of the guide in these contexts. I examine each of these in turn.

### *Experience as Value*

Pine and Gilmore claim that a new kind of economy is emerging from the service economy: the “experience economy.” This occurs when an organization “intentionally uses [its] services as the stage...to engage individual customers in a way that creates a memorable event.” The authors present a model with four economic categories: commodities, goods, services, and experiences. Their argument centers on the difference between the provision of a service and the provision of an experience, and the economic importance of this distinction. “Commodities are fungible, goods tangible, services intangible, and experiences *memorable* [italics in original].” Experiences are, further, something that a customer is willing to pay for, or pay extra for. In the authors’ explanation, commodities, goods, and services are all external to the buyer. An experience, however, is:

...inherently personal, existing only in the mind of an individual who has been engaged on an emotional, physical, intellectual, or even spiritual level. Thus, no two people can have the same experience, because each experience derives from the interaction between the staged event (like a theatrical play) and the individual’s state of mind.

In the Pine and Gilmore model, a memorable experience requires five key elements: (1) an overarching theme; (2) positive cues that reinforce the theme; for example, a souvenir, décor, or even an audio cue (Rainforest Café hosts are instructed to tell customers, not “Your table is ready” but “Your adventure is about to begin.”); (3) elimination of negative cues (anything that

“diminishes, contradicts or distracts from the theme”); (4) memorabilia (souvenirs); and (5) engagement of all five senses. While the authors’ focus on commercialism may seem disconcerting and inappropriate for a natural venue, it is also true that one of the goals of a nature interpretive experience is to engage and motivate the visitor; this application will be discussed further in the section below. In addition, at least three of the elements listed above (overarching theme, behavior/information that supports the theme, and engagement of the senses) will be familiar to both interpretive practitioners and readers of the interpretation classics by Tilden, Ham, and Beck and Cable.

### *Magic and Extraordinary Experience*

The term “extraordinary experience” (Arnould and Price 1993, Schouten et al. 2007) is used from both a tourism and consumer marketing point of view to describe experiences that have not merely positive, but transformative qualities, and create permanent changes in belief or attitude. In addressing customer experience and “brand community,” Schouten refers to this kind of experience as “transcendent,” describing it as “characterized by feelings such as self-transformation or awakening, separation from the mundane, and connectedness to larger phenomena outside the self.” His particular study surveyed participants in an event aimed at recent Jeep purchasers (“Camp Jeep”). But as we have seen, these are qualities common to descriptions of nature experience, as described earlier (Arnould and Price 1993, Beyer 1999, Fredrickson and Anderson 1999, Nicholls and Gray 2006, Brooks et al. 2006, Korpela et al. 2008). It seems irreverent to apply the same criteria to a nature experience and a marketing event, but in the touristic arena, which is driven by commercial interest, these feelings are indicators of value, with “the power to shape or influence customer’s attitudes and behaviors”

(Schouten et al. 2007). For Schouten, Vespestad and Lindberg, as well as Arnould and Price, such experiences share aspects of both flow (Csikszentmihalyi 1975) and peak experience (Maslow 1968). Löfgren et al. (2006) refer to the concept of “magic and spiritual mediation” as important components of the experience economy; Vespestad and Lindberg point out that nature can “represent the backdrop for both magic and spiritual encounters.”

In a study of extended wilderness river trips, Arnould and Price (1993) articulate the role of the river guide as an impresario who helps participants “transform experiences into treasured, culturally construed memories of personal growth, challenges overcome, teamwork, and perseverance.” As the eponymous article title indicates, the authors report the experience from the participants’ points of view as “magical” and “extraordinary,” and river guides are key mediators of this experience.

The guide role is a demanding one fraught with illusion and role conflict. In contrast to familiar transports of fancy provided by performing artists and theme parks, river guides offer commercially a magic that comes from an interpersonal dynamic developed over an extended interval of time in a seemingly authentic environment. They give their customers something they do not know how to ask for, but something that makes customers very happy.

The authors’ use of terms such as “impresario” for the guide role, and “seemingly authentic” for a nature environment, highlight another aspect of the tourist economy: experience as entertainment, and the issue of authenticity.

### *Authenticity and Staged Encounters*

MacCannell (1999) characterizes tourism as a form of pilgrimage, a search for the authentic:

The rhetoric of tourism is full of manifestations of the importance of the authenticity of the relationship between tourists and what they see: this is a *typical* native house; this is the *very*

place the leader fell; this is the *actual* pen used to sign the law; this is the *original* manuscript; this is an *authentic* Tlingit fish club; this is a *real* piece of the *true* Crown of Thorns [italics in original].

Arnould and Price also refer to the desirability of authenticity. They describe “consumers of extraordinary experience” as searchers for authenticity, for spontaneous and unrehearsed experiences. In a paper on the tourist nature experience, however, Markwell (2001) argues that authenticity is inevitably compromised by the touristic experience. “Tourist-nature interactions are constructed and mediated by the tourism industry and associated agencies – nature within tourism is predominantly experienced through contrived or mediated encounters, with the guided tour itself a prime source of mediation.” In his study on nature tourism at three sites in Borneo, Markwell concludes that the less visitors are physically separated, controlled, and bounded (by guides, physical barriers and/or programmatic tour agendas), the more “liminal” their experience.

A greater ‘congruence’ of mind and body seemed more evident during those times when the tourists were experiencing places relatively free of the mediation provided by the tourism industry, when fantasy and imaginative interpretations of place were evoked... These occasions were characterized by a degree of playfulness and spontaneity which was not so apparent at the more highly structured sites in which physical modifications acted to control and regulate tourist movement much more overtly.

Markwell argues that the promoters of the tour experiences under examination advertise a “first-hand, ‘unstaged’ (and by extension, ‘authentic’) encounter with nature,” but that ultimately the most authentic encounters, as related by the visitors themselves, are those involving the least mediation.

On the other side of the argument are those who advocate the value of “staging,” or programming experiential outcomes. Ellis and Rossman (2008) describe staged encounters as “economic offerings in which guests exchange something of value from a variety of opportunity

costs to receive a valued emotional or motivational experience...Often these experiences yield cherished memories that are of significant long-term value to participants.” The showcase example of staged encounter is a Walt Disney theme park, but the authors cite many other kinds of experiences, including children’s camps, as well as heritage site interpretation. The scaffolding for the arguments of Ellis and Rossman is the seminal article in the Harvard Business Review (Pine and Gilmore 1998) establishing the concept of an “experience economy” and the “staging” of experience.

In their discussion of staging in the context of tourism and recreation, Ellis and Rossman point out that these criteria share important commonalities with principles of successful interpretation as developed by Tilden; for example, a successful interpretation should have a theme and should also engage the senses. Applying Pine and Gilmore’s principles, they present an integrated model for providing recreational experience that, in addition to providing a theme and sensory engagement, includes customer service and quality management. In this model, elimination of negative cues translates as “interpersonal performance” – the helpfulness, enthusiasm and courtesy of staff. Provision of “unexpected value” is also an element, which they equate with Pine and Gilmore’s provision of memorabilia (calling it “intangible memorabilia”), and includes behaviors such as praise and expressions of empathy. In this way, the Pine and Gilmore model, developed with corporate goals and consumer behavior in mind, can be applied to recreational activities.

This raises the question, to what extent does staging jeopardize the concept of authenticity? What characteristics of staging are shared by interpretation, and what can be learned by applying staging principles to nature interpretation? Barrie (2001) demonstrates that

in a meaningful interpretive experience, authenticity is linked to understanding, implying that some form of “authenticity” is critical to meaning-making; Tilden (1957) cites the value of “original objects.” Hill and Cable (2006), however, maintain that an experience might “include multiple types of authenticity.”

It can be argued that an authentic nature experience can’t really be “staged”; Vespestad and Lindberg acknowledge that an uncontrolled natural environment makes the provision of experience “value” challenging. On the other hand, guide-led activities such as hikes to a beach timed to coincide with the sunset, or ranger talks timed to coincide with certain animal activities, can be defined as “staged,” to the degree that an experience is being created that might not happen without the guide’s mediation. In truth, organizations that provide a nature experience (e.g., nature centers, parks management, private tour operators) rely on the fact that visitors sign up for an excursion with the expectation that the guide will help to facilitate, if not guarantee, such an experience.

Ek et al. (2008) advance the staging paradigm proposed by Pine and Gilmore to yet another level. Contending that the “performance” metaphor implied by staging reduces visitors to a passive role, they argue for a dynamic model that views tourists and visitors not as an audience, but as fellow performers in the experience. To accomplish this, they claim, requires research on “how tourists actually experience – or perhaps better put, *do* [italics in original] – tourism.” They refer to tourists as “co-designers” of their own experiences, and active co-designers as well of the places that they visit. In this respect, these authors in the recreational dimension are proposing a transactional model, discussed earlier in the context of a purely

nature experience: an emergent, dynamic phenomenon in which setting, visitor, and events are not separate, but comprise an interrelating whole.

### *The Role of Attention*

In a 2005 review, Ooi proposes a way to address the challenge of “managing” the tourist experience by controlling focus of attention. Those who “sell experiences” (tour destinations and operators) “assume that experiences can be managed and packaged, so that tourists will only be offered exciting and memorable experiences.” But this assumption is untenable, argues Ooi, for three reasons: (1) experiences arise from the social and cultural background of individuals, which vary. “Tourists’ different interests and backgrounds lead to diverse interpretations of a single tourist cultural product. How is it possible to offer a single product that will interest and excite all customers?” (2) Experiences are multi-faceted, arising from activities, the physical environment, and social meanings of activities; people doing the same activity will have different experiences. (3) Experiences are existential and embodied, personally felt, and “can only be expressed...how can the internal psychological and cognitive functions of tourists be managed, so that the tourism product induces only pleasurable experiences?”

Ooi’s proposed solution lies in the role of “mediators” (tour guides, tour operating organizations) as managers of tourist attention. Visitors with different cultural and social backgrounds and varying personal experience pay attention to different aspects of the same experience. Mediators advise visitors on what to notice and how to “consume tourism products.” Acknowledging the role of the mediator “makes it possible to discuss the convergency of experiences among a seemingly unmanageable group of consumers.” Ooi likens mediators to

priests, in the sense that they create a unified “congregation” which is taught reverence and respect for a set of sites, sights, and “relics” (gifts and souvenirs). Mediators, then, are guides through what Ooi calls the “experiencescape,” directing the visitor through a setting with many competing elements, and thus shaping the experience based on a set of commercial or organizational mission goals. While not highlighted in interpretive literature, the act of directing visitor focus and attention is an important aspect of nature guiding and interpretation. In addition, the concept of creating a “congregation” from a “seemingly unmanageable” group, using the idea of directed focus, could be one way to resolve the challenge of guiding groups with mixed levels of expertise.

### *Summary*

Examining experience from a consumer and commercial viewpoint, the tourism and leisure literature addresses the need to create “value” in experience in order to satisfy touristic consumers. This can be accomplished by “staging,” and by the provision of “magical” and “extraordinary” encounters. This model of experience places the guide in the position not just of mediator, but of performer and “impresario.” In addition, it raises the issue of authenticity: if tourism (including nature tourism) is a search for authenticity, then what does the presence of the tourist – not to mention the application of “staging” concepts – mean for consumers of “authentic” experience? To what extent do nature guides and interpreters (consciously or not) deploy aspects of staging (for example, by setting the climax and turnaround point of a nature hike at a beach sunset, as occurred in the current study)? Furthermore, how does the interpretive activity of focusing visitor attention shape visitor experience? These issues and questions from

the tourism discourse are relevant to interpretation, but are not often explicitly addressed in the interpretive literature.

## **Conclusion**

The literature reviewed in this section demonstrates that nature experience is dynamic and emergent, created and shaped by the participants themselves. Nature exposure creates changes in the self, facilitating both sensory and egoic openness, feelings of spirituality, and feelings of restoration and rejuvenation. Nature experience involves such themes as power and scale, beauty and danger, awe, humility, and oneness. It also has relationship qualities, dimensions of closeness and connectedness. Against this experiential setting, studies suggest that facilitating learning in a nature context – helping visitors to make meaning – is a complex process involving the use of cognitive and emotional strategies by the interpretive guide, and an openness to concepts and experience on the part of visitors. Tourism and leisure literature reaches a similar conclusion from the very different perspective of value, and defines the role of tour guide as experience mediator. To better understand this complex personal, multifaceted process, and to metaphorically open up the “black box” of interpretation, requires examining the experience of visitors on an interpretive nature excursion, in much the same way that researchers have examined the experience of visitors on unaccompanied nature trips. This suggests as an initial step a qualitative approach designed to educe from visitor experience its key qualities, elements, issues, and themes.

## **Chapter 3: Methods**

The purpose of this study was to explore the role of interpretation and interpreter in a guided nature experience by opening the “black box” of interpretation to examine the experience of both visitor and guide. As a metaphorical and methodological window into the black box, I chose a qualitative, interview-based strategy based on semi-structured interviews and researcher observations. This strategy was designed to elicit the emergent qualities of the experience by drawing on visitor and guide personal impressions and recollections, as well as the observations of the researcher. In addition, this design provided three perspectives on the same excursion, enabling a triangulation of results from the three sources.

In this section I review the evolution of my research approach, and the implications of my role as researcher-participant. I then discuss criteria for selecting study elements (site, participants, excursion type). After addressing factors such as validity and delimitations, I present data collection and analysis methods, and provide a sample of my coding system and how it reflects participant interviews.

### **Study Design and Role of the Researcher as Participant**

The study design initially called for an unengaged researcher to accompany each excursion, concurrently taking notes and not participating in activities. The intent of this approach was to minimize the effect of my presence on the visitors as well as the guide. However, the pilot study revealed that a silent, note-taking observer was disruptive. Although I

was introduced by the guide at the start of the trip, participants viewed me warily and avoided me physically. This made it difficult to hear and observe activities and interactions. My presence was clearly affecting behavior and influencing unfolding events – the exact opposite of my intent. Taking the visitor’s point of view, I concluded that a note-taker lurking at the edge of a group while scribbling on a pad could justifiably cause discomfort and suspicion.

In subsequent trips I adopted instead the role of participant-observer. This involved behaving like a visitor rather than a researcher, associating with both visitors and guides, asking questions, conversing, and moving freely among the group. In consequence, visitors seemed less aware of and affected by my presence than they had been when I was attempting the role of detached, unobtrusive observer. In addition, my engaged presence during the excursion encouraged interaction with participants. This provided me with personal insight into the participant experience and role, and enriched the questions and discussions that occurred in the subsequent interviews. Another result of this strategy was that I took fewer notes during the excursions themselves, and was instead obliged to record my observations immediately following each trip. Also, in most cases interview volunteers were visitors with whom I had social exchanges during the trip; these individuals appeared more willing to participate in the study. This phenomenon surely affected my sample. Whether or not it altered the interview content of the results, is not possible to discern. How much this connection subsequently influenced our interaction, and my interpretation of their interviews, is difficult to assess. I attempted to account for this factor with comments about potential interference in my research journal. It should also be noted that the element of trust that exists in interviews between individuals who have a previous, amiable social connection, however limited, may have had a

positive influence on respondents' openness and willingness to reflect, and to share personal information.

### *Researcher's Role as a Nature Interpreter*

As someone with experience in outdoor guiding and interpretation, I approached these investigations with a distinct perspective on the challenges of this role, as well as having awareness of, and opinions on, the current role definitions and viewpoints provided by the field of interpretation itself.

As a researcher and participant-observer on the nature excursions in this study, I invariably found myself in extreme sympathy with the guides, and also, very aware of the moment-to-moment decisions confronting them, and the quality of their responses. There is no doubt that this awareness facilitated the identification of interpretive techniques, field challenges, and decision points. On the other hand, it was challenging to keep my own interpretation and opinion of field events distinct from those of the guides. Incidents which I found disturbing, and which would have posed a challenge for me had I been guiding, were viewed with nonchalance by some of the guides. Conversely, events that I would have handled with ease one guide found extremely challenging and distressing. Distinguishing my reactions from those of the study participants required constant vigilance. In the same way, a certain event may have affected me very differently from the visitor I was interviewing. For example, in one case a visitor found a fellow visitor's behavior both distracting and unpleasant. However, having already interviewed the supposed offender I found myself in sympathy with her behavior and outlook. In this case, it was not easy to acknowledge the validity of the second person's viewpoint. Balancing my

perspectives as both “insider” (participant) and “outsider” (researcher) represented an ongoing challenge.

## **Research Methods Overview**

I accompanied “short-term” guided field trips offered by Mass Audubon. For each trip, I identified the interpretive and guiding approaches used by the guide, and observed interactions between guide and visitors, and among the visitors. Field notes also included any other group characteristics of note, weather and terrain conditions, and incidents that appeared to affect individual or group experiences (e.g., wildlife sightings, physical accidents or mishaps, or events with an affective consequence such as a sunset). Subsequently, I interviewed individually by telephone the guide and the visitors who volunteered to participate, using a semi-structured interview technique (interview questions are included in Appendix A). The purpose of the interviews was to identify key elements of the experience, the role of the guide, and to explore how the presence, approaches and decisions of the guide affected the experience. The interviews were recorded, transcribed, and subsequently coded for analysis.

This study specifically addressed the role of “nature guide” as opposed to “nature interpreter,” in order to differentiate between the roles of individuals who lead outdoor excursions, and docents and interpreters who remain stationed at indoor or fixed outdoor locations. The same individual may, of course, assume both responsibilities, but for the purposes of this argument I specifically addressed the combined guide/interpreter role, and refer to those who lead these trips as “guides,” “nature guides,” or “naturalists.”

## Study Criteria

### *Excursions*

For the purposes of this study I identified a “short” excursion as three hours or less (approximately a half-day). This trip length is typical of guided nature walks and hikes for casual visitors, especially those in national parks and public conservation lands. This trip length also allowed for time required to reach the activity site when the trip included transportation (such as a van or boat). All but one of the trips in this study were conducted by Mass Audubon at their sanctuaries on Cape Cod, Massachusetts. Although the Cape Cod landscape was not selected specifically, the majority of Massachusetts Audubon nature excursions in Massachusetts characterized by reliable, healthy attendance are conducted on Cape Cod, a major tourist destination. The presence of large numbers of tourists, and the anticipated associated variety of visitor demographic types, were additional factors that made these sites desirable.

I chose to accompany activities in which the visitor group is not highly dispersed (i.e., a walk as opposed to a kayaking or canoe trip), and on terrain that was not challenging to navigate. This was done to facilitate observation of the guides’ approaches, their interactions with visitors, and visitor interactions with each other, as well as to ensure that the focus of the trip was nature education, uncomplicated by the need to master or deploy a skill such as kayaking or canoeing. With one exception (the pilot study), I excluded birding trips, as well as excursions with a highly specialized focus such as edible plants, one species of mammal, etc. The rationale for this decision was that generalized trips were more likely to attract a wider demographic range of

prospective participants than trips with more specialized topics. In addition, the format of birding trips (which require silence at many points) is not conducive to discussion or interaction.

### *Participants*

This study had two classes of participants: interpretive nature guides, and visitors who signed up for a nature excursion. Approval by the Institutional Review Board was obtained prior to contact with managers, supervisors, guides, and visitors.

The guideline for selecting volunteer guides was that the individual be comfortable and confident enough to not be distracted or intimidated by the presence of a researcher. Using this criteria, Mass Audubon managers chose selected individuals and asked if they would be willing to participate. Prior to the trip, the researcher confirmed with the guide volunteers that they were willing to host a researcher. Visitor volunteers needed to be more than 20 years old. The original plan was to obtain as wide a visitor demographic sample as possible, and if winnowing or selection were necessary, to choose a demographically varied set of interviewees. However, because the number of respondents per trip was quite small, all adults who volunteered were selected for interview.

### **Sample Size**

The ideal sample size for a qualitative study is one that achieves data saturation, the point at which new themes or categories no longer emerge from the data (Marshall 1996). Sandelowski (1995) describes it as the point of “information redundancy.” Mason (2010) stipulates that qualitative samples “must be large enough to assure that most or all of the perceptions that might be important are uncovered, but at the same time if the sample is too large data becomes

repetitive and, eventually, superfluous.” In practice, appropriate sample size number varies with the purpose of the study, the nature of the topic, level of variation in the population, and the level of experience of the researcher. Morse (1994) suggests that for studies “directed toward discerning the essence of experience” about 6 participants constitutes a suitable sample size. Creswell (2003) suggests 5 to 25. I initially aimed for a sample of 8 to 12 visitor interviews, distributed across three nature excursions led by three different nature guides. By using excursions with different interpreters, I hoped to maximize the potential variation in interpretive approaches deployed by guides.

Ultimately, I conducted 20 interviews, with 6 guides and 13 participants, representing a total of eight excursions (one guide led three different excursions). The large number of excursions resulted from the fact that I obtained no more than two or three visitor respondents per trip, so in order to collect the desired sample of participant interviewees, I had to complete more trips. This yielded a greater variety in trips and guides than initially anticipated, but also reduced the opportunity for triangulation across respondents on any one trip.

## **Validity**

I used the following approaches to help ensure the validity of my results.

- Bracketing – I used an ongoing journal to record my ideas, biases and preconceptions, both prior to and during the study. I also used this medium to question my interpretation during the process of coding and theme identification. The journal, therefore, also served the function of a self-reflective audit trail as described by Rudestam and Newton (2007).

- Triangulation – Each excursion (with one exception) provided three sources of data: field observations made by the researcher (myself), description of the experience from the guide’s perspective, and description of the experience from the perspective of at least one participant. In one case I was unable to obtain an interview with any of the visitors; this excursion therefore yielded only an interview with the guide, and my own field notes. Data sources and collection methods are detailed below.
- Piloting of instruments and methods – Field observation techniques and instruments, interview protocols, and the interview equipment, were piloted during an initial excursion and subsequent interview. This resulted in:
  - A modified role for the researcher
  - Modification of field recording techniques
  - Modification of field protocols
  - Modification of the interview protocol
- Iteration – As with much qualitative work, iteration and ongoing process modification were an essential element of the study process.
  - Field observation and role of the researcher – As recounted earlier, over the course of this study my role as researcher evolved from that of “objective” and unengaged observer to that of active researcher-participant. As the study progressed I was able to raise response levels by engaging socially with visitors during the trip, prior to asking them to participate in the study.
  - Interview protocols – Over the course of the interview process I identified additional questions and approaches that encouraged recollection and reflection

from participants, and yielded richer data. Certain questions and approaches that proved ineffective were dropped.

- Coding – Data coding was an iterative process that began after the first interview, and progressed throughout data collection (interview recording and subsequent coding). As new data emerged, codes and categories were continually adjusted to accommodate new information, and the researcher identified the level of coding granularity required to generate meaningful themes. Some categories consolidated, others divided, and new categories continued to arise. This new information was continuously retrofitted into existing coded documents. (The coding method will be discussed in detail below.)

## **Delimitations and Limitations**

### *Delimitations*

#### Demographics

This research was confined to adults, defined for the purposes of this study as 20 years and older. This definition was used because the recommendations and conclusions resulting from this study are intended for the target audience of interpretive practitioners who are not primarily dealing with children's programs, but with adult-oriented programs. Interpretive programs for children are generally designed with specific experiential and learning characteristics, and are often centered on age-specific developmental needs (including programs for teens).

## Excursion Type

With one exception, I selected study excursions which were defined programmatically by the sponsoring organization (Mass Audubon) as general nature walks or hikes (as opposed to trips restricted to more specialized topics such as birds or mushrooms). I decided that specialized topics would attract a more sophisticated and outdoors-educated audience, when the study intent was to examine the experience of visitors who were not necessarily nature-savvy.

Excursions were also confined to trips that did not require an additional physical skill such as kayaking, canoeing, or strenuous hiking.

## *Limitations*

The demographics of visitors who volunteered to be interviewed, and who comprise the purposeful sample, were skewed heavily towards the highly-educated and middle-aged. In addition, all respondents were comfortable in the out of doors and natural settings, and had experience with similar excursions. This group of respondents, therefore, may not be representative of typical visitors to nature programs. Since the proportion of visitors who volunteered to be interviewed after any particular hike was generally no more than 25 percent, it is possible that more inexperienced, “nature-naïve” individuals were less comfortable with the idea of an interview. It is also possible that the more experienced visitors who responded felt a sense of conservation responsibility and stewardship towards the natural world that attracted them to the study. Since the respondents were also highly educated, it is possible that they had an academic or topical interest in participating in the study itself. In any case, the limited demographics of the visitor sample means that, while the results may be applicable to groups

with corresponding demographics, they cannot necessarily be assumed to apply to a more general class of visitors.

## **Data Collection**

### *Field Protocol*

Tension existed between the goal of the study (to obtain authentic experiential data), the desire not to deceive potential participants, and the need to observe while having a minimal effect on the hike experience and interpretive process. How this was resolved is explained below.

At the start of each excursion, during the visitor orientation, I was introduced by the guide simply as “a researcher.” I felt the introduction was necessary because the presence of an unengaged person observing and/or taking notes would be noticeable and potentially disruptive, especially if the observation appeared surreptitious to visitors and potential participants. In early excursions I offered a very high-level description of the work, but it ultimately devolved that “researcher” was a satisfactory explanation. To visitors who expressed additional curiosity I explained that I was “interested in nature hikes.” (The intent was to avoid response bias by not cuing visitors to the data I was collecting.) At the end of the trip, before the group dispersed, I solicited volunteers to interview, and handed out an informed consent form and short demographic and contact information questionnaire. I indicated that I would contact volunteers and conduct interviews by telephone within 14 days of the trip.

### *Field Observations*

As mentioned earlier, the taking of extensive field notes during a trip proved distracting to visitors and disruptive to the excursion process. Therefore, I limited note-taking to occasions when it was possible to record activities inconspicuously. For this reason, most field notes were written from recollection immediately after the trip.

### *Additional Instruments: Interpretive methods checklist*

A checklist was developed to record interpretive techniques used by the guide. For the reasons cited above, it was difficult to deploy during excursions; consequently, it was filled in after the trip, when the balance of field notes were also recorded. The purpose of this list was to help the researcher identify methods and techniques used by the interpreters during the course of the outing. The list was gathered from many sources, including Chen (2003), Beck and Cable (2002), Tilden (1957), Ham (1992), Falk and Dierking (2011), and the personal experience of the researcher. Interpretive techniques were grouped into the following categories:

- Cognitive – Presenting facts
- Cognitive-Relational – Cross-linking concepts and facts in ways that may be new or novel for visitors
- Constructive – Deploying constructivist educational techniques
- Sensory – Appealing to the senses
- Affective – Appealing to emotion
- Self – Invoking individual experience (e.g., reflection, personal narratives)
- Social – Utilizing social factors (e.g., group bonding, conversation)

## *Interviews*

Semi-structured interviews with guides and visitors were conducted by telephone within 14 days of a trip (interview questions, Appendix A). The interviews, which generally lasted between 20 and 40 minutes, were recorded and subsequently transcribed.

## **Data Analysis**

“Open coding” was the method used for this study. In this process, code categories were not determined prior to the coding process, but emerged during analysis. Saldaña (2009) writes that coding is “a method that enables you to organize and group similarly coded data into categories or ‘families’ because they share some characteristic – the beginning of a pattern...use classification reasoning plus your tacit and intuitive senses to determine which data look and feel alike.” Codes and categories in this study were refined and modified during analysis, as both were combined or granularized as required to meet the needs of emerging data.

## *Coding Process*

Following transcription, I observed the following procedures.

- *First Reading (high-level)*

Prior to the coding of each interview, I read the transcription in order to gain an overall impression of the topics, opinions and descriptions expressed by the respondent. At this time I identified and noted in journal or research memos any issues and/or questions that emerged with regard to interpretation of the material, and noted in the margins of each

document general patterns or themes (if any) suggested by the material. For each interview I created a table summarizing the notes.

- *Open Coding/Iterative Processing*

In this granular analysis I scanned each interview text in detail, using chunks of text as the source or individual codes. Hycner (1985) refers to these chunks as “units of general meaning” while at the same time continuing to record separately in memos and journal any issues and patterns arising from the data. Interviews were coded during the course of the field research; i.e., I did not wait until all field research was complete, but coded as transcriptions were completed. This resulted in a process in which the emergent codes and patterns from one interview informed questions asked in subsequent interviews. It also resulted in the ongoing modification of code descriptions and categories, as patterns and associations emerged from the data. For this reason, the coding of each interview was an iterative process. Codes and categories that were altered subsequent to a coding pass were modified in already-coded interviews, so that each interview reflected the latest analysis. As might be expected, the changes required from iterative passes were initially substantial (for the first 4 or 5 interviews) but lessened as confirmed codes, categories and patterns stabilized over time.

- *Categorizing*

As analysis progressed, categories emerged from the library of codes. These usually aligned, but were not completely congruent with, patterns identified in the initial margin notes. Comparing the codes and categories in each interview with the earlier overview notes provided a way of comparing the coding results to my initial impressions. In

addition, I counted the number of times each code appeared in each interview, identified the most frequent codes within an interview, and compared this result with the high-level summary of that interview. Discrepancies between initial high-level overview notes and detailed coding served as a double-check that helped to identify:

- Themes or categories inferred during the overview but not substantiated by coding;
- Themes and categories emergent from the codes that were missed or overlooked in the high level readings; and
- Codes or code categories that did not seem to “fit” with initial impressions.

These cases were flagged for subsequent review and comparison with other interview results. They provided a way for the researcher to evaluate and validate the granular results of line-by-line coding against holistic thematic impressions, and assure that neither the forests nor the trees were overlooked during analysis.

- *Experience Review*

Finally, I reviewed each interview for items referring specifically to the hike experience (i.e., as opposed to preferences, recommendations, recollections of other events). This was done to ensure that no material referencing the immediate experience of the participants was overlooked.

- *Code Frequency Reviews*

- Code frequency cross-check

I determined the most frequent codes within each interview and compared this result across interviews. This was one way in which common, cross-interview themes were

established and validated against the notes and impressions resulting from the initial high-level reading.

- Code frequency summary

I summarized total frequency of appearance of all codes, as well the number of interviews in which each individual code appeared. This process provided yet another perspective into the data. It identified not just the most frequent codes, but those that may have appeared only once in any single interview and yet manifested across many interviews. In this way, I was able to identify themes that could otherwise have been overlooked (because each individual code did not appear often).

- *Categories and theme development*

While categories provided a way to manage and consolidate codes, categories did not necessarily provide a way to elucidate themes (only one category ultimately evolved into a theme). During re-readings and code frequency check, certain categories tended to associate in chunks. These chunks or clusters of associated categories revealed the themes and patterns that form the basis for the results discussion.

## Chapter 4: Findings

This study was designed to examine how nature interpretation facilitates a nature experience by exploring the experience through the lens of both visitor and guide. After accompanying and observing a series of guided nature walks I interviewed both visitors and guides. This provided a threefold perspective on the experience: the viewpoints of visitor and guide, and the observations of the researcher.

In this section I describe the excursion events that comprised the study, as well as characteristics of both visitor and guide respondents. I then discuss the way in which codes and categories were defined, and provide a coding example. Subsequently, I explore the themes that arose from interviews with guides and visitors, using quotes from the interview transcriptions. Finally, I present my own (researcher) observations.

The study sites were in Southeastern Massachusetts, a gentle landscape of second-growth forests, and on Cape Cod, which is characterized by barrier beach and coastal ecosystems such as salt marshes, estuaries, pine forests, grass- and heathlands, and kettle ponds. Cape Cod was chosen because it is a nature-based tourist destination: summer visitors come for the beaches and ocean recreation. My ideal sample was “nature-naïve” visitors looking for an introduction to the natural world: people not yet members of a conservation community or movement, who might be motivated, in the words of Mass Audubon (the sponsoring organization and site owner) to “connect to nature” and subsequently support conservation efforts. With this strategy I was

attempting to explore the experiences not of nature “regulars,” but the untapped audiences that organizations such as Mass Audubon are attempting to win to their conservation cause.

## **Overview: Excursion Characteristics**

### *Experience Setting: Excursion landscapes*

The researcher accompanied eight guided nature walks. Seven took place on Cape Cod during the summer, and one occurred in South Natick, Massachusetts, in late fall. The excursions covered five types of habitat: woodland, open fields (uncultivated), pitch pine/scrub oak, salt marsh, and barrier beach. The habitats of five of the trips were characterized by a mix of these landscapes; the other three covered only a single habitat type. One excursion also involved a 15-minute boat ride to a barrier beach site, and one took place at night. On all trips the terrain was generally flat, with only small rises such as sand dunes that might create a physical or logistical challenge for visitors and guides. The weather was clement on all trips.

### *Participant Characteristics*

#### Visitors

The excursion groups ranged in size from five to 12 visitors (excluding the researcher), and included couples, families with children, groups of friends and/or relatives, and unaccompanied individuals. On the Cape Cod trips, all group members were visitors and tourists (as opposed to local residents of nearby towns). Because some of the visitors vacationed regularly on the Cape, groups were composed of people who were familiar with the terrain, as

well as tourists to whom the Cape Cod landscape represented a new and novel experience. The South Natick (Broadmoor Sanctuary) trip included locals only.

The number of visitors volunteering to be interviewed for each excursion ranged from zero to four, with most excursions yielding two or fewer respondents (Table 4-1).

Excursion	Date	Visitors Interviewed	Guides Interviewed
Broadmoor Sanctuary	11/1/2011	1	-
Wellfleet Sanctuary	6/18/2012	2	1
Monomoy National Wildlife Refuge	7/10/2012	-	1
Wellfleet Sanctuary	7/11/2012	2	1
Long Pasture Sanctuary	8/7/2012	2	1
Sandy Neck Beach	8/7/2012	2	1
Wellfleet Sanctuary	8/22/2012	1	1
Wellfleet Sanctuary	8/22/2012	4	1

*Table 4-1* Visitors and Guides per Excursion

This resulted in a greater number of excursions than initially anticipated, in order to attain the number of respondents planned in the design (the design goal was four participants per excursion). I therefore observed eight excursions, as opposed to just four or five. Another result was the participation of more guides than initially anticipated, as a result of the greater number of trips. In consequence, the study involved fewer visitor respondents per excursion than planned, but ended up including more excursions and more guides. This provided a wider variety and larger sample of excursion experiences than expected. Visitor respondents skewed heavily towards the highly-educated and middle-aged. Of 14 respondents, 12 had advanced degrees. One was a college student, and one (in military service) had some college. With the exception of the student, all were either professionals or retired professionals. One visitor identified as

mixed-race Hispanic and one as African-American; the rest identified as white. Twelve respondents were middle-aged (between 50 and 65), and two (the college student and the military individual) were in their twenties. Four were married couples (i.e., four pairs, or eight respondents), and two individuals who were interviewed were family members (aunt and niece). This pairing may have had an effect on the results, as the observations and opinions of paired visitors occasionally overlapped.

Respondents were all individuals who regularly sought out and/or spent time in natural settings, and all had regular exposure to nature as children. These were not “nature-naive” visitors. While no data was obtained for group members who were not interviewed, casual observation indicated that group members tended strongly towards the middle-aged. The exception was families, usually with two or more children. On all excursions there was a marked absence of young adults without children.

## Guides

All the respondents identified as white but varied in background and age. All had undergraduate degrees. The oldest was a 56-year-old male, who had spent a lifetime on Cape Cod and at least 25 years as a professional naturalist at Cape Cod sanctuaries and wildlands. The youngest was a 21-year-old female college student in her second summer as a Cape Cod camp counselor and naturalist. One was a 28-year-old male with a background in wildlife research and management as well as environmental education. Another was a 33-year-old male working as a wildlife properties manager who took on the additional roles of naturalist and guide. A 44-year-old female science and environmental educator with a Master’s degree in horticulture completed

the sample. All were paid employees of Mass Audubon and considered themselves professional naturalists and guides (none of the individuals used the term “interpreter”).

### **Process Overview**

All of the visitors who volunteered for participation were interviewed. This was a result of the lower-than-expected response rate for each excursion. At the end of each trip, volunteers filled out demographic and contact forms. All volunteers were interviewed by telephone within 14 days of the excursion. In most cases, visitor participants were still on vacation when contacted. This meant that interviewees were generally reached via mobile phone, in locations such as hotel or motel rooms and rental cottages. Interviews generally lasted 30-40 minutes.

Guide participants were also interviewed by telephone within 14 days. In one case I was unable to contact the guide (who had left the country). In other cases, a guide led more than one excursion; the result was that the number of guides interviewed (five) was less than the number of study excursions (eight). Guide interviews also generally lasted 30-40 minutes.

Interviews were transcribed by the researcher and subsequently analyzed in accordance with the methods described in Chapter Three. After an initial high level reading and written summary, the texts were coded using an open coding method in which the codes were not predetermined, but emerged from the document as part of the coding process. Following coding, the text of each interview was re-read to check for experiential items that may have been overlooked. As data accumulated, the codes were sorted into categories, and redefined and re-categorized via iterative processing. The codes and categories were analyzed for frequency both within and across interviews. This enabled the researcher to recognize the importance of codes

that may have appeared only once within a given interview, but manifested consistently across many interviews (the code for “pacing” is an example).

In the sections that follow I will discuss the codes themselves, how they were applied, and the resulting categories and themes that emerged from the analysis.

## Codes and Coding

Analysis of 14 visitor and seven guide interviews resulted in 232 codes (Appendix B) from which emerged 19 categories (Table 4-2). There was no design intent to create a separate set of codes for guides and visitors. However, while the sets overlap, some categories appear exclusively in either guide or visitor interviews.

Code Category	Visitor	Guide
Activity type	X	X
Approach (deployed by guide)	X	X
Challenges	X	X
Children	X	X
Desired outcomes/goals		X
Emotions/affect	X	X
Guide perception of his/her role		X
Guide skills	X	X
Decision factors		X
Motivation of visitors	X	X
Place	X	X
Professional frustrations/dissatisfactions		X
Qualities perceived in the guide	X	
Quality of experience	X	
Rewards of guiding		X

Self-characterization	X	X
Social issues and observations	X	X
Visitor characteristics		X
Visitor trends		X

*Table 4-2 Code Categories*

### *Coding Nomenclature and Application*

The first letter of a code denotes the code category. Subsequent lower case letters indicate a specific detailed aspect of that category. In the example below, *I* denotes the category “Interpreter skill/attribute.” The letters following indicate the specific attribute or skill in question. Thus, *Iu* refers to the enthusiasm of a guide (or lack of it), as indicated in conversation. *Io* refers to the guide’s content organizational skills (or lack of them).

The tables below show sample codes (Table 4-3) and how they were applied, using actual interview text (Table 4-4).

Code	Category	Detail
Iu	I = Interpreter skills and/or attributes	u = enthusiasm, passion
Sn	S = Social	n = norms
Eb	E = Feeling, emotion	b = beauty
Io	I = Interpreter skills and/or attributes	o = organization

*Table 4-3 Code Examples and Nomenclature*

Transcribed Text	Assigned Code
Well, I, um, both my niece and I thought that the guide was obviously in love with what she was talking about. And she kept saying, It's so cool, This is so cool, This is so neat, this is so cool, and we were kind of giggling that that was what you want in a guide, you want someone to just go, Look at this, Isn't this cool? But she was actually saying those words, "This is so cool!" and, um, that was one of the things that stood out. And the other people who were in the group we thought were kind of wet noodles, and just kind of walked along, and obviously they were well-educated people and I kind of felt like they were, um, kind of dragging the whole energy of the walk down. And I think it, it -- obviously the sunset Oh my gosh was so beautiful -- the fact that she did not do her Powerpoint presentation to go look at the sunset I thought was fabulous, but then at the same time I feel like the Powerpoint kind of gave her an orientation about what she was going to talk about and in which order? So I felt like the pre-forma, that even though she was very excited about it, kind of caused it to ramble kind of all over the place, if that makes sense.	Iu  Sn  Eb  Io

Table 4-4 Code Application Example

#### *Code Groupings: Categories and clusters*

While the codes are grouped into discrete, emergent categories, individual codes are often associated with codes from other categories. For example, the code for visitor motivation to learn (**MI**, categorized under M = Motivations of visitors) is often linked with comments about guide general knowledge (**Xk**, categorized under X = Expertise). I call these code associations “clusters.” These clusters of codes from different categories constitute the key themes that emerged from the interview data.

Table 4-5 below summarizes the definitions of terms used in this study.

Item	Definition	Example
Code	“Word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language or visual data.” (Saldaña 2009)	M1 = Visitor motivation to learn
Category	Group of codes that share a similarity/difference, frequency, sequence, causation, correspondence or relationship (Saldaña 2009)	M = Motivation (includes all codes beginning with “M”)
Cluster	Group of codes frequently found together (associated); ultimately these constitute themes	(M1, Xk) (Visitor motivation to learn, Guide knowledge)

*Table 4-5 Definition of Coding Terms*

### *Interview Discussions*

In the sections below, I present the themes that emerged from the interview data. For each theme, I first list its component codes and their categories. I then discuss the theme using examples drawn from interview transcriptions. I have chosen to use pseudonyms for the guides. This decision was made for narrative purposes, to enable the reader to distinguish the comments and approaches of individual guides. This convention was not used for the 14 visitors.

Because visitor and guide experiences differ in many ways, I first discuss the themes identified in visitor interviews, and subsequently, the themes that apply to guide interviews.

### *Visitor Themes*

#### Learning

*Component Codes and Categories: Motivation for Learning (M1) , Guide Expertise (Xd, Xe, Xh, Xi, Xk, Xm, Xn, Xp, Xv, Xx)*

Learning is a recurring motif in visitor narratives of their experiences. The most frequent single code was that for motivation to learn (M1), and many of the most common codes were

those associated with learning (e.g., areas of guide skill or expertise, or topics that interested visitors). One of the key reasons that visitors attended guided hikes was to learn something new, and to gain understanding of a place and its history. The next most frequent codes referred to guide knowledge – both breadth and depth of expertise. Every respondent talked about wanting a guide who is “knowledgeable,” using terms such as “expertise,” “depth of knowledge” and “breadth of knowledge.” But what do these terms mean for the visitor experience?

Visitors interviewed in this study want to learn, and expect to be led by guides who do not just relay facts, but can explain the why and how of natural events, animal behavior, habitat choices, and plant characteristics. The term “deeply knowledgeable” was used often by respondents describing a positive experience or desirable quality in a guide. Visitors described wanting a “deep knowledge of how the ecosystem is functioning,” in order to understand the relationships among plants, animals and landscapes. One respondent admired the guide because he could describe “the interplay of vegetation, the environment, and the birds.” Another talked about why he goes on guided walks:

Knowledgeable guides can point out aspects of the ecology, such as the presence of bushes with berries, and talk about the kinds of birds that are still there because of that, indicate other things that they’re trying to do with the land, such as clearing land to draw certain kinds of birds back.... And also can point out background information about the ecology as it affects the birds. I don’t go on bird walks just to literally see the birds. I go to see them and try to understand what kinds of birds are there and why.

One visitor referred to “somebody who can put everything together, integrate everything that you see.” Another wants a guide who can give her “a more comprehensive understanding.”

One respondent was impressed by a guide who openly challenged the conclusions of university researchers who had recently completed a study in the area. In his mind, this

willingness to question the conclusions of credentialed academics demonstrated competence and understanding.

I was impressed with [guide], because although he didn't come right out and say they were wrong, he had his own perspective, and he thought that based on his observations, and what he's seen, that it *wasn't* the crab, but it was just the effect of maybe the different tides and the different temperatures and things like that. And I think that, for a guide to question that data based on what he has observed himself, that's a sign of somebody who really understands nature.

Visitors also valued the perspective they gained from learning the history of a place, both human and ecological. Since comments related to such perspective were often generalized to include both human and ecological factors, and since these factors overlap (humans cause ecological change, as observed in the example above), I designated this code "ecohistory."

A visitor indicated that without the guide, "we wouldn't have learned anything new," and commented that the guide had offered not just facts, but had explained: "...the change in the growth of the grasses, the different types of grasses, and how the sea, the tides, and so forth have been affecting the habitat and changing the habitat." What she values from a guide is a perspective on

...how the whole ecosystem is functioning, and whether there are threats to it, coming from pollution sources or other things ...that deeper knowledge of how things are, what has been happening over the history of the area, over the span of the years. These are some of the things that our guide pointed out: the changes in the trees and so on and so forth over the years; the history of the area.

The purely human history of a place, in addition to its ecological history, was also something visitors valued and recalled.

I loved his story about the Tri Island, just looking out there, all things that you don't get from going by yourself. I'm not that familiar with the history of the whole land there, so I liked that story, I liked picturing the people out there working.

For one visitor who was quite familiar with the landscape of a walk, the history of the location discussed by the guide was a new element that changed her feelings about that place.

...the background of how the property had belonged to an individual, who made that pond there. I've been there many, many times but it was just an environment, it didn't have as much character ...I've always loved that place, I really have spent a lot of time there...[now] I feel a little closer to the place.

(Relationship to place appears as a category of its own, and is discussed later in this section.)

Several respondents expressed interest in landscape change as an indicator of climate change, and found these topics especially interesting.

We saw things that were evidence of sea level rise, and this is something that I've been curious about... We saw a bush that was dead, and [guide] pointed out that they had this unusually high tide, and perhaps that bush had died because of overexposure to salt, and then he was explaining how certain plants can stand an occasional high tide, but others can't stand that exposure to salt water, and it was evidence that the tide had been coming up unusually high... And then I asked him, Could it be that's evidence of sea level rise? ...and then he was explaining about the area where the grasses had died back, and we were seeing how there was a change in the vegetation there, too, over the years.

For this visitor, the guide's discussion made an impression vivid enough for her to recall not just the fate of a particular plant, but the ensuing explanations and conversation about sea level rise.

The guide's knowledge and experience of a place and its history impressed many respondents.

[Guide] is just a gold mine. He's been there for decades, and his knowledge is unsurpassed. You get a lot of people who are up to date on current research, they know that migratory patterns that have changed, so it's one thing to be a rank amateur, kind of where I am, it's quite another to have a professional stake in the ground. And most of the guides, at least the ones I choose to sign up with, have this richness in background, and they've got data. Who doesn't love data?

For many visitors, the element of surprise contributed to the learning experience. While visitors want in-depth knowledge, the understanding of a landscape and its history, they also enjoy and recall surprising facts and unexpected experiences.

We didn't know that mint was square-shaped, and I thought, Wow! Something as simple as, you can grab a piece of wildness and if it's square, it's probably in the mint family. Wow! That's pretty neat. I'm fifty-six years old. I had no idea. You know, I use mint in my restaurant all the time. I had no idea.

This respondent returned more than once to the topic and novelty of square-shaped mint stems, which were pointed out by touch (as opposed to visually) during a night hike.

An unexpected landscape generated a similar response from a different interviewee:

We're used to really high dunes, feeling like you're climbing up a mountain, but then to go on that hike and be exposed to all of those dune area on the bay side, I was like, Whoa! I never knew this existed ..I was like Wow! that's pretty neat. So that was a real learning for me.

Visitors also recalled what they perceived as unusual information. The guide on one particular walk pointed out large, blue trap boxes for greenhead flies; both the flies and traps were new concepts to the visitors. All four of the respondents from that excursion who were interviewed were surprised by the guide's explanation, and recalled it.

He was saying the flies prefer blue, and they [ the traps] have the opening underneath because of the cow, they come up to the cow's udders and everything, and my first thought was, Well, I've never seen a blue cow! [laughs]

A more restrained visitor on the same trip commented, "We were hopeful that we would learn some things that we wouldn't have learned otherwise. Matter of fact we did, things about

the green-headed fly or whatever it was, and diamond back terrapins...some of those things were a little unexpected, so we got some value out of the walk.”

In addition to learning about and understanding the natural world, visitors were highly motivated to see and identify specific elements of that world, as the next section describes.

### Seeing and Identifying

*Component Codes and Categories: Desire to see and identify (Mc), Guide Expertise (Xd, Xe, XXi, Xk, Xm, Xn, Xp, Xx)*

The desire to see wildlife was a key motivation for visitors, and a key reason for going out with a guide (the only respondent who mentioned a desire to see and identify plants was referring to his wife, who was present on the trip but not interviewed). Therefore, the corresponding ability for a guide to locate and identify birds and animals was an important skill for many visitors. Because all the study sites were Mass Audubon sanctuaries, many of the visitors had an interest in birding, and for the same reason, most of the guides had substantial birding expertise. For this reason, much of the wildlife identification focused on birds, even during trips that were not specifically designated as birding outings (only one excursion was listed as a birding trip).

Respondents wanted more than to just have a creature pointed out. They wanted to understand its relationship to the environment (“I don’t go on bird walks just to literally see the birds. I go to see them and try to understand what kinds of birds are there and why.”) Especially with birders, visitors wanted to know how to locate and identify birds, and they wanted a guide that doesn’t just have good field skills, but who also knows how to share them.

Seeing birds, seeing or hearing things that are helping me learn how to identify...little things to help you remember a particular thing, identifying either a bird or something else ...sometimes it's hard to remember all those calls, [the guide can] give you little tricks of the trade to help you remember or identify things.

Identification tips provided by guides and valued by respondents included such factors as noting distinctive calls, subtle differences between one call and another, flight patterns, how a species carries its legs during flight, habitat preferences, and behaviors.

You get to know the different patterns, you know, the Greater Yellowlegs do this, and the Lesser Yellowlegs do that...the kingfisher, what he does, how long he stays, how he looks, you get a much better handle on the behavior of the birds.

Experiencing Place: Sharing, restoration and refuge

*Component Codes and Categories: Desire for refuge, for place experience, for family experience (Mp, Mr, Mf), Guide knowledge of place (Xp), Emotions of beauty, peace, fond memories (Eb, Em, Eq)*

The theme of place runs strongly through the interviews. High on the list of frequent codes is one signifying the desire to return to a familiar and loved sanctuary or landscape. Many of the visitors interviewed return regularly to vacation on Cape Cod, and to revisit the study sites. At least three visitors had personal childhood summer experiences in this landscape that affected them deeply, and they have continued to return with their own children and eventually, grandchildren.

When we were children, we went on these nature walks here on the Cape, and so this is the next generation, and I think that an experienced guide can teach things, so there's also the educational aspect. And I think it so influenced my brother and I professionally. We both were biology majors and ended up as scientists, I ended up in medicine...I don't know if it was seminal, but related.

One site in particular represented a refuge from the commercialism of the Cape Cod summer season. Respondents describe it as “a separate reality,” “an island of serenity and observation...a wonderful island of peace,” “a place of peace,” “a wonderfully comfortable and comforting feeling that I get there.”

I love that place...Culturally it's very, very different from so much else that's on the Cape, which is crass, commercial, spend money, eat at Joe's, whatever it happens to be.

For these visitors the concept of restoration and refuge was strongly associated with the concept of this particular, special place. While none of the guides explicitly addressed the idea of nature as a refuge or restorative, the Wellfleet Sanctuary offers a nature excursion called “Sunset Stroll” that is scheduled for late afternoon/dusk. The leader times the walk so that the group proceeds through gentle scrub oak terrain and arrives on a beach in time to see the sun setting over Cape Cod Bay. For one of the guides who often leads this trip, the sunset provides an opportunity to allow visitors an emotional space or quiet time that is quite separate from an educational or learning agenda.

I can just let them enjoy the sunset. My goal at the beach is to get there and just stop talking, and see if the people will slow down and take in what an incredible view it is, and usually they do that. Sometimes it takes a little while... I feel like this hike can be so pleasurable and it's just for enjoyment, it's not always so heavy on the talk and the agendas. It's a much more agenda-free, kind of enjoying walk... I feel very much that that hike is kind of enjoying and invoking lots of happiness in it...

One might assume that familiarity with a place obviates the desire to explore it, since it is well-known. However, for the respondents in this study, a guided walk represented an opportunity to learn more about a familiar and beloved landscape. In several cases, visitors were surprised to find themselves on trails and at sites that they did not know existed, despite their

familiarity with the area. “The particular trail that we went on was one that I don’t remember going on [on previous walks]...it was a new trail that we had never been on before, so some of the views and panoramas were new to me.” Commenting on a trip to a familiar sanctuary, another respondent noted:

There actually was one moment that did stand out. We went down through the woods a little ways off the meadow to a vernal pool with a little dock and I’d not been there before. I thought that was a pretty spot – a small body of water, isolated down in a depression in the midst of the woods. It was a very pretty, peaceful spot.

These individuals were both visitors who, although they considered themselves very familiar with a place and landscape, were led by a guide to a previously unknown spot.

#### Guide Attributes

*Component Codes and Categories: Guide Expertise (Xb, Xc, Xf), Guide Attributes and Skills (Ia, Ic, Id, Ie, If, Ig, Ih, Io, Ipp, Ir, Irs, Is, Its, Iu, Ix, Ixc, Ixn), Guide Audience Approach (Hi, Hq)*

Respondents demonstrated a consensus about what qualities make a good nature guide. The most-mentioned – breadth and depth of expertise – has been addressed in the “Learning” section above. The next most frequent comment about desirable guide attributes referred to enthusiasm. Visitors wanted guides who are passionate and enthusiastic about their subject and their work.

The guide was obviously in love with what she was talking about. She kept saying, It’s so cool, This is so cool, This is so neat, this is so cool, and we were giggling that that was what you want in a guide, you want someone to just go, Look at this, isn’t this cool? But she was actually saying those words, “This is so cool!”

When asked about what she values and expects in a nature guide, another visitor replied “Someone who’s really passionate about nature. When you have a leader who’s passionate about

what they're doing, it rubs off on you." Asked what she noticed about the guide on a family walk, one visitor's immediate response was, "Wasn't she charming? Her enthusiasm!" Referring to the guides at a particular sanctuary, another commented

It's great that the guides have enthusiasm for everything. For the knowledge itself, for the observation, for the Aha! And the ability to impart that enthusiasm to the people on the walk. ..I cannot overrate the importance of enthusiasm. ...you just cannot underestimate how infectious enthusiasm is.

Close behind enthusiasm in the list of desirable guide qualities was a pleasant, easygoing personality. A popular guide, "Larry," is described as "a very easygoing kind of guy, but very deeply knowledgeable...free and easy with everybody." A respondent on a different excursion spoke about the same guide. "He just has a very generous way...really easygoing...he just made it comfortable."

One respondent described "having somebody that's charismatic":

A lot of the guides that we've had are extremely intelligent men and women, but maybe not just the best people skills. Which [guide] had. He was really personable and I could speak with him easily, and we talked and joked a little bit, outside of the birding, which is fun.

The most senior guide interviewed, "Hank," described his own background in dealing with people as an important part of his skillset. "Some sort of people skills I think are [important]...I used to wait on tables, and probably dealing with the public in that way was as valuable as many other things."

While respondents did not explicitly describe what they meant by "personable" or "charismatic," other characteristics of guides who were described in this way included

attentiveness to individual visitors and their interests, and the ability to recognize and respond to those interests.

One guide in particular made a point of helping visitors follow up on points of interest by recommending other places or experiences for them to explore during their Cape vacation. A respondent on one of his hikes praised

...the suggestions at the end of the tour about 'Hey, check out Nauset Beach,' and suggestions about other things to do next... he pointed out Jeremy Point, which is this spit of land that comes down from the Great Island park, and talked about how you could get there and what you could see there.

Referring to the same guide, but on a different excursion, a respondent describing the guide's interaction with a new birder commented, "[Guide] just had a very nice way of chatting with him and giving him lots of suggestions of places to go. I think they were staying in Yarmouth or something, so giving him ideas of where to go and do some bird watching that they could do with the baby."

Visitors also enjoyed personal conversations with the guides, and the fact that guides were willing to share personal information. In a general comment, one visitor indicated "I like to share our experiences [with the guide] and get a rapport." Another stated,

You know what is nice? When somebody brings their personal experience into it. When you find out about the guide, what he likes to do, or she likes to do...you get to know people.

Discussing the guide on his excursion, one respondent indicated,

He's an interesting person. I wish I'd gotten to know him better. Here's a guy who's been out basically busting the sand dunes for six years. And what makes somebody like that tick is fascinating to me.

Talking about the guide on the same excursion, another visitor commented:

I enjoyed at the very end of the walk where he was talking about himself and his career choices, and what he thought he would do with his future. I think it's neat that he knows so much and at this stage of his life is willing to look at different areas of the country, and he said he'd like to go to the West Coast sometime because he didn't know the West Coast birds, and that was kind of neat.

To many respondents, knowing the personal background of guides – how they came to this type of work – and their willingness to share personal information, is a memorable aspect of the trip experience.

A sense of humor was another very desirable trait in a guide, generating comments such as, “He’s very knowledgeable, of course...but with a good sense of humor and I think that was really fun.” “Having a sense of humor, being relaxed, not too stressed out,” “I thought she was funny,” “It’s nice if they have a sense of humor and make it fun.”

Another attribute that visitors valued was what might be called the style of information transfer. Visitors wanted guides to have expertise, but they did not want guides to flaunt it. They wanted it presented in a personable, easy way.

He was talking to people just in the totally appropriate way. He wasn't pontificating, or he was just giving little bits of information where people could appreciate it.

One respondent, talking about a previous guided experience that was not very enjoyable, commented “He knew everything. But I think he had one of these Aspergerian loose screws.”

## Social Issues

*Component Category: Social Issues (Sc, Sd, Se, Sgl, Sg, Sk, Sl, Sn, Sp, Sq, Ss, Sv)*

While the largest code cluster involved learning, one of the largest single code categories represented social issues. These included comments and observations on social norms, meeting people with common interests, learning through others' questions and comments, people-watching, group social dynamics, and the social skills of other visitors. The prominence of social issues was an unexpected and surprising outcome of this study. When asked, "Tell me what you noticed on this walk," the first comment of seven of the 14 visitor respondents was a social observation. For three of these seven, the very first thing they mentioned was related to undesirable behavior – for two, a group norm violation by other group members, and for one, the recollection of a comment of his own that he retrospectively perceived as inappropriate and distressing to another visitor. As a first recollection, two of the seven mentioned positive qualities of the guide (enthusiasm, pleasant personality), one the excitement and play of the children in the group, and one made a general comment on how enjoyable it was to meet people, both familiar acquaintances and new faces.

The most frequent single code in the social category, and one that appeared in many interviews, was the code referring to violation of social norms. The respondents in this study were all experienced in the outdoors and presumably familiar with the conventions of group hikes. The non-observance of these conventions, and the violation of group hike norms, is apparently a transgression that remains in memory.

One respondent noted that some visitors left before the end of the hike. "Towards the end of the hike there were certain people that split off and left, and I thought that was a little, if

you're going to go on a walk...I don't know, for me it would be odd. I like to complete the walk with the guide and do the whole thing." Another commented on how the attitude of other visitors affected her enjoyment. "The other people in the group were kind of wet noodles... obviously they were well-educated people and I felt like they were dragging the whole energy of the walk down." In this case, the respondent seems to have expected that "well-educated people" would display more interest and energy. She reiterated a similar comment about the same family using the term "wet noodles" later in the interview, so the event appears to have had some impact. One respondent noted a woman whom he perceived as "standoffish, rude." Like the previous respondent, he mentioned this person and her behavior again later in the interview. Commenting on a perceived social solecism, another interviewee said, "I thought that was terrible, actually...when you're part of a group, you're part of a group." It should also be noted that my presence on the pilot walk – an unengaged researcher silently taking notes – could also be construed as a violation of group social norms, as demonstrated by the discomfort I observed in some pilot group members. These visitor responses demonstrate that on a guided walk, as with any social environment, social behavior is an important dimension of the experience.

Many visitor comments involved social norms, and the violations of these norms certainly impacted visitors' experiences, as visitor observations demonstrate. However, most social codes relate to the interaction and engagement of visitors on an excursion. In the context of discussing the benefits of a guided group hike, respondents commented on learning from other members of the group, from the expertise of other visitors. "You learn something from everybody," "nobody hoards his knowledge so I'm always learning stuff," "you meet people and they have things to share...things to add."

Another advantage that visitors identified is the opportunity to learn from the questions of other visitors. “You get people that ask different questions that I never would have thought to ask,” “I like what [other visitors] can add to it, either in the way of questions or information,” “There was one gentleman, I think he was from Texas, and he was asking a lot of questions, and some of the questions he asked... were interesting, and the answers [guide] gave to him specifically were good.” “It’s a treat to be in a group where people are interested and asking interesting questions.”

One respondent brought up the “people-watching” aspect of a group experience.

I also enjoy watching the interplay of participants...it’s always fun to watch the people. I don’t know if you remember the older lady, she was all covered up? She seemed like a very prim and proper lady ...she was very sweet but she was clearly a different social class. Her perspective seemed very different from most of the other people there... I like to see how people think about things.

Another visitor described how she enjoyed watching the interplay of children in the group.

I think it’s fun to see the other families and all the kids, and it’s obviously a brief interval, but the kids potentially interacting and looking at each other’s findings.

The opportunity to meet and interact with like-minded visitors was another reason for going on a group hike. One interviewee stated,

Bird watchers are pretty nice people, much nicer than you get (by the way) when you go on the average [commercial] tour. Much more considerate. Much more willing; they’re excited about what they’re looking at and they talk about it, they share that knowledge. Nobody hoards his knowledge.

Addressing the difference between people on nature walks and those on commercial tours, the same individual later described his experience on a commercial bus tour as “worse than ‘Snakes on a Plane’.” For this person, the company of congenial, like-minded visitors was an important factor in selecting an outing.

Other interviewees simply enjoyed the socializing, “Just talking to people... I just find it fun walking with a group.” “You generally meet some interesting people and have a little social experience that you don’t normally get when you’re walking alone.” “It’s fun to meet interesting people.”

Pace

*Component Codes and Categories: Challenges (Cs, Cph),*

Pace is an issue that arose spontaneously in discussion, and also when visitors were asked to talk about the difference between guided walks and walking alone. References to pace appeared in more than half the interviews.

For people with different motivations, pace presented different challenges. Most respondents said that a guided walk forced them to a slower pace, which could be frustrating. One interviewee commented that walking alone “I move more quickly,” and that one of the frustrations of having small children in a group is “dawdling...going a little more slowly than I’d like to go.” Someone else noted, “Walking with a group there’s more pacing issues,” and another commented:

I’ve been a part of some other guided groups where the group did affect the experience, because either they weren’t all that fit, and extremely, extremely slow and it got really boring.

However, some of the same visitors indicated that a slower pace made it possible for them to see details that they would not have, had they been walking faster. In addition, walking faster requires more attention to footing, which then distracts attention from the visitor's surroundings.

We probably would have walked much more quickly, and we might have actually covered more territory but we wouldn't have learned anything new, because there aren't any interpretive signs, there was really nothing that would have indicated things like the change in the growth of the grasses, the different types of grasses, and how the sea, the tides and so forth have been affecting the habitat and changing the habitat. We probably wouldn't have noticed some of the birds and nests. I might have seen the Baltimore oriole flit through, but I certainly wouldn't have seen the nest. There's a lot of small detail that someone who has been over the trail a lot and is trying to pick out interesting things to show people, that you would miss when you're just on your own. And walking, you look down a lot more, you're not looking up. When you go faster you're also not able to look around as much.

It should be noted that all the respondents were experienced hikers in good physical condition, accustomed to finding their footing on challenging and uneven surfaces. Less experienced or less fit trail walkers might have been more comfortable at a slower pace.

### *Guide Codes and Clusters*

Guide interviews were characterized by many more different codes per interview. This reflects the complexity of the guide's role. In addition to experiencing many of the same motivations and reactions as visitors, guides were at the same time confronting and acting upon the myriad issues, decisions, and challenges that are part of their role.

### *Logistical Decisions*

*Component Categories: Logistical decisions (Da, Dc, Dd, Df, Di, Dl, Dn, Do, Dp, Dph, Dw, Dx, Dy, Dz), Challenges (Cf, Cp, Cs, Cue, Cuv)*

The key theme that emerged from guide interviews was the need for constant and unrelenting decision-making. These relate to both logistical and human factors. From the logistical point of view, guides need to address issues such as weather (current and forecast), group size, the capacity of target destinations for crowding, the presence of other groups, the timing of natural phenomena such as tides and daylight, the likelihood of locating wildlife at a particular place or time, accessibility and the physical condition of group members, and safety issues. Since these factors change constantly over the duration of an excursion, a guide must be constantly aware of, and adjusting for, these factors. Guides are continuously deciding where to go, what trail to take to get there, where to stop, how long to stop, where to find shade, safe footing, more wildlife sightings, less poison ivy. “Larry” gives a comprehensive summary:

I’m trying to feel out what the natural setting is like, what the tide’s like, what the weather’s like, what my feel is for what wildlife is like. Just kind of on the fly I can usually get a good feel for that as we start. That starts to happen as we get towards the marina, as we get on the boat, and then of course when we set foot on the island and we’re wading in the water, then it starts to kick in that I’m noticing those things about how the dynamics of the physical conditions are setting up for the walk.

“Laurie” describes the factors that she evaluates when leading a family walk:

I always stop right at the beginning to give an overview... Usually my decision on whether to stop at the dock overlooking the pond where the painted turtles are, depends on how many people there are and if there’s already visitors on the dock, ‘cause obviously if there’s 20 people on my walk and there’s already a couple of people on it I can’t fit everyone... I always quickly go on the dock and see if there’s turtles first before I lead all 20 people on... And then there’s this little overlook with steps... Depending if there’s people up there and if there are little kids that are getting really tired sometimes I don’t stop there... Sometimes people just want to start catching stuff, so after my first maybe two stops I’ll see if they seem really interested and then I’ll stop more if everyone’s on the same page. ...Accessibility is probably the main reason why I’d stop somewhere as opposed to not.

## People Issues: Working with audiences

*Component Codes and Categories: Challenges (Ca, Cc, Cd, Ci, Ck, Cp, Cph, Cu, Cuv, Cv, Cz), Visitor Characteristics (Vd, Vt, Vy), Kids (Ka, Kk, Kp)*

As “Laurie’s” comments demonstrate, while they are considering logistics, guides are by necessity simultaneously assessing and addressing the personal needs and interests of their audience. After describing the initial physical logistical factors, “Larry” continued on to describe how he evaluates each trip audience:

The thing I’m probably noticing first as I prepare for the walk, is meeting the people. Generally I get a pretty good feel of what to expect from them, and what I need to target as far as being a guide, just based upon my first impressions and just a few introductory questions. ...So in the case of that walk I saw that we had some birders, we had some kids, and it sounded like we had some people that were a of more experienced level with this type of environment – the coastal marshes and the barrier islands – and other people that had never even been out on a boat ride, it was a big deal for them.

The most frequent “people-related” codes for guides involved the challenge of dealing with mixed audiences, difficult individuals, and the group dynamics that evolve from these situations.

Guides were especially challenged in family outings that contain both children and adults. “Hank” notes:

I have no problem doing children’s programs, I have no problem doing adult programs, but to try to satisfy a mixed audience, it often gets to the lowest denominator, which is the interest of the youngest kid. Sometimes the rest of the group embraces those younger kids; other times they become a distraction. So often the most difficult, is trying to be able, in one walk, to satisfy a 4-year-old and an 80-year-old...I sometimes have trouble finding my voice for a mixed audience.

Guides in this sample tended to specialize in working with either children or adults (only one respondent had experience with both kinds of groups). Not surprisingly, those who were

accustomed to working with children felt challenged or uncomfortable with adult groups, and guides who had more experience with adults sometimes felt at a loss with children. A guide who does not often work with children commented about the youngsters on his excursion, “that’s probably the biggest challenge [having children on a hike], because there’s not a lot of hands-on, fun things to keep the kids involved.” Another stated,

I’m probably speaking over the heads of the younger kids...I probably use a few too many bigger words. I’ve never been formally taught as an educator, and I’m almost ignorant of the trends...I’m a big guy, I’m a hairy guy, and I might scare some of the kids.

Conversely, people who are accustomed to working with children can feel inadequate when confronted with adult interests. Talking about the questions that adults ask, “Jane,” who generally leads children’s walks said, “They are just questions that are more in depth...I get more nervous...they ask questions to a different level.” Another guide accustomed to leading children’s programs who occasionally has adults on her trips indicated, “I always get kind of nervous when that happens.”

Despite expressing inexperience with different audiences, and expressing feelings of inadequacy in that respect, guides evolved their own methods to work with different ages and levels of visitors. “Hank,” the guide who refers to himself as “big” and “hairy” used parents to engage with the children (as opposed to engaging with them directly). “I guess I use the parents a lot as a translator...so they often become my allies.” At the same time, he expresses uncertainty about his own effectiveness in working with kids. “If I take a school group up, the teacher’s raving about me, but I’m wondering if I’m satisfying the teacher, or if I’m satisfying the kids. I can’t get that feedback from the kids very often.”

When talking about how he chose an itinerary for groups with widely varying ages and/or interests, “Larry” said, “I feel the most comfortable having opportunities to make as many people interested as possible.” He also talked at length about the issue of dealing with a mixed audience on a particular excursion, which involved a short boat ride followed by a fairly long walk across a barrier beach and tidal flats. In this case, visitors included adults who were not familiar with the terrain (sand, mud, and marsh grass) or its wildlife, a grandmother with two children (“...they weren’t necessarily ready for what they were about to get into”), and several avid birders.

A lot of people end up on the trips like those because it’s a boat ride, and because they get to go to an island that they’ve never been to and anything after that is just icing on the top. And so on this trip specifically, noticing the mixed level of skill and interest, it’s a fine line. I don’t want to say keep it simple, but you’ve got to keep simple themes and points to make, and connections to make with them – first the wildlife, obviously, and then every once in a while you make it a little bit more advanced and science-y with the goal of targeting certain people that might appreciate more identification detail with a certain bird ...One of my goals was to find moments to stimulate people with a little more specific interest or skill of maybe birding or science background, while still keeping everybody with it.

An additional challenge for this guide was a young teenager who was an avid birder, and demanded a great deal of attention.

Honestly, that was my biggest challenge, because this 13-year-old boy, he made it more of a birding program than I was trying to make it, and I had this sense that a lot of people were, like, All right, enough about the birds. ...especially one grandmother with her kids had enough of him trying constantly to steal the thunder. And I remember thinking to myself, In another setting I would just love this opportunity to share with this boy this excitement he has for something that I also probably felt the same way. But he had no filter or control over it, and so I struggled to keep us, to keep me focused on making sure that every time a bird flies by I’m not just trying to identify just for him, because he’s doing it for himself, just yelling out, so that was a challenge that I hadn’t really anticipated with a 13-year-old.

Visitors with different needs or problematic attitudes posed a challenge for guides not just because of the difficulty of dealing with them individually, but because they affect the group dynamic, as demonstrated in the paragraph above. Other group members noted this as well. One respondent quoted earlier stated “The other people in the group were kind of wet noodles... I felt like they were dragging the whole energy of the walk down.” Other visitors, also as noted earlier, mentioned group members whom they perceived as unsociable or impolite.

When asked about his greatest challenge for a particular excursion, “Larry” described a man “who was far less interested in being there than his wife was” who later appeared to be “having some difficulty with his back pain.” The guide continued on to say:

I noticed pretty early that he approached me with questions that were just a little bit more, not necessarily abrasive, but a bit more blunt and maybe felt a little bit more defensive. You know, like, ‘What is this place?’... I felt like he was testing me or something. I felt a bit challenged by that, because it’s difficult to see someone, even if it’s not by my doing, even if it’s just their discomfort, obviously not enjoying themselves. It’s difficult to not let that creep in to my perception of how things are going.

As the walk progressed, the guide made continuing efforts to reach out to that individual.

I was really making a concerted effort to make lots of eye contact for that gentleman as the walk went on... so that was my challenge, to stimulate him and not feel like he was being a grouch. That changed a little bit when I realized he might be suffering from some physical discomfort. And knowing that, and not being able to see that until I overheard his wife saying “Is your back bothering you really bad?”. But that made me feel a little bit more, it’s out of my control ...I’ll try my best to keep him interested, but, understanding that it’s going to be hard if he can’t even stand up straight. I never really had someone end up on the walk that was in physical discomfort where it was really noticeable. I could hear him sighing and stuff, sometimes, so I’m thinking, Gosh, I could stop talking if you want. It was certainly the biggest challenge.

In this case , the guide eventually realized that he was dealing with an issue out of his control, but still felt that he needed to address it as best he could because “I can’t let it mess up

the experience for anybody else.” For “Larry,” the turnaround point for the walk, watching the sun set from the sanctuary beach, was a point at which he tried to unplug, as it were, from the role of guide:

...just stop the talking and see if the people will slow down and see what an incredible view it is. Usually they do that. Sometimes it takes a little while. I was worried about that one gentleman, if he was going to be ready to move on, but he got a seat on the bench, and I feel like he actually really enjoyed himself at the beach...I feel like at the end, the couple with the hurt back, they were really glad they had gone...[I feel like they were] pleasantly surprised. Yeah.

This example demonstrates how a guide identifies an individual who can potentially affect a hike experience for other visitors, attends to that visitor as best he can, and ultimately achieves a positive outcome.

“Laurie,” who usually led family walks, described experiences with crying or cranky children. In fact, the first point she mentioned when asked what she noticed, was one especially difficult child.

I remember one of the kids was really cranky. He started out really cranky, so it’s not like it had anything to do with the walk...So I know it has nothing to do with me, but it always gets kind of, not distracting, because the walk still went very well, but I feel badly when a kid is acting up, even if I know it has nothing to do with me. I remember that as challenging because I think I had to talk over him at one point toward the beginning... when there’s one child that’s in a bad mood sometimes that’s challenging.

As the two previous examples demonstrate, experienced guides know that visitors who pose challenges may have issues that are unrelated to the guide and his or her competence. Understanding that “it has nothing to do with me” helped guides to avoid reacting defensively or personally to a problematic visitor or situation, and ultimately, enabled them to work objectively

with the visitor to resolve the situation – be it a demanding teenager, a hiker with a bad back, or a cranky child who has missed a nap.

Attending not just to individuals, but to the whole group dynamic, was another role for which guides feel responsible. Managing not just the physical problems and attitude of one individual, but the resulting dynamics of the group, is a social and psychological task requiring sophisticated people management skills.

### Learning and Guide Expertise

*Component Codes and Categories: Challenges (Ca, Cx), Professional frustrations/dissatisfactions (Fe, Ff, Fq), Guide goals (Gl, Gd), Rewards (REb, REl, REx)*

As with visitors, the cognitive theme ran strong in guide interviews. In the case of guides, it involves wanting visitors to learn, being able to deploy their own expertise, feeling pride in this expertise, wanting to share knowledge, and at the same time, eagerness to learn more themselves.

In some cases, guides felt insecure about or frustrated by what they perceived as their lack of knowledge. This insecurity arose from being asked questions about a specialty or area with which they were less familiar or secure. Being prepared and able to respond to questions is a skill that guides valued, and they felt uncomfortable when they couldn't answer questions, or at least refer to their reference material. "Jane" commented, "...I couldn't remember the stats or some things – usually you remember one thing and that segues into other things related and unrelated. And because I didn't have that, I felt that I wasn't as prepared as I try to be..." A guide who leads a night hike feels that one of the challenges is that "I don't have resources [such as field guides] at my disposal right then and there." This individual added, "I'm a generalist so I

know a little bit about everything but I honestly don't have the time to know in depth about everything. And particularly on the night hike, I feel that's more evident." Another expressed frustration at not having sufficient time to prepare programs. "After a trip, or during the week or preparing for the next one, with everything else I'm supposed to do, it's hard for me to decide what to do differently, or how to make it better." This comment also reflects the high expectations and standards that guides had of their own performance:

I have high expectations of myself... I hope that I'm as enthusiastic as I was in the beginning, but also that I maybe have learned something... Like, I will have been asked something, or someone will have shared something that for myself, spurs me on to do some more learning.

Guides were acutely aware of the areas in which they lacked knowledge or felt insecure. Visitors on trips with guides who admitted to insecurities demonstrated a corresponding awareness of both the strengths and shortcomings of their guide's knowledge, and were also surprisingly cognizant of these guides' insecurities. One guide who was confident about working with children, and less accustomed to working with adults, admitted as much to her group, perhaps as a way of apologizing for shortcomings. She also explained to the interviewer her lack of knowledge about insects, saying she was primarily a generalist and a horticulturalist. One of the visitors in this guide's group commented during the interview that she was disappointed by the lack of information, and that the guide's inexperience in dealing with an adult audience should not be an issue:

I think that in reality, if the walk is meant to educate, say, 10-year-olds, it can educate adults. And we never quite got into that, we just spent more time walking and she said, "Listen to how many different sounds," not knowing what those sounds were, that was surprising to me. What are the different bugs that live on that little pond? The ones that you're hearing right now is, the common cricket, and peepers, and, even if it was just a matter of a picture. ... I also think that there's a certain amount of preparedness that you expect, and that the different parts of the walk have

different reasons for going there. So if we went to the pond, there [should be explained] a specific bullet point that was the reason we walked past the pond at night.

“Tom” confessed to the interviewer a lack of skill and experience working with children.

“That’s probably the biggest challenge.” A visitor on the same hike noted:

I was a little bit disappointed in the way he presented the walk to the children. I don’t know if you noticed, but the children pretty quickly lost interest, and that was unfortunate. I don’t know what he could have said or done that might have made it a bit more interesting for the kids.

This same visitor took on the responsibility for engaging the children, inviting them to look through his spotting scope, asking them what they saw, and how they might explain what they were seeing.

Interviews with both guides and visitors from the same trip demonstrated that guides can be quite cognizant of their own weaknesses, and that their self-evaluations in this respect were often accurate, as visitors indicated that they may be aware not just of a guide’s lack of knowledge, but of the guide’s insecurities on that same subject.

## Passion

### *Component Codes and Categories: Rewards, (REa, REc, REg, REt)*

In the same way that visitors valued passion and enthusiasm in a guide, guides enjoyed engaged, enthusiastic visitors. Discussing a visitor’s children, “Jane” commented, “Her teenagers were totally engaged in it. And it’s just so cool to see teenagers open-minded and wanting to learn.”

“Larry” liked interested visitors because it created interactivity:

Having engaging people on the walk makes things much more easy for me... when they engage me, when they're curious back to me, and it's not just me talking at them. It's difficult sometimes in a setting where I'm the one leading the walk, and I'm the one giving them this experience, to not want them to approach it as if it were a movie or something, where it's not interactive, you know? This is very interactive, and that's one of the best parts of a walk as far as I'm concerned, is the back and forth of the talks and the questions and short little bits of conversation that relate to something we see, but ties them back to their own experience at home or ties them back to something else they've seen before, which, it's not possible if they don't open up and engage.

To encourage this engagement and interaction, "Larry" sought out personal information about the visitors on his trips. "That's why I do things like try and figure out where people are from, if they've been to our sanctuary before, if they've been on our trails before... I want us to share as much we can with each other."

"Laurie," who led family oriented programs, also enjoyed spontaneity, and being able to leverage off the interests of visitors:

Definitely I like it when the kids are more inquisitive because... it shows that they're listening. I really never had a walk when people were completely bored. Usually they like catching things [small salt marsh animals] but I like when I'm not having to think off a script. I like when it's spontaneous and vague, you know? Because that shows that they're interested and I like it.

Guide Goals: Excursion outcomes

*Component Codes and Categories: Goals (Gj, Grt, Gsh, Gby, Gc, Gi, Gn, Go, Gv, Gx, Ga, Gd, Ge, Gg, Gh, Gl, Gm, Gp, Gr, Gs, GSt, Gt, Gvv, Gu), Outcomes (Oa, Of, Oi, Or)*

As the list of codes indicate, guides expressed a wide variety of goals and desired outcomes from their trips. These included facilitating an aesthetic experience, helping visitors focus on nature, raising visitor overall environmental awareness, raising awareness of the site habitat and its importance, meeting their own needs for stimulation, and meeting their expectations of their own performance. Only one goal was common to four of the five guides, and that was having visitors return to their site. Guides also expressed a desire that their trip

motivate visitors to seek out other nature places. Associated with this in many interviews was the hope that guide efforts sparked a visitor interest in nature or a connection to nature, created nature stewards, or motivated visitors to join their sanctuary community as members and/or volunteers. Many of these goals were interconnected. When asked about trip outcomes, “Hank” commented:

I hope they had an enjoyable time. I hope I’ve made it somewhat humorous or fun, and if I’ve done my job well hopefully they’ll come back for another program...we rely so much on volunteers here...and every once in a while one of those volunteer naturalists is someone, I’m gonna say I didn’t recruit, but might have sealed the deal. They might be a naturalist because they liked what I did...I think that’s the biggest reward of all, getting return customers. The other is watching people who could give their time to any organization and they decide to give it to us. So those would be wonderful outcomes.

“Hank” also had a perspective on his role that was unique among respondents, perceiving himself as a salesperson (“I don’t think it’s unlike to say that I’m a salesperson for [this Mass Audubon sanctuary]”) and visitors as customers. When asked about goals for her excursions “Jane” replied:

I’m hoping that they will learn something, but not necessarily...I’m hoping that I will have sparked some curiosity in in them, or they will have sparked it in themselves, or have a discussion about it later, or honestly, maybe they’ll join Mass Audubon.

While all guides indicated that one of their objectives was to have people learn, only one respondent specifically discussed “educating” visitors. Most talked in terms of generating curiosity (like “Jane”, above), or referred to sharing their knowledge, experience and love of nature. “Jane” also commented “...it’s a way for me to [discuss] what I really love...Because I love sharing that stuff.” “Larry” used the same term as “Jane” (“spark”) and stated:

I think that my own personal feel of what's important, and the reason I do this work, and what I'm constantly and sometimes subconsciously trying to do, is spark that interest or connection...a connection with what is very important about a natural relationship, or a relationship with nature, and obviously [to me it] is very strong, and I hope to share that with people.

“Larry” also related a connection to nature with the generation of stewardship:

The reason I do this work is because I hope to foster this connection...give people this kind of connection that is different from what they have. I feel strongly [that] humans get the front seat all the time. I feel more strong more strongly that there's a benefit in us developing this connection with people, the animals, the wildlife, the natural history, the ecology...it's my role in conservation. But I'm doing it as much specifically for the birds as I am for the people.

Larry also explicitly recognized the social aspects of a trip, referring to visitors as “guests.”

One of the best parts of a walk is the back and forth of the talks and the questions and short little bits of conversation that relate to something we see, but ties them [visitors] back to their own experience at home or something else they've seen before. And that's why I do things like try and figure out where people are from, if they've been to our sanctuary before...it helps me make the experience a little more casual and friendly ...which I think helps people understand that it's not just me talking at them. I want us to share as much as we can with each other.

## **Researcher Observations**

In addition to interviewing visitors and guides, the researcher made observations for each trip, to note events and interactions and provide triangulation for recollections and observations by guides and visitors.

## *Social Interactions*

The initial research plans did not explicitly include the observation of social behavior. My intent was to accompany excursions in order to note such factors such as weather, terrain, and interpretive approaches used by the guide.

However, I immediately noticed that extensive social interactions take place on these excursions, and that they integrate the topics and issues presented by the guide (e.g., species migration, climate change). Further, while both guides and visitors actively engage in these social exchanges, they rarely make explicit reference to them during interviews. In other words, this is a social phenomenon that, while ubiquitous, is not explicitly recognized by its participants.

Over the course of seven excursions I observed the following kinds of interactions:

- Facts or concepts presented by the guide generate questions from the visitor group, which are in turn answered by the guide. The guide's answers generate further questions from the group – a kind of question-and-answer ball toss shared by listeners and guide.
- Facts or concepts presented by the guide generate personal examples from the group. For example, when a guide mentioned climate change, someone responded with a phenological example from personal experience. This generated other examples from other participants, which were heard by the group surrounding the guide, and subsequently shared with visitors coming up the trail at the end of the line.
- Facts or concepts presented by the guide generate subsequent sub-group discussions among participants as they continue to hike. These range widely, from direct discussion of the

concept or topic, to personal experience related to the topic (for example, phenological examples of climate change, or experiences with protected species). In particular, the climate change topic originated by one guide generated many side discussions, which reiterated and expanded on the points made by the guide, and even ventured into political aspects of the issue.

- Participants share observations and findings among each other, even if the guide is not immediately present or does not notice these observations. For example, on one walk a teenaged son of one of the participants was continually picking up and examining objects that he found curious; his mother would exclaim, and this attracted the attention of other group members, who passed the object around and conjectured as to what it might be. The question was resolved in one instance when the teen interrupted the guide (who was in the middle of a discussion on another topic) by asking, “What is this?” The guide answered, and returned to his discussion, but the small group around the teen and the object then continued on their own discussion of the object and its meaning (it was a “mermaid’s purse,” the egg case of a skate). In other cases, participants noted a plant, object, or habit when the guide was not nearby (“Funny how that flower always grows in those little clumps.”) In these instances, participants conjectured among themselves as to what the plant/flower/bird might be, or the reason for its growth habit.
- Participants share experiences with each other. Many of these are nature- or travel-related: “We have that flower in our yard.” “I saw something just like that in Costa Rica.” “Have you been to Point Reyes? If you like the programs here you’d love it there.”

- Trips have phases, and socialization tends to occur during the return phase of an excursion.

At the start of a trip, visitors remain in their initial social groups, and initially, interact within their family or friend units. During the middle of the trip, and especially the return phase, visitors interact more across groups, exchanging experiences and narratives, and finding common ground and contrasts (e.g., places visited, travel experiences, ages of children and/or grandchildren, home region).

These observations reveal that social interactions during a guided hike or walk can be a major source of knowledge exchange and constructive learning. The sharing of experience, ideas and information bonds members of the group together, which encourages further sharing and learning. In addition, the recollection and observations of visitors during interviews reveal that a guided hike is a highly social environment – one in which norms and their observation (or violations) are noted and remembered, personalities are observed and later recalled, and social interchanges with other visitors and guides are recollected and valued.

### *Guide Interpretive Techniques*

In order to facilitate the identification of interpretive approaches used by the guide, I developed the Interpretive Methods Checklist (Appendix A). Because my role and recording methods changed from unengaged observer to researcher-participant, I was unable to complete the checklist during excursions, and consequently filled it in after each trip as I recorded my field notes. However, the completed checklists reveal only that every guide used at least 15 of the 21 listed interpretive approaches, with each guide deploying a different combination of methods

(and in one case, utilizing a different set of methods on three different trips). My chief observation, therefore, is that on any one trip guides relied on a wide variety of interpretive techniques:

- Cognitive
- Cognitive-relational (unlocking layers of meaning, developing unexpected links between different facts and trip elements, deconstructing myths, presenting themes, using a holistic approach, analogies and metaphors, and narrative techniques)
- Constructivist (engaging the audience with activities and questions), sensory (word pictures, sensory awareness)
- Affective (appeals to emotion, provision of emotional responses and cues, creating a sense of safety or danger)
- Self-focused (facilitating reflection, encouraging reminiscence)
- Social (engaging in private conversations, promoting group socializing and bonding)

### *Visitor Empowerment*

A phenomenon observed by the researcher, but not noted by visitors, was the transference of location and description skills from guide to visitors. Several guides gave tips on how to locate a bird using binoculars. One guide, in addition, made a point of instructing visitors how to describe a bird's location to others. In this way, an individual who located a bird in a tree was given a system for showing other visitors how to locate that same bird. In this way, all participants in the group became enabled watchers, with the ability not just to locate a bird by themselves, but to effectively point it out to others. This kind of visitor empowerment is

common on whale watch cruises, where guests are instructed to shout out the position of a sighting using a clock metaphor ( i.e., “spout at 1 o’clock”). Having a boatload of people to identify whale sign ensures that more whales will be sighted (than if the guide were the only identifier). In addition, visitors with the skill to locate an animal and transfer that information to others will continue to be a resource for companions long after the guide has departed and a particular excursion has ended. This visitor empowerment (the ability to transfer a valuable skill to someone else) was not explicitly recognized by either the guides or visitors on the excursions in the sample.

### *Emotional Affect*

The only guide who explicitly expressed a goal of creating an emotional outcome or response was “Larry,” who led two excursions that highlighted and culminated in a sunset over the ocean. Of four respondents who went on these trips, two commented on the sunset experience. One prosaically recalled, “I think the sunset was nice and it was timed well.” A woman on the same walk noted “The sunset was spectacular. The sky at that point was still really, really blue and the clouds were pink...it takes your breath away.” Other respondents on these same excursions noted wildlife that they saw or information that they learned, and made social observations. But only the two quoted above mentioned the element of the experience that was intended to be the highlight of the trip, despite the fact that the location itself generates expressions such as “peace,” “serenity,” and “comfort.” Visitors on these walks spent the sunset time at the beach variously sitting on benches or sand and watching the sunset, walking on the shore or wading in the shallows, and observing shorebirds across the marsh. However, none of the respondents described these activities. It is possible that they were reluctant or

unaccustomed to discussing these more reflective, inner-directed aspects of experience; interview questions were not focused on eliciting these types of responses. Alternatively, visitors did not judge them worth recounting, but this study provides no evidence for either speculation.

## **Summary**

The findings of this experiential study reveal strong visitor themes centered around learning and understanding, seeing and identification of animals, desirable qualities in a guide (expertise, enthusiasm, social skills), as well as feelings of restoration and refuge. Dominant guide themes included logistical issues and challenges, concern about the adequacy of their own expertise and skills, and the desire to generate visitor environmental awareness, connection to the natural world, stewardship, and engagement with place. The most unexpected finding, however was the key importance of social issues in the excursion experience, for both visitors and guides. The social aspects of a group excursion – norms, group dynamics, interactions with others – comprised a major part of participant discussions. In addition, these social factors were often the first subject mentioned in an interview, in response to the question, “What did you notice about this trip?” Researcher observations reinforced the conclusion that social interactions form a critical part of the guided nature experience: in addition to sharing personal narratives and conversation, visitors exchanged questions, knowledge, observations and conjecture about what they were seeing, hearing, and learning from the guide.

In the next section I explore theory and research that might help to explain the prominence of social factors in the guided nature experience.

## **Chapter 5: Socially Shared Cognition**

The purpose of this study was to explore how the process of interpretation affects a nature experience by examining the role of the interpretive guide, and of interpretation itself. The questions I sought to answer were:

- What are the ways in which interpretation influences a short-term nature experience?
- What role or roles does the interpreter play in the experience?
- What role does the act of interpretation play in the experience?
- Why do visitors choose guided nature experiences?
- How do guides choose the interpretive approaches that they deploy?
- What is the relationship between the approaches used by interpreter guides and the nature experience?

The major finding of this study was the significant role that social factors play in an interpretive nature experience, for visitors and guides alike. In addition to their affective properties as a source of both pleasure and irritation, social exchanges represented an important source of knowledge exchange and learning. The phenomenon was self-reinforcing, as the sharing of experience, ideas, and information among visitors promoted further interaction and acquaintance, which encouraged further sharing and learning. The shared nature experience thus took on aspects of a social forum: for personal discussion, the sharing of information, the exploration of ideas, and the formation of theory (constructive learning). Another key theme was visitor motivation to learn. This was associated with related factors such as the expertise of the

guide and the desire not for mere facts, but for understanding: of ecosystems, and the relationships between animals, plants, landscape, and climate. Visitors also focused on the personality of the guide: his or her passion, charm and “people skills,” and the ability to manage group dynamics. From the viewpoint of the guide, social factors were also extremely important: the challenges of managing group dynamics, and sustaining the interest of groups composed of individuals of highly varied age, knowledge and nature experience.

The single largest code category after learning centered on social issues: group dynamics, norm violations, and the opportunity to learn, not just from the guide, but from other visitors. The prominence of social factors in both visitor and guide experience indicate a highly social role for the interpreter, and the for process of interpretation itself. In addition, the close relationship observed between socializing and learning activities occasionally made it difficult to distinguish between them (e.g., should a particular element of a conversation be categorized in code as primarily social, or learning, or both). What theory or model might explain the observation that learning and socializing were so intimately associated? I sought an explanation for this phenomenon in the literature concerning the role of social experience in nature, and in learning.

I began by reviewing studies that explore the group nature experience. Nature experience in America has often been viewed through the perspective of solitude. The historic tradition of American nature writers, beginning with Thoreau, associates nature experience with wilderness as perceived by a solitary individual (Nash 2001, Hollenhorst and Jones 2001, Crane 2012). The rise of tourism, however, meant that people increasingly entered nature in organized groups. Ek et al. (2008) point out that tourists do not necessarily experience the world through a solitary

romantic gaze (Urry 2002), but often in the company of family, friends, or partners. Many people today enter natural landscapes in groups, and these groups constitute part of the experience. Studies examining the group nature experience have identified the phenomena of learning and narrative creation, addressing both meaning-making and the “co-creation of experience,” as I discuss below.

I then reviewed the literature that examines learning itself in a social context. This body of work reveals the phenomenon that has been termed “social learning” – a concept critical to understanding and explaining the social interactions observed in this study. I began by considering classical learning theory, especially the work of Piaget and Vygotsky, and their focus on “constructivist” learning – the hypothesis that people actively construct learning from experience, and that this process is highly social. I also explored meaning-making itself, as well as more recent studies that probe the relationship between learning and social activity, using the constructivist and social aspects of learning as a framework.

The field of “informal learning” also provided many insights: learning that occurs in unstructured settings such as zoos, museums, and historical sites. This self-directed activity often involves groups of friends and family in a highly social context. Studies on informal learning frequently utilize methods that provide a granular, detailed look at how learning happens, describing the precise conversations and interactions that enable visitors and participants to make meaning of a learning experience. I therefore completed my review of social cognition by examining studies of informal learning, and the specific conversational elements and social interactions that transpire. These elements correspond closely to the conversations and activities observed during this study.

The sections below describe my journey through the literature of social learning and meaning-making.

### **Social Elements of a Group Nature Experience**

As indicated above, a group nature experience has characteristics that distinguish it from the traditional, classic concept of nature experience as solitary. These characteristics describe a class of nature experience that broadens to include social interactions and issues.

Ittelson et al. (1976) define environmental experience as having five modes, one of which is social (the other four are physical, expression of self/aspect of identity, emotional, and as a setting for action). Falk and Dierking (2011) characterize museum experience as involving interaction among three contexts: personal, physical, and social. Since it has been identified as a key element in experience, it is not surprising to find social context as a key aspect of a group nature experience. Brooks et al. (2006) examined relationship to place (Rocky Mountain National Park), and identified three themes: time/experience, self-identity affirmation, and finally, physical and social interactions in and with the setting that “allowed meanings to accumulate.” “Visitors co-create experience through impromptu interactions with companions and the setting” write the authors, citing Altman and Rogoff (1987), McIntyre and Roggenbuck (1998), and Stokols and Shumaker (1981). In a comparative study of two wilderness trips, Fredrickson and Anderson (1999) identify the key importance of social aspects:

...the affective appeal of a particular place setting has as much to do with the social interactions that occur there, as with the overall visual appeal of the landscape itself. In effect, this study showed that the social dynamics between group members played a large part in interpreting the wilderness place setting as spiritually inspirational, and in turn, the wilderness experience itself was also heavily influenced by the interpersonal interactions that had occurred...

In a similar vein, the 1993 Arnould and Price study of river rafting trips identified “connecting to others” as one of three main organizing themes of a river raft trip (the other two were communion with nature, and extension and renewal of self). The authors cite “an evolving feeling of communion with friends, family and strangers,” the development of “norms of cooperation,” and *communitas* that developed not just among the visitors, but between visitors and guides. Scherl (1990) points to social setting as one of two predominant aspects of an adult Outward Bound experience (the other being Self). In journals kept by participants, Scherl identified six kinds of social setting comments: descriptive (describing what others are doing), leadership (actions by guides), feedback (exchanged with others), support (the extent to which others are helpful or supportive), involvement (group cohesiveness), and performance (how well the group, or someone else, performs an activity). As confirmed by Scherl’s work, and in the research described in the current study, nature excursion participants are highly aware of social surroundings and actions as they affect themselves and others. Borrie (1995) argues that “an individual wilderness experience is also understood by the visitor...in the context of other group members’ meanings.”

A study of canoeists in the Okefenokee Wilderness (Borrie and Roggenbuck 2001) examined the experiences of contemporary visitors, comparing them against the descriptions of wilderness philosophers such as Muir, Leopold, and Thoreau. Where the nature writers described awe, humility, and transcendence, the study participants had a very different experience:

For the most part, Okefenokee visitors did not experience their wilderness quite this way, nor did they have these kinds of very intense feelings. Their highest focus was on other members of their group...feelings of oneness, primitiveness/humility, apparently so important to the wilderness philosophers, was only of mid-level importance to Okefenokee users.

Acknowledging that a variety of reasons exist for these differences (including the fact that the wilderness writers were “literary giants,” who reflected extensively on their experiences), the authors conclude that today’s visitors might well also “construct their experiences quite differently than in the past.”

In the tourism context, Wearing and Wearing (2001) argue for a postmodern reconception of the tourist experience, in which the tourist is not an objectifying observer (“flaneur”), but inevitably involved in social interactions, which help construct meanings as well as a sense of self. Again in a leisure/tourism context, Vespestad and Lindberg (2010) define the tourist as someone continually seeking to construct meaning, recognition and identity from a group; they deploy the term “tribe” to describe likeminded travelers.

While many of the examples cited above refer to extended wilderness experience, the importance of social elements – and, one could claim, the inextricable embeddedness of social factors as part of experience – argues that even a short group excursion bears a social factor that affects the quality of the experience, and as we have seen demonstrated in other informal learning venues, the quality of learning.

### **Learning in a Social Context**

Learning theorists such as Piaget and Vygotsky proposed that learning occurs when a mental model of the world develops through experience (as opposed to the rote acquisition of facts), and through interaction with others. This theory of learning as an active and creative response to experience is called constructivism. In the current study, groups of visitors did more than just listen attentively to the guide. They conducted conversations among themselves,

exchanging information and theories about what they observed. This behavior is an example of constructivist learning, as visitors developed ideas together in a highly social context. In this section I discuss constructivist theory, the subsequent studies of social, interactive learning that emerge from this model, and how they help to explain the study findings.

### *Classical Learning Theory: Constructivism and the sociocultural context*

Jean Piaget (1968) proposed that humans actively construct models (“schema”) of how the world works by interacting with the world around them. In this model the mind is not a blank slate for knowledge; there exists always a previous framework into which new experience and knowledge must be integrated, and this integrative process is internal to the individual. New information is constantly being integrated into existing constructs which are then modified accordingly to generate a revised model. The conflict between existing understanding and new experience creates a “disequilibrium” which motivates the need to reform or revisit existing understanding.

Vygotsky (1978) placed learning firmly in a sociocultural context by arguing that social interaction is a key factor in learning and occurs through the use of cultural tools. In this model, interaction not just with the world, but with other individuals, is a necessary element for human learning. “...learning awakens a variety of internal development processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers.” Thus, while Piaget developed a model of constructive learning, Vygotsky proposed that human learning is not only constructive, but social in its very essence. Vygotsky’s argument is at the core of the concept of socially shared cognition, defined by Resnick et al. (1991) as

“thinking as social practice.” Resnick contrasts this viewpoint with the formerly dominant concept of cognition as “an individual act bounded by the physical facts of brain and body.”

Thompson and Fine (1999) describe socially shared cognition as diverging from the “symbolic processing” approach, in which “Action is inside the head...Because cognitive processing occurs within the heads of individuals, one must understand the internal mental processes and the nature of the input-output transformations of individuals.” The school of thought based on Vygotsky’s model holds that, rather than being a purely internal, cognitive activity, learning is an integral part of the social human experience and can not be extracted or examined separately from it.

### *Socially Shared Cognition: Recent perspectives and models*

Since Vygotsky, cognitive psychologists have continued to explore the concept of learning as a social, as opposed to purely individual, phenomenon. Different terms have been used to refer to it. In a 1999 review, Thompson and Fine list the following: socially shared cognition, socially shared meaning, group cognition, situated action or cognition, sociocognition, contextualized cognition, social cognition, and shared mental models (Gallagher 2009 also includes intersubjectivity and participatory meaning-making). While these terms have slightly different emphases and meanings, as the authors point out, they do constitute “a collection of ideas and guiding assumptions” that describe “collectively created and shared meaning among individuals.” Thompson and Fine present concrete examples of this “shared meaning”:

- Collective construction of socially agreed meaning (social construction);
- Building an agreed-on focus;
- Establishing agreement as to what is being said or understood (finding common ground);

- Establishing a working consensus (negotiated order);
- Shared recognition of social meaning;
- Taking the perspective of others (intersubjectivity);
- Consensual validation and consensual representation (self-regulation, group tuning);
- Creating consensual identities (social coordination); and
- Normative relativity (symbolic interactionism).

In a 1993 review that defends cognition as “a fundamentally social activity,” Levine et al. present five ways in which social factors influence cognition content and process. First is the “mere presence of others”; the fact that the physical presence of other people can affect cognition positively or negatively. They cite Zajonc (1965), who demonstrated that the presence of others is a source of arousal (later studies by Whiting 2006 and Witte 1990 support the same conclusion), and Hunt and Hillery (1973), who found that audiences may either hinder or help learning. More recent studies (Yinon and Levian 1995, Thomas et al. 2002) also demonstrate that the presence of others affects both task performance and memory. Fonseca and Garcia-Marques (2013) demonstrated the effect of the presence of others on contextual information-processing. Crowding is another factor that has been shown to affect cognition and impair performance (Worchel and Teddlie 1976, Schmidt and Keating 1979, Baum and Gatchel 1981, Whiting 2006). In the context of nature guiding, visitors who choose a guided excursion do so knowing that they will be part of a group. As this study and others have shown, one reason that visitors seek out a guided trip is for social reasons (Farber and Hall 2007). Nevertheless, crowding does affect visitor satisfaction (Manning et al. 2000, Kerstetter et al. 2002, Budruk et al. 2002, Gramann 2002).

The second influence on cognition proposed by Levine et al. reflects social roles, positions, and identities. How people interpret their social position in a group situation affects their own perceived social identity and performance (Anderson and Pitchart 1978, Snyder and Swan 1978, Fazio et al. 1981, Zukier and Pepitone 1984, Wilder 1986, Messick and Mackie 1989, Morgan and Schwalbe 1990, Fonseca and Garcia-Marques 2013). The third influencing factor is “mental representations of others”: the influence of individuals or groups that are not physically present but affect behavior (e.g., “assumed opinions of groups” or individuals deemed to be important, or an anticipated future interaction). Fourth, the authors argue that social interaction itself can generate cognitive change, citing Mead (1934) and Vygotsky (1978), who propose that “people’s fundamental capacities for thinking, as well as the forms their thinking takes, are created in socially shared cognitive activities.” Both Mead and Vygotsky claim that thought is an internalization of social practice; Levine et al. also point out that “cognitive challenges from others” can create changes in individual thinking. Their fifth point is that “cognition is almost always collaborative...At work and in civic and personal life, each person’s ability to function successfully depends upon coordinated cognitive interactions with others...”

Another aspect of social cognition is intersubjectivity: mutual understanding and the process of achieving it. Levine et al. define it as “a shared understanding of what is being discussed or worked on.” Matusov (1996) identifies intersubjectivity as “a process of a coordination of participants’ contributions in joint activity.” He also characterizes intersubjectivity as a “dynamic understanding,” stressing the role played by both agreement and disagreement in an emergent process. Puntambekar (2006) calls it “reciprocal sense-making.” Rogoff (1998) emphasizes intersubjectivity as a process of reaching a common understanding.

“Communication and coordination during participation in shared endeavors involve adjustments between participants...to stretch their common understanding to fit with new perspectives in the shared endeavor.” In this way, a conflict of understanding, or “divergence of perspectives” (Puntambekar 2006) leads to engagement with the ideas of others, and ultimately, readjustment and shared understanding. Specific ways in which groups of individuals generate this shared understanding will be examined later in this discussion.

In “Cognition as a Collaborative Process,” Rogoff (1998) discusses shared focus of attention, which emerges from individually unique perspectives, and an evolving mutual understanding (intersubjectivity). She points to this identification of a common viewpoint, a jumping-off point for coordinated effort and understanding, as critical to shared endeavor. The modification of perspective that occurs during this process “can be seen as the basis for development – as the participants adjust to understand and communicate, their new perspectives involve greater understanding and are the basis for further growth.” This reflects the Piaget model of learning but in a group context: new information creates a disequilibrium, as new experience and knowledge create new perspective. As previously discussed, Ooi (2005) also addresses focus of attention, but in the context of the tourist experience. He proposes that one responsibility of the tour guide is to determine the focus of group attention, an activity that “makes it possible to discuss the convergency of experiences among a seemingly unmanageable group of consumers.” Rogoff’s perspective would seem to indicate that true common understanding and focus result from an emergent process that is a function of the group as a whole – a common modification of perspectives.

Palincsar (1998) maintains that “thought, learning and knowledge” are not just influenced by social factors, but are in their essence social phenomena. She reminds us that thought is “internalized discourse,” a key Vygotsky premise: children develop by internalizing operations and processes (such as problem-solving) that they have initially experienced in an external social context. Exploring pragmatic applications of social constructivist theory, Palincsar addresses the concept of expertise, “characterized not in terms of knowledge structures but rather in terms of facility with discourse, norms and practices...”. In the same vein, Hicks (1995) writes “...learning to ‘talk science’ or ‘talk math’ involves more than just learning a set of linguistic forms; it also involves learning beliefs and values.” This idea of a group, with its attendant shared norms and values, sharing knowledge and expertise, embodies the concept of communities of practice, “groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly” (Wenger, accessed 2015). Wenger (2009) points out that while people tend to associate learning with classrooms, teachers, and textbooks, learning is a part of everyday life that occurs in social groups. “Learning is, in its essence, a fundamentally social phenomenon, reflecting our own deeply social nature as human beings capable of knowing.” In this statement Wenger is essentially paraphrasing Vygotsky’s own hypothesis. The Wenger model posits four key components to a social theory of learning: learning as doing, belonging, becoming, and identity (Figure 5-1).



*Figure 5-1* Components of a Social Theory of learning: An Initial Inventory

Reprinted with permission from Wenger, Etienne. 2015. "Communities of Practice: A Brief Introduction." E-article. Accessed February 2. <http://wenger-trayner.com/wp-content/uploads/2013/10/06-Brief-introduction-to-communities-of-practice.pdf>.

Learning as the result of doing and experience are familiar concepts from cognitive development. Wenger explicitly adds the elements of identity and community to the model, and in so doing, places learning within a community context. For individuals, this model implies that learning is "an issue of engaging in and contributing to the practices of their communities." For communities, it means continuously evaluating their practices to ensure new generations of members; for organizations, it means that, to remain effective and relevant, an organization must sustain its interconnected communities of practice.

In proposing a theory of situated learning, Lave (2009) contends that the process of learning cannot be decontextualized or extracted from the "social world of everyday activity." "There is no such thing as 'learning' *sui generis*, but only changing participation in the culturally designed settings of everyday life." She argues that older models centered on individual, internal

cognition assume that knowing and learning occur in a context where “community, culture, participants, their motives and the meaning of events” is homogeneous. To the contrary, she claims, people “know different things and speak with different interests and experience from different social locations.” “Knowledgeability” is contextual, and learning is a process of negotiating meaning among participants and their differing viewpoints; in other words, an intersubjective collective activity.

Salomon and Perkins (1998) identify four aspects of the social mediation of learning: (1) social mediation of individual learning (the familiar model of tutor-teacher/learner); (2) social mediation as participatory knowledge construction (knowledge is “jointly constructed” as meanings emerge through interaction); (3) social mediation by cultural artifacts (including not just physical artifacts but procedures such as algorithms, and symbolic tools such as language and musical notation); and (4) social entity as learner (e.g., collective learning by organizations, families and teams). Considering the practical implications of this model, the authors conclude that accepting the social nature of learning requires redefining the purpose and conduct of learning.

Learning to learn in an expanded sense fundamentally involves learning to learn from others, learning to learn with others...learning to mediate others’ learning not only for their sake but for what that will teach oneself, and learning to contribute to the learning of a collective.

### *Making Meaning*

Studies and discussions of social cognition such as those described above frequently refer to “meaning” and “meaning-making.” Before proceeding to address learning and meaning-

making in informal settings, it would be well to consider “meaning” itself in the concept of interpretation and informal learning.

The American Heritage Dictionary<sup>13</sup> defines meaning as “That which is signified by something; what something represents; sense; import...That which is felt to be the inner significance of something.” The NAI (National Association for Interpretation) defines interpretation as forging connections between “the interests of the audience and the meanings inherent in the resource.” Reflecting on these definitions together, one is moved to consider the question of who determines the “meanings inherent in the resource,” and whether or not such institutionally-determined meanings are of inner significance to the audience, or of equal significance to its various members.

This researcher would argue that it is the visitor who determines meaning, and that meaning-making, as understood in the framework of social cognition discussed above, can be construed as a social process. Therefore, in this discussion, meaning-making is addressed in its social context. Wenger (2015) writes of the “negotiation of meaning” as having two key elements: participation (actively engaging in the process of community) and reification (the process by which ideas become, in Wenger’s usage ‘congealed’). Discussing meaning-making in the context of mathematical understanding, Seeger (2010) argues that “meaning making is a symbolic practice of development of systems of signs” that originates in human interaction, and that “social meaning is the precursor to conceptual, individual meaning.” He argues that “discourse is the necessary condition for understanding and manufacturing meaning.” Mezirow

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<sup>13</sup> The American Heritage Dictionary of the English Language William Morris, Ed. 1971 American Heritage Publishing New York

(2000) perceives meaning-making as the integration by a learner of new perspectives. This process is occurs in a social context: “meaning is constructed intersubjectively, rather than by the subject in isolation.” The concept of intersubjective meaning-making moves from the theoretical to the concrete in the context of informal learning studies, discussed below.

### **Socially Shared Cognition: Informal and interpretive settings**

The earlier discussion of socially shared cognition presented generalized models of social learning; i.e., models discussed independent of setting. This section will address social learning in the very specific context of informal learning and interpretive settings. (Informal learning has been discussed in contexts ranging from the workplace to video gaming. In this case, however, I refer to learning that occurs in leisure settings such as museums, zoos, and historical and natural sites). Results from research on informal learning overlap significantly with phenomena observed in the present study.

Brody (2005) presents a “model of learning in nature” that originated in a study of visitors to Midway Geyser Basin in Yellowstone National Park (Brody et al. 2002). The study team concluded that “meaningful learning...takes place when learning is situated in real world events; it is a personal construction of knowledge through various cognitive processes *mediated by social interactions* [italics in original].” Setting the experience in a temporal context, Brody elaborates:

Initially our first experiences in nature and in specific settings are more experiential and personal, they may be more physical. Over time our first sensory impressions give way to perceived regularities and differences in the experience and our learning moves towards personal cognition and richer understanding. Along the way *our learning is mediated before, during and after the event by social interactions* [italics in original].

Research examining the informal learning that takes place in exhibit-based settings such as museums and aquaria provides another perspective on the phenomenon of social cognition. While these experiences do not necessarily involve a guide, and are therefore not fully comparable to guided nature excursions like organized walks or hikes, they are also venues for leisure activities and informal learning. Social factors have been identified as a key aspect of the museum experience. The Falk and Dierking “Interactive Experience” model (2011) represents the museum experience as a composite of three contextual elements: personal, physical, and social (similarly, the Brody model above defines the same three elements as dimensions, and adds a fourth, time). As Falk and Dierking acknowledge, the museum experience has most often been explored in the context of a family visit. Family members seek shared meaning in museum exhibits, and accomplish this by conversation, the provision of information, and comparison of past experience (Taylor et al. 1986, Hensel 1987, McManus 1988, Silverman 1990, Briseño-Garzón et al. 2007). In an essay on motivation and informal learning in the museum context, Paris (1997) asserts that the social, collaborative aspect of a museum experience is an important element of informal learning. Discussion and comments lead to surprises that “pique curiosity,” and the negotiation of ideas encourages visitors to explore different perspectives. Discussing the importance of social factors in a museum experience, McManus (1988) writes, “social group structure affects the strength with which people work to make meanings clear to each other.”

Brody’s model identifies three modes required for “meaningful learning” to occur: (1) acting (experience and sensing); (2) thinking; and (3) feeling. Each mode has four dimensions: physical (the setting of the experience), personal, social (shared) and time, and these each apply to the three modes. For meaningful learning to occur, each dimension must be experienced in

each mode – a total of 12 intersecting points. Applying the social dimension to the acting mode means that for learning to take place, the individual must react with other people with and within the physical setting, “doing things together so that we can learn from each other,” and sharing the physical experience. Applying the social dimension to the thinking mode means that the individual must be interacting cognitively with others, “sharing ideas and impressions, comparing and contrasting new concepts.” At the intersection of the social dimension with the feeling mode, the individual must be willing to share and accept the feelings, attitudes, values, and beliefs of others; this process helps create shared meaning, and shared beliefs about nature. With respect to the social dimension, Brody is in essence claiming that the sharing of experience – interacting physically, cognitively, and emotionally with other participants – is one requirement for meaningful learning. This concept overlaps with Laves’ model of situated cognition in its focus on negotiation among social participants, and the meanings that arise from such intersubjective collective activity.

“Negotiation” of ideas is a term much deployed in discussion of social cognition, and by the authors cited here. But how are ideas “negotiated” in informal settings, and how are perspectives shared? What specific behaviors comprise negotiation and intersubjectivity, and how do they lead to common understanding? In the section that follows I review research that identifies and analyzes the specific activities and conversational elements that comprise social learning.

### *Meaning-Making Conversations*

“Collaborative learning,” “socially mediated learning,” and “shared cognition” are all terms that have been used to describe the ways in which individuals develop shared understanding and collaborative knowledge – meaning that is shared by the group. This process starts with individuals who may hold diverse and unique knowledge and perspectives, and when successful, results in a negotiated outcome that represents a new construction. Researchers with diverse areas of educational interest generally agree on the process that enables groups to achieve this goal. In a discussion of research involving a web-based course requiring on-line student collaboration, Puntambekar (2006) defines collaborative learning as a process that (1) begins with divergent perspectives; (2) creates (“constructs”) shared understanding through dialogue and negotiation; (3) leads to internalization of learning by individuals; and (4) results in application by individuals of the newly-constructed knowledge. In an analysis of knowledge co-construction in an informal learning setting, Ash (2003) analyzes conversations that take place in family groups visiting a museum. She finds interweaving thematic areas, with different family members presenting different themes, and around these themes observes the inquiry skills of observing, questioning, interpreting, comparing, and contrasting. Difference in understanding and opinion “demands talk, explanation, questions and negotiation.” Individuals “hold information, revisit it, challenge it, and offer it at opportunistic moments.” In the study’s museum context, understanding did not arise from a single exhibit, but from collecting information across exhibits. A study of family interactions at a nature center raptor exhibit (Zimmerman and McLain 2014) highlighted the importance of narrative and prior experience in constructing common understanding. Prior shared experience represented a productive common ground for discussion, as family members compared past experience to present events, and used

past experience as a tool to explain present observed phenomena and explore different hypotheses about what they were seeing. Families also participated in “collaborative idea formation,” in which multiple persons contributed to an idea that was constructed as a group effort (as opposed to being proposed by one group member and accepted by the rest). At an interactive aquarium touch-tank, Kisiel et al. (2012) observed visitor families engaged in specific activities such as touching, encouraging touching, naming, scanning (looking around the exhibit as a whole), making claims, challenging claims, seeking information (by looking for a label or staff member), seeking evidence (trying to link evidence to a claim), and testing claims. The authors point out that “making claims, challenging claims, confirming claims...applying prior knowledge, making and testing predictions and hypotheses, and constructing arguments” are essentially scientific inquiry skills, adding Kuhn’s observation (1993) that they can also be seen in everyday life. These skills have also been noted during informal learning settings such as those examined by Kisiel, as well as by Zimmerman and McLain (2014) and Ash (2003), described above. Kisiel et al. propose the following elements of scientific reasoning as common to informal learning settings: (1) seeking or developing evidence (discussion related to identification and naming, manipulating an exhibit, discussing procedure, or simply observing); and (2) interpretation of evidence (making inferences and predictions, discussions of relationships). Explicit reference to prior experience and knowledge was also a characteristic of the touch-tank experience, where visitors recounted related experiences such as snorkeling or tidepooling. Furthermore, Kisiel points out, in informal learning contexts meaning-making is not restricted to discussion alone. “Co-construction of talk and activities is an important aspect of meaning-making” claims Kisiel, using supporting examples (Ash 2004, Rowe 2011). These authors all argue for the importance of activity, as well as talk, in the process of discourse.

In sum, the following behaviors, described in the studies above, represent key elements of informal, social learning:

- Observation – people see, touch, smell, and listen, and share this information with others;
- Questioning – observation generates questions, which are shared with others;
- Interpretation and theorizing – people seek explanations for their observations and answers to questions; they make claims and verbalize explanations and theories;
- Challenging – people question and challenge the explanations of others;
- Negotiation – the sharing and challenging of explanations generates discussion and negotiation around differing theories; and
- Sharing of past experience – throughout this process, people use past experience and narrative to help explain what is observed, and as tools in negotiating meaning.

In his model of learning in nature, Brody (2002) writes of meaningful learning as “personal construction of knowledge...mediated by social interaction.” The list of behaviors above describes specific social interactions that contribute to learning. As discussed in the Findings chapter, these interactions were also observed among visitors in the current study. As Kisiel et al. (2012) point out, these are also scientific inquiry skills. It might appear surprising to find behaviors associated with the complex work of scientific research in informal groups engaged in leisure activity. But this kind of collective conceptual inquiry has been noted in informal settings by others. Allen (2002) identifies “conceptual talk” as an “unexpected finding”

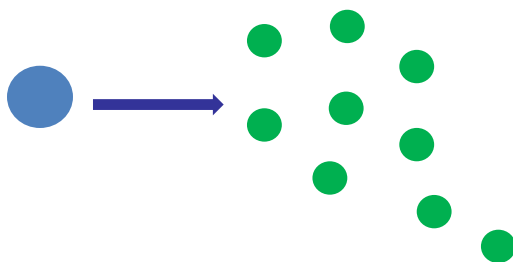
in her examination of museum visitor conversations. Further, the most common subcategory identified was “complex inferencing” involving “hypotheses, generalizations, or relational thinking.” She concludes, “inferential reasoning, though often brief and informal, is not uncommon in visitors’ conversations.”

In the section that follows I address the interactions observed in this study in the context of the learning behaviors and meaning-making behaviors discussed above.

### **Social Interactions in a Guided Nature Experience**

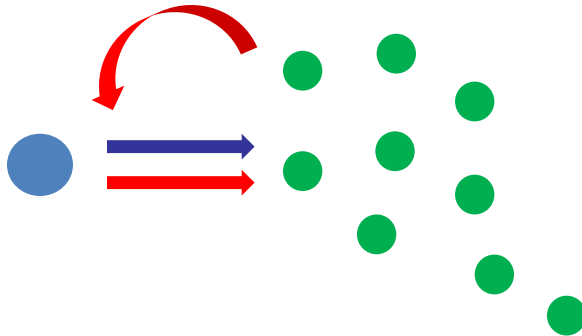
The previous section addressed the specific kinds of interactions that visitors can deploy to make meaning during an informal learning experience. This study demonstrated that these behaviors, comprising the phenomenon known as social cognition, are also observed during guided nature experiences.

As described earlier, the traditional, content-focused interpretive program or excursion is frequently perceived and programmed as primarily a one-way information transfer. A naturalist/guide in the role of expert and educator directs information to a group of visitors (Figure 5-2).



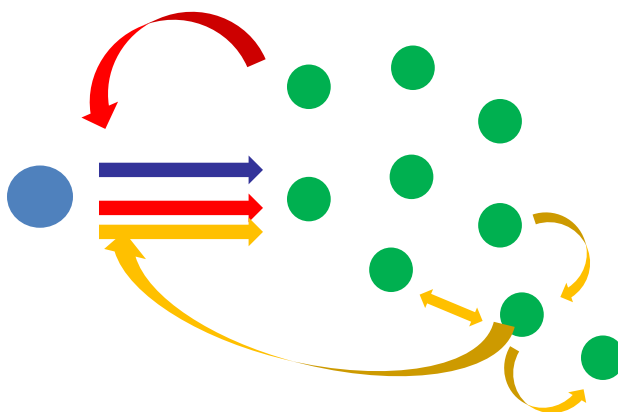
*Figure 5-2 Social Interactions in a Guided Nature Experience (1)*

The results of the current study show, however, that this represents only the beginning of a potential interaction process. As observed during the study excursions, the initial information presented by the guide (Figure 5-3; blue arrow) may generate a question from the group (red curved arrow), which generates a subsequent answer from the guide (red arrow).



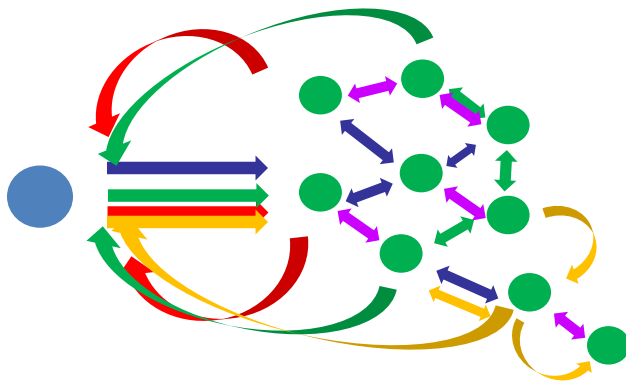
*Figure 5-3 Social Interactions in a Guided Nature Experience (2)*

At the same time, a subgroup of visitors (Figure 5-4, lower right) is having its own exchange (yellow arrows), generating a question to the guide (yellow curved arrow). When the guide responds to this question (yellow arrow) this information is then transmitted to the entire group, which would not have received the information if not for the subgroup exchange.



*Figure 5-4 Social Interactions in a Guided Nature Experience (3)*

Additional discussions among group members generate additional questions; other conversations begin that may or may not be related to the initial topic. The final map of a discourse exchange begins to look, not like the one-way lecture pictured initially, but more like a web of interlocking exchanges and conversations, some of which refer back to the guide for information and/or opinion (Figure 5-5).



*Figure 5-5 Social Interactions in a Guided Nature Experience (4)*

The resulting pattern does not indicate a one-way information transfer, but rather a network of interactions characterized by the activities listed above: knowledge exchange; shared exploration, theorizing and questioning; the development and challenging of theory; and the sharing of experience – all of which may also be shared with and/or referred to the guide. Beyond the purely cognitive context of learning, visitors are socializing, sharing and comparing experiences, finding common ground, identifying differences, noting observance (or ignorance) of social norms, and positioning themselves relative to the group as a whole.

As indicated in Chapter 4 (Findings), all of these behaviors were noted during the excursions described in this study. However, they have not been extensively addressed in the context of field nature interpretation.

### **Social Factors and Interpretation Theory: Dominance of a cognitive model**

If social interaction is an important element in experience and informal learning, as research suggests, why has it not been much addressed in the field of interpretation?

Historically, the formal role of interpreter was most frequently assumed by rangers and nature guides within the national park system. “Although the National Park Service did not invent interpretation, that organization was largely responsible for the broad public recognition of its values in developing understanding and appreciation of nature and history” (Brockman 1978). The focus was on information and education “to interpret the natural sciences which are illustrated in the scenic features, flora and fauna of the national parks and monuments” (Mackintosh 1986). Tilden (1977) outlined a “philosophy of interpretation” and offered a formal definition of interpretation:

An educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information.

To support his philosophy, Tilden developed a theory of interpretation founded on six underlying principles: (1) interpretation must relate to the visitor’s interests and/or personality; (2) interpretation is “revelation based upon information” (as opposed to pure information); (3) interpretation is teachable; (4) the goal of interpretation is “not instruction, but provocation;” (5) interpretation must address a whole concept (as opposed to isolated ideas); and (6) interpretation

addressed to children requires different methods and approaches. In this characterization, Tilden expands the early concept of interpretation from a mere communication of fact, to a process that reveals meanings and relationships, and provokes interest. The responsibility for accomplishing this is traditionally assigned to the interpreter, who has the responsibility of revealing meaning and relationships, and provoking interest and engagement in an audience. In order to create a “relatable” program, the interpreter needs to understand the audience and its interests. This model, however, relegates the visitor audience to the role of a passive entity to which the interpretive program must relate, a recipient of information and attention. The model is cognitive in a traditional sense, largely dependent upon an individual interpreter conveying information, and ideally inspiring revelation and provocation for an audience composed of individual minds. For half a century these tenets served as the foundation for interpretive programming. Subsequent models, such as Ham’s (1992), reinforced Tilden’s tenets and focused on the organization and delivery of informational programs (they should be enjoyable, relevant, organized, and represent a unifying theme). Beck and Cable (2002) incorporate many of the same concepts as Tilden and Ham, adding the aspects of Csikszentmihalyi’s “optimal experience,” and explicitly referencing passion as a necessary element for the program and the interpreter. But despite these modifications, the practical implementation of interpretation has largely remained the same: an interpreter delivering a prepared program to a passive audience of individuals, much as a film is presented in a movie theatre.

While interpretive theory has increasingly acknowledged the constructivist perspective of understanding and meaning-making, that realization has been slow to be adopted in actual practice. Knapp and Benton (2004) note that, while NPS training guidelines emphasize the

importance of active, constructivist, audience-engaging programs, guides in five national parks delivered largely one-way, lecture-type programs, despite the interpreters' own understanding of what was required for successful programs. Knapp identifies key elements of successful interpretation as defined by interpreters: these include connection to the visitor, understanding of the audience, avoidance of a didactic or lecture format, the promotion of critical thinking, and interactive approaches. However, in all cases, the programs actually delivered by these interpreters were uniformly one-way, lecture formats. Further, the "interactive" programming recommended refers to the visitor interacting with the "resource" or with the guide; it does not identify other visitors as an additional source of interaction or information.

In an examination of how NPS interpreters facilitate connection opportunities, Chen (2001) explores how visitors can best be connected to resource meanings. In a discussion of the relationships between interpretation, meaning-making, and understanding, she raises the issues of themes, underlying meanings, universal concepts, and emotional and intellectual connections, which together create "authentic understanding." She suggests that "through the processes of ascribing, constructing, making, realizing or stimulating meanings, individuals form more personalized and/or more shared understanding of resource meaning." (In this context, "shared understanding" refers to cultural referents). She also states "The meaning-revealing process of interpretation provides opportunities for the mutual transaction of meanings *between* interpreters and visitors." [italics in original]. These discussions and findings are illuminating in their insights on how interpretation affects individuals, and the relationship between interpreters and visitors. But they do not address how, in an interpretive context, visitors are capable of creating meaning amongst themselves. In addition, Chen's study, for all its insights into how visitors

connect to meanings, is based on examination of prepared interpretive programs; it is an analysis of what *interpreters* believe create connections; it does not include any visitor or audience input.

Barrie (2003) conducted a series of semi-structured interviews with NPS visitors to discover what constitutes “meaningful interpretation.” She categorized her findings into personal elements, site elements, and outcome. The personal elements were represented by personal interest and previous experience (with the topic or site). Site elements were authenticity, topic, perception of the interpreter’s knowledge, exhibit design, and the engagement of multiple senses. Outcome elements included remembrance, fact acquisition, understanding, awe, and “past brought to life.” There is no mention of social or interactive elements that involve fellow visitors. In a discussion of a meaning-making paradigm she writes of “the idea that visitors take the meanings being provided to them, process them and apply them to their own situations.” She further comments that meaning-making “involves an interaction between the visitors’ perceptions and the interpretation provided by site personnel.” The focus is on interaction, but between the interpreter and the visitor; visitor-to-visitor interactions are not part of this model.

The picture that emerges from the literature is one of interpretation as top-down: organizationally-steered, mission-directed, and focused on the presentation of information and themes developed by the sponsoring organization. From an organizational perspective, this is not surprising or even undesirable; organizations have missions and seek to fulfill them. For conservation-focused organizations, personal interpretation is a valuable tool to help meet their goals, and they seek to control their message and thus ideally ensure interpretive outcomes. But in interpretation as it is largely practiced, this approach places the visitor, as the recipient of the message, in the role of passive consumer, rendering moot the principles of active engagement

and constructive meaning-making that interpretive theory and interpretation management presumably espouse. Studies and literature show visitors to be socially engaged, interactive, intersubjective meaning-makers – but until recently interpretive practice has not fully acknowledged this. What does this mean for organizations that use interpretation to support their mission? As discussed in this section, theorists such as Wenger and Lave suggest that engaged learners both generate and support community. The importance of constructive interpretive methods in the development and support of stewardship communities will be discussed in the next chapter. I will also address the emergence of new, visitor centered models of interpretation, and their implications for the future of this discipline.

## Chapter 6: Discussion

The purpose of this study was to explore the role of interpretation in a nature experience by examining the role and methods of nature guides through the lens of both visitor and guide. The results reveal that social factors play a major part in the experience, especially in facilitating the constructive learning that takes place over the course of an excursion. As the previous chapter has shown, meaning-making is a social activity. The socialization that takes place during an excursion provides both a forum and a framework for learning.

The goals of visitors and guides on the observed trips, while interrelated, were not always aligned. Visitors in the current study want to learn, and more specifically, to understand: relationships, ecosystems, ecohistory, and the characteristics of plants and animals that enable them to survive in a particular habitat. They want guides who are passionate about their subject and work, and who are willing to share not just their knowledge, but personal information, especially relating to their naturalist vocations. Visitors value highly, and respond enthusiastically, to personal attention to their individual interests and trip goals. While guides in this study are aware of their own areas of expertise, and acutely sensitive to the knowledge and skills that they lack, they are not expressly focused on visitor learning. Rather, their outcome goals are higher level: to create environmental awareness, generate repeat visits and increased activity in nature, motivate environmental stewardship, and encourage visitors to become part of a conservation community.

Visitors and guides both discuss the social and group dynamic aspects of their excursion. However, in this study visitors demonstrated greater awareness of social interactions and the opportunities that they provide for visitors to learn from and with each other. This is not surprising: guides heading down a trail in front of a line of visitors, while simultaneously juggling multiple logistical, learning, and group dynamic issues, are unlikely to spot interactions occurring in the string of visitors behind them.

In this chapter I first address the role of the interpretive or nature guide as revealed in the literature, and by the study research. I then examine the role of interpretation itself in the nature experience. Finally, I address the implications of the study results: what these findings mean for the role of the guide, the organizations that deploy them, and the future of interpretation itself.

### **Role of the Guide**

The understanding that visitors are social learners who actively and continuously shape their own nature experience suggests a new and different role for both the nature guide, and for the organizational framework (training, program development, reporting structure) supporting her. Traditionally the role of the guide has varied, depending upon the context and framework of the tour and visitor experience. The touristic viewpoint sees the guide in a historic and even spiritual context. The rise of group tours and experiences has highlighted the role of guide as social mediator and the person responsible for group dynamics, while interpretive literature and theory tends to view the guide in a primarily educational role.

### *Touristic and Interpretive Literature*

The tourism/leisure and interpretive disciplines use different terminologies to describe the role of the guide, while arriving at similar conclusions with regard to specific duties and responsibilities. The tourism literature, however, frames the role of guide against a larger spiritual and historic landscape, while the interpretive field focuses on communication and educational aspects of the role. This section discusses the role of the guide as seen from both the tourism/leisure and interpretive perspectives.

Cohen (1985) locates the historical origins of the tourist guide in the roles of both geographical guide (pathfinder) and mentor (spiritual guide). Over time, he avers, these have evolved and expanded into the contemporary roles of (1) tour leader, responsible for providing such items as physical direction, access to sites, and safety; (2) communicator (the traditional interpretive element); and (3) social “animator,” an assignment familiar to many tour guides and outdoor leaders on extended wilderness trips, but perhaps less so for nature guides and interpreters on shorter excursions. Like Cohen, Ooi (2005) also identifies the role of guide with that of ritual mediator. He likens mediators to priests, in the sense that they create a unified “congregation” which is taught reverence and respect for a set of sites, sights, and “relics” (gifts and souvenirs), guiding visitors through what Ooi calls the “experiencescape.” The Ooi guide directs the visitor through a setting with many competing elements, defining a focus of attention and thus shaping the experience based on a set of commercial or organizational mission goals. Belk (1997) refers to the guide as mediator and “priest”: someone who aids in the rituals of travel that include boundary crossings, welcoming rituals and celebrations of *communitas*, and provides cues to appropriate behavior. While it might seem unlikely to attribute such a lofty role

to individuals leading short nature excursions, in his discussion of nature-tourist encounters Markwell (2001) defines all such encounters as mediated, and identifies nature guides as facilitators of experience as ritual. In a discussion of tourist experience as ritual, Arnould and Price (1993) refer to the role of the outdoor guide in a pilgrimage process, and describe river guides as providing cues to “facilitate consumers’ communion with nature.” Vespestad and Lindberg (2010) identify one role of the nature guide as assisting visitors to experience the “rewards of being in nature.” The authors also address the role that guides play in helping nature tourists in the search for authenticity. With a bow to MacCannell (1999), they point out that tourists seek authenticity in nature experiences, and guides help them to achieve that. Guide as emotional facilitator is a role identified by Davidson and Black (2007). Cave guides in this study cite emotional experience as one of their program goals, creating a sense of “adventure and mystery” through the use of aesthetics and multi-sensory stimulation (sight, sound, smell, taste, and touch). The guides in the current study rarely spoke in emotional terms, discussing their field experiences in pragmatic language that reflected the immediate concerns of managing a diverse group of visitors. However, one guide who led an excursion described as a “Sunset Walk” commented, “the idea is that the hike is to just enjoy evenings on Cape Cod and at the same time realize, or share, that the sanctuary...captures the beauty of an evening walk through conservation lands, this beautiful barrier beach... I’m here to facilitate [visitors].” In this case, the guide perceived himself as facilitator of a restorative experience. One reason that interpretive theory tends to put less emphasis on the emotional, social, and spiritual aspects of the guide role may be the short term nature of interpretive programs. For most visitors, an interpretive program lasts no more than an hour or two. This provides relatively little time for a guide to generate the kind of rapport and trust that can be developed over extended periods by guides accompanying a

multi-day tour or wilderness outing. Nevertheless, the role of nature guide as social and emotional facilitator is clear from the current study. Visitors can, over a relatively short period, develop sufficient social rapport to engage in sophisticated social learning behaviors. This suggests that it is not unreasonable for a guide to undertake social facilitation for the same activities.

The role of guide as communicator or educator is one that has traditionally been assigned to interpretation and interpreters, who serve as designated educators for an organization. As previously discussed, interpretation is defined as a “communication process” designed to forge emotional and intellectual connections, although functional emphasis has remained on the cognitive elements of interpretive programs. Following in Tilden’s steps, Chen (2003) and Barrie (2001) focus on interpretation and the role of interpreter as a way to reveal meaning and relationships – cognitive activities dependent upon communication and interpretive technique. Both visitors and guides in the current study would probably recognize the role of guide as “communicator,” although neither visitors nor guides chose that term. Visitors spoke of “learning” and “understanding”; guides talked in terms of sharing knowledge and motivating visitor behaviors. While the NAI defines interpretation as a “communication process,” Tilden, Chen and Barrie focus on relationships and the revelation of meanings – terms that more closely reflect the language used by both visitors and guides in the current study.

The role of nature guide as social facilitator is well-recognized in the tourist literature, although little mentioned in interpretation theory. Cohen (1985) speaks of guide as “social animator.” Arnould and Price (1993) discuss the facilitation of *communitas*, group bonding, and the creation and support of group norms. Vespestad and Lindberg (2010) address the role of

nature guides in reinforcing socio-cultural identity and “tribe” membership. Both Ooi (2005) and Rogoff (1998) examine the importance of attention focus in creating a common viewpoint. Rogoff comments on its importance in the emergence of intersubjectivity, and Ooi notes that selecting a focus of group attention is one key responsibility of the tour guide, as it fosters “convergency of experience” within a group. Randall and Rollins (2009) identify “social leadership” as a key guide role in wilderness excursions. Guides in the current study were well aware of their responsibilities in managing group dynamics, and in meeting the needs of audiences who vary widely in age, interest, physical capacity and nature experience. Visitors valued guides that they perceived as socially adept, displaying charm and enthusiasm. One visitor noted the importance of a guide who understands and can manage an audience, and maintain control without being dictatorial. Such a guide needs to “do his own set of people-watching, and to move the group along and keep them together, and be pleasant” without appearing overly strict by saying things such as “ ‘Don’t do this, don’t do that, we’re afraid of scaring off this creature.’ ” In this respect, the guide’s role is also very much a balancing act: to convey information and keep visitors safe without displaying arrogance (“pontificating,” as one respondent put it) or appearing overly controlling of visitor behavior.

The importance of narrative and the facilitation of narrative creation was discussed earlier in the context of informal learning in places such as zoos and museums. Both shared experience, and the process of sharing experience, are tools that do not just aid understanding, but assist in the creation of ongoing personal narratives. Arnould and Price assert that one role of the guide is to help participants create a personal narrative, while also being part of a emergent group

narrative. In this way, guides help to orchestrate a “rediscovered sense of self,” identified by the researchers as one outcome of a nature experience.

The logistical aspect of guiding is well-acknowledged in the touristic literature: guides are responsible for site access, safety, and interaction with touristic mediators (Holloway 1981, Cohen 1985, Weiler and Davis 1993, Markwell 2001, Ooi 2005, Davidson and Black 2007). This evidence was supported by the activities observed in this study, where interpretive nature guides were responsible for responding to factors such as weather, group size, the capacity of target destinations for crowding, the timing of natural phenomena such as tides and daylight, the likelihood of locating wildlife at a particular place or time, accessibility, and the physical condition of group members – all elements which may change over the excursion period and must be continuously assessed. At the same time, nature and outdoor guides may also be held responsible by their sponsoring organizations and land conservation agencies for minimizing the environmental impact of visitor activity (Arnould and Price 1993, Weiler and Davis 1993, Parker and Avant 2000, Davidson and Black 2007, Randall and Rollins 2009).

The next section will address a guide role expectation common to many organizations: that of connecting visitors to nature, and to an organization’s own particular natural sites.

### *Connecting Visitors to Nature*

Helping to foster a relationship with the natural world or a specific site is one key aspect of the nature guide role. The importance placed on the human-nature relationship is demonstrated by the number of studies and tools developed to operationalize that relationship (often referred to as “connectedness to nature” or CTN). In a review of the connectedness

concept in psychological literature, Townsend and McWhirter (2005) define connectedness as “relatedness, which is a key feature in identity development and a factor in mental health and well-being.” Discussing connectedness with specific respect to nature, Schultz et al.(2004) write, “Researchers and scholars writing about this topic use terms like ‘ecological identity,’ ‘relationship,’ ‘identification,’ or ‘oneness’ to refer to this core belief.” Mayer and Frantz (2004) describe their connectedness to nature scale as “a measure of individuals’ feeling in community with nature,” and a measure of “individuals’ trait levels of feeling emotionally connected to the natural world.”

Numerous studies link a relationship with or connection to nature with stewardship behavior (Geller 1995, Kals et al. 1999, Bogeholz 2006, Dutcher et al. 2007, Stern et al. 2008, Zeppel and Muloin 2008, Davis et al. 2009). Not surprisingly, organizations see guides and interpreters as key instruments in this relationship-building process. A former Yellowstone National Park Chief of Interpretation argues that one of the key missions of interpreters is to ensure that coming generations have “a strong personal connection with the parks so that they can pass on a sense of ownership and caring to the next generation” (Chalfant 2004). The NAI defines interpretation as a process that “forges emotional and intellectual connections.” The guide, then, is someone who facilitates a connection or relationship between visitors and nature, or a specific natural place. Brooks et al. (2006) suggest that such a connection to natural place is a true relationship-type partnership. Davis et al. (2009) argue that the human relationship with the environment, in the context of environmentally protective behavior, does in fact constitute that of nature as relationship partner: “the natural environment may be viewed as a relationship partner with whom individuals experience greater or lesser commitment.” When we ask

naturalist/guides to forge a connection with nature, whether cognitive or affective, we are in effect asking them to foster a relationship. In the current study one guide explicitly discussed connecting visitors with nature, the visitor relationship with nature, and its importance in the creation of stewardship: “The reason I do this work is because I hope to foster a connection [with nature] ...to give people this connection...I feel strongly that there’s a benefit in us developing this connection with people, the animals, the wildlife, the natural history...it’s my role in conservation.”

### *Mediating an Emergent Experience*

The nature experience has been described as emergent, interactive, and interconnected with landscape by authors including Hull et al. (1992), McIntyre and Roggenbuck (1998), Beyer (1999), Borrie and Roggenbuck (2001), and Wearing and Wearing (2001). Borrie and Roggenbuck propose three distinct phases of wilderness experience: entry, immersion, and exit. The short-term experiences that are the focus of this study differ from immersive wilderness trips in ways that include duration, physical arduousness, logistical complexity, demographics, and the previous outdoor experience of the participants. Nevertheless, these shorter term excursions have also been demonstrated to have a phasic and changing quality, varying with landscape and over time (Hull et al. 1992, McIntyre and Roggenbuck 1998). In this context, the guide is responsible for interacting with and mediating a group whose moods and responses are continually changing over the course of the trip: in reaction to scenery, events such as animal sightings, external physical conditions, and the individual physical conditions of group members. And as discussed earlier, a guide also must be continually adjusting to logistical opportunities

and constraints, even on a short excursion. So in addition to managing constantly changing logistical issues, the guide is managing a varied group of individuals through a phasic process.

### *Facilitating Experience: Experience as value*

The concept of “experience economy” originated by Pine and Gilmore (1998) and discussed in Chapter 2 has generated lively discourse in the tourism and leisure literature. The Pine and Gilmore model advocates for the selling of “experience” vs. “service.” Viewed in this context, an organization such as NPS or a conservation trust is an entity that stages experiences in the attempt to provide a “personal, memorable” event. Ek et al. (2008) argue for expanding the concept of “staging” to include the tourist as participants, as opposed to merely a passive audience – active performers in a dynamic setting who also “co-produce, co-design and co-exhibit.” As discussed earlier, however, in contemporary practice, interpreters and nature guides are often operating in a cognitive mode, providing information as opposed to experience. Identifying the guide as a facilitator of experience (as opposed to educator) substantially broadens the focus of the role, adding social components that focus on identifying and meeting “consumer” needs, and acknowledging visitors as active co-creators of experience.

### *Empowering Visitors*

One aspect of the guide role manifested in the current study was that of visitor empowerment, an outcome not discussed in either the touristic or interpretive literature. By transferring knowledge, interpreters and guides help to create an informed public that can pass on information acquired during an excursion to family members, friends, and fellow participants in subsequent nature experiences. In addition, guides provide specific observation and

identification skills that make it possible for visitors to observe and identify more keenly, and to pass on their observations and sightings to others (e.g., the ability to sight and identify a bird, and then describe its location in such a way that another visitor can successfully make the sighting). These skills are particularly notable in excursions such as whale watching, where individuals are taught to how to describe the location of an animal using a clock analogy (“blow at 3 o-clock”). The capability to act as guide and spotter empowers visitors as citizen guides, and interpreters in their own right.

### *Summary*

Facilitator of narrative and self-discovery, spiritual mentor and authenticity guide, emotional facilitator, logistical manager, environmental protector, place and nature relationship-builder, process mediator, visitor empowerment and not least, social facilitator – these roles are not generally recognized in traditional interpretive theory, which focuses heavily on the cognitive/learning function of interpreter as communicator/educator. Writing about river guides, Arnould and Price reflect on the demanding and multifaceted nature of this role:

The guide is an impresario who facilitates the enactment of vaguely familiar cultural scripts, helping participants to transform experiences into treasured, culturally construed memories of personal growth, challenges overcome, teamwork, and perseverance.

While nature guides leading short-term excursions are not in control of the long-term wilderness immersion experiences managed by river guides, much of their role is, in fact similar, even if elements of the trip are in different proportion. While aspects such as personal growth, teamwork, and perseverance may be less important in short excursions, nature guides have the prime responsibility of education; they are expected to be content experts, and to “forge

connections” in an extremely limited timeframe – a challenge as daunting in its own way as orchestrating a wilderness immersion experience. And as we have seen, to fully utilize the learning potential in a group, they require more than context knowledge: they need strong social skills, as well as pedagogical techniques designed to facilitate inquiry and interaction.

### **Role of Interpretation**

If the traditional model of nature interpretation has commonly been referred to and perceived as an “outdoor classroom,” the picture revealed by this study is as much social gathering as classroom. From an organizational viewpoint, the purpose of an interpretive nature excursion is generally educational. From the visitor viewpoint, it has a strong learning focus. But as visitors have articulated, and these observations reveal, social interaction as well as social learning constitute important elements of the group nature experience. Traditional interpretive theory, focused on cognitive goals, does not fully acknowledge this, nor do many sponsoring organizations, which often separate “social” events (fundraising dinners, parties) from learning activities (guided excursions, lectures).

In a larger sense, how does this redefine the role of interpretation as it constitutes part of a short-term nature experience? First, a guide-led interpretive nature walk offers more than just education; it provides a forum that brings together visitors with a common interest. Within this forum, connections form: among visitors, between visitors and guide, and between visitors and place. Some of these connections are spontaneous, arising from the social setting provided by the group. Others may be mediated or encouraged by the guide. Second, the interpretive forum provides a setting for the sharing and creation of narrative experience. For visitors, discovery of similar past narratives reinforces a common identity, signifying that they are part of the “tribe” or

community of nature-lovers. Third, the forum provided by a nature excursion provides a venue for social learning. The interactions among visitors and guide – observing, questioning, theorizing, challenging, and exchanging ideas – comprise social cognition, the social and highly constructive mutual creation of meaning. Learning within a group context, as Wenger points out, is one aspect of communities of practice, elevating learning from an individual activity to a community experience, and providing a common identity for learners.

For organizations that sponsor nature excursions, then, a guided nature walk is more than an educational exercise. It represents an opportunity to build and strengthen a community of engaged conservation stewards, by leveraging social interactions and common experience.

### **Implications for Practice**

The interpretive literature focuses on personal interpretation as an activity with the intent of forging connections, intellectual or emotional, to a place (or “resource”). However, the method generally deployed to achieve this is cognitive: an interpreter tells people things, in the hope that this information will in some way foster or lead to a connection, and that this connection will ultimately lead to stewardship. Although interpretive theory encourages and refers to the building of connections, in practice, responsibility for visitor learning has been placed on the interpreter as a source of knowledge – a very cognitive role. This study has shown that social interaction plays an important part in the nature program experience, particularly in learning. It follows, therefore, that social factors are an important element in the role of the guide, and the role of interpretation as well. Further, investigations into social learning (Wenger 2009, Lave 2009) demonstrate that collective learning in communities of shared interest is a powerful factor in the creation of community and collective identity. This suggests that social

aspects of the interpretive experience can and should be deployed for the development and strengthening of conservation and stewardship communities.

The ways in which this model impacts the role of the guide, as well as the role of interpretation, are discussed in the sections below.

#### *Nature Guide Role: Fostering community*

Redefining the interpretive nature excursion as a social experience requires perceiving the guide's role in a new way. The guide is no longer just a source of expertise, but a social facilitator: host and representative of a stewardship community.

What characteristics define an effective host and envoy of a welcoming organization?

- Creating a friendly, welcoming atmosphere – This means engaging visitors socially in ways that help them feel comfortable and accepted, experienced hikers as well as first-time visitors or those new to natural environments.
- Creating an environment that encourages socializing as a norm – An effective social facilitator identifies visitors with common interests and makes it possible for them to interact. In large interpretive groups this may not be possible. However, it is possible to formulate a sense of group membership in a collective way, by asking questions such as “Where are you folks from?” “Who has traveled the farthest to get here?” A guide can also ask questions such as, “Who here is new to the desert/the seashore/the barrier beach?” “Who here is familiar with this environment?” These kinds of questions not only help visitors to learn about each other and identify common ground, but they help the guide learn about the audience, its

background and interests. In addition, guides should be willing to share personal information and anecdotes, and to listen to visitors' anecdotes during the course of the excursion (time and conditions permitting). This can be readily accomplished during times when people are walking from one site to another, or waiting for the group to cluster at a site. It has also been noted in this research, as well as in the literature, that the end phase of an excursion tends to be more social. As gracious hosts, guides should be prepared to take advantage of this by using the opportunity to interact individually with trip members.

- Identifying and reaching out to neophytes – If recruiting engaged nature stewards is a mission for conservation organizations, then effectively reaching out to new or inexperienced visitors should be a key role for nature guides. Neophytes can feel uncomfortable or intimidated in new, unfamiliar situations, and may be physically less prepared than experienced walkers. An effective host reaches out to the less-experienced – potential new “tribe” members – welcomes them, and helps motivate them to want to join the community.
- Maintaining awareness of varying social identities – As the guides in this study note, audiences on these excursions are varied, and may consist of visitors comfortable with a guided nature experience, as well as individuals new to the activity. Experienced visitors are sensitive to group norm violations and perceived solecisms that inexperienced visitors may not be aware of making. As Levine et al. write, “socially categorizing another person as an ingroup versus an outgroup member can substantially affect how this person is perceived and treated.”

### *Nature Guide Role: Facilitating meaning-making*

As a learning facilitator, a guide has been demonstrated to be more than a mere “communicator,” although expertise and understanding are important to the role. The responsibilities of a guide that relate to learning include:

- Providing a knowledge baseline or background for a social learning forum;
- Providing a focus of attention that alerts visitors to the presence of flora and fauna, events, phenomena, and related environmental or natural issues; and
- Encouraging group interaction – Fostering social learning and the exchange and generation of ideas by:
  - Encouraging questions;
  - Being attentive to side discussions and responding as conditions allow;
  - Integrating relevant themes and questions from side discussions to the general group;
  - Positively reinforcing conjecture, and acknowledging visitor ideas and theories with grace and attention (even if these prove erroneous or incorrect); and
  - Engaging multiple senses – encouraging visitors to listen, touch, smell and/or feel as conditions allow, and to share their observations.

### *Altering Group Conformation and Dynamics*

It has been noted earlier in this document that the practice of interpretation may sometimes be at odds with recommended practices and standards. For example, NPS interpreters, while acknowledging the importance of constructivist programming, tend to deliver lecture-type programs with minimal interactivity (Knapp and Benton 2004). The results of the study

presented here suggest that the issue may stem as much from the static quality of the fixed-lecture format, as from the techniques of individual practitioners. The physical characteristics and demands of a nature walk mandate changing audience conformation: two people standing next to each other at one site may not be adjacent at the next, and social clusters may change as the trip progresses. The physical conformation of the group and its conversational clusters can easily alter over time, and this in itself may encourage a variety of ever-changing social interactions. By contrast, members of a seated audience are physically committed to and constrained by the individuals surrounding them on either side, which may inhibit casual interaction; it certainly inhibits the formation of casual interest groups and clusters. Further, in “interactive” audience presentations, interpreters pass exhibit items to and through the audience. This linear presentation (the item passes from one person to another) does not encourage group conjecture or observation. An artifact that draws the attention and physical centering of a subgroup during a trail walk cannot easily create the same circle of interest in a seated audience. In other words, the very format of the seated-audience presentation precludes many of the activities and explorations characteristic of socially shared cognition, and makes others awkward to implement. This leads to the conclusion that one of the best ways to implement constructive learning and foster socially shared cognition is to get an audience off of fixed chairs and log benches and onto the trail wherever possible. At the very least, simply moving a group from one place to another creates opportunities for social interaction and enhances the possibilities for shared learning. A museum-based study by McManus (1988) reinforces these observations. The researcher found that groups that communicate well with each other also attend well to exhibit messages. She recommends that planners design exhibits so that “the focusing of a group on the

exhibit reinforces social intimacy...Perhaps arranging exhibits in groups which encourage people to form clusters where they can maintain face-to-face contact.”

#### *Organizational Role: Fostering community*

The traditional goal of interpretation involves connecting individual visitors to a place or resource. When social learning and interaction are added to the mix, interpretation becomes a way to connect visitors not just to a place, but to each other, and by so doing, engage them and create the foundations of community. Conservation organizations recognize the importance of community by encouraging those who visit their sites to become members. The NPS is increasingly leveraging this potential by partnering with non-profit organizations which create and foster the infrastructure for community and membership: mailing lists, newsletters, volunteer activities and social events. These outreach activities may seem far from interpretive programming, but if such programming does, in fact, provide a forum for social phenomena by creating a de facto potential community, then engaging and supporting this community should be a major goal of auxiliary organizations. Conversely, if these organizations are the instruments of active stewardship, then one goal of interpretation should be to connect visitors to these stewardship communities.

#### *Organizational Role: Training and development*

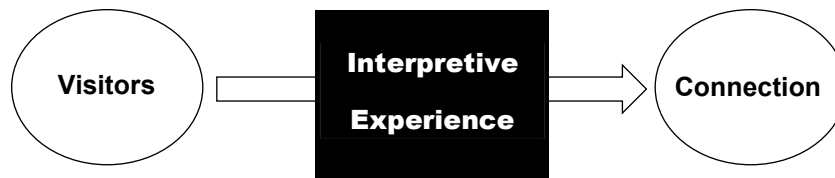
The field of interpretation is becoming increasingly professionalized, as theory and research generate ideas and findings that are making their way into field practice. Many larger organizations (such as the NPS) are in a position to review new standards and practices as they emerge, and ensure their adoption by interpreters. However, organizations with a strong

educational (i.e., K-12) or tourism and recreation focus, may not be connected to the professional interpretation community (represented by organizations such as NAI). For example, the nature guides who participated in this study self-identified as “naturalists.” They never used the terms “interpreter” or “interpretation,” and some had never heard these words. Further, many guides are seasonal employees or volunteers, and the amount and level of training they receive varies widely. This raises the question, to what extent do sponsoring organizations understand the role of the guide and its potential – beyond purely educational applications – to support organizational mission? With respect to this study, this could be considered a side issue. However, it brings up the very practical question of how guides can best support organizational mission, when organizations themselves may not fully understand the guide’s role and potential.

### **Future Investigations**

This study was designed to discover what happens inside the “black box” of an interpretive nature experience (Figure 6-1). Study results indicate that processes happening inside the box include:

- Social learning/mutual meaning-making
- Visitors connecting to each other, and to the guide
- Visitors connecting to place
- Creation and sharing of narrative
- Creation and sharing of community identity
- Visitor empowerment



*Figure 6-1* The Interpretive Experience Black Box

The model above, initially presented in Chapter 1, shows “Connection” as an outcome, based on the hopes and assumptions of conservation organizations. This study showed that connection to place, and to person, are potential outcomes of an interpretive nature walk. However, further research is required to explore more deeply the kind of connections (such as connection to nature) that result, and ways in which the experiential processes identified here link to such connections.

The current study was characterized by a narrow demographic; most respondents were middle-aged and college-educated. Further research needs to be conducted to determine if the findings revealed in this study are characteristic of other demographic groups. In addition, the respondents in this study were uniformly comfortable and experienced in the outdoors; their experiences may be quite different from those of nature novices. For this reason, future studies should include respondents less familiar with the outdoors and/or guided nature walks – especially since these individuals constitute potential new members of the environmentally-aware and nature stewardship community.

The phenomenon of socially shared cognition in nature excursions should be specifically targeted for study. Research in museums and aquaria has identified very specific social learning interactions and outcomes within family groups. While the presence of socially shared cognition

was a key finding of this study, a deeper examination of this phenomenon in nature outings, and its occurrence both within and across family/friend groupings to include strangers, will be needed to fully develop a new paradigm of interpretive nature programming and outreach.

Finally, the relationship between interpretation and behavior needs to be constantly challenged in order to examine the links between interpretation and stewardship. For example, do people join a stewardship organization (e.g., Mass Audubon) or a National Parks Partner affiliate (e.g., Grand Canyon Association, Eastern National) following a guided excursion? How many excursion participants are already members of such organizations? Are any interpretive activities or messages particularly effective in motivating stewardship? Further examination of the interpretive experience, as well as research into the relationship of that experience to stewardship, is essential if personal interpretation is to increase its relevance and impact.

### **The Future of Interpretation**

This paper has addressed the social elements of a guided, interpretive nature experience, and the key role that visitors play in actively constructing their own meanings and nature experience. Other authors and researchers are also attempting to redefine the concepts and assumptions behind interpretation, and in so doing, the role and responsibility of the interpreter. Practitioners in the field are also generating their own innovations. Interestingly, these redefinition attempts focus less on the role of the interpreter, and more on the role and importance of the visitor audience.

Forist and Knapp (2014) propose a methodology that they term “visitor-centered interpretation through dialogue.” In this model, which focuses on the visitor rather than the

interpretive program itself, the interpreter assumes the role of facilitator, as opposed to orator. Visitors “are no longer seen as vessels to be filled with information or individuals not yet connected to a resource.” The prevailing interpretive model of pointing an interpreter at an audience for the delivery of information defies the precepts of constructivism and visitor engagement, they argue. “Disdainful and dismissive views of visitors (reflected in Muir’s and Tilden’s comments) have resulted in instructive rather than engaging interpretation.” Whisnant et al. (2011) note that NPS approaches to interpretation “predispose NPS to underestimate visitors and view them as people to be instructed rather than listened to and engaged.” While the NPS maybe the single largest employer of field interpretive staff, many other conservation organizations (including the one that sponsored this study) also follow a “lead-and-lecture” format for short-term interpretive excursions. Meanwhile, individual interpreters have begun to experiment with audience-centered programs. Swaim (2013) describes a birding walk in which the interpreter acted purely as facilitator, as opposed to expert. “The youngsters did their own interpretation. They helped each other find the birds through their binoculars, pointed out birds, and helped each other identify them, with or without the field guides.” This practitioner describes an event that is both audience-centered, and a powerful demonstration of social learning.

Archer and Wearing (2003) propose a “person-centered sociology of interpretation,” arguing that the current dominant interpretive model is utilized more for the purpose of controlling visitors and their impacts, than for interaction and engagement of visitors with each other, host communities, and nature. Reviewing the issue from the touristic perspective, they stress the importance of empowering visitors and enabling them to be active participants in the “construction and meaning-making of their own personal interpretive experiences.” They decry

the attempted “hegemonic control” over ways tourists understand and make meaning, reminding the reader that “Tourists...bring with them on their visit their own set of beliefs and ideas about nature.” They also emphasize the importance of social interaction in meaning-making:

Social interaction with the group and community are fundamental elements and contribute to the social exchange (seen as a process) of the experience. Social processes contribute significantly to the development of meanings about the tourism experience. These meanings are derived through social interaction with family and friends...

The future of personal interpretation, then, appears to lie in a trend away from methods that rely heavily on top-down message and information delivery to a passive audience, towards models that acknowledge the active role that visitors play in constructing their own experience and learning.

The fact that a behavior such as social learning – a phenomenon that promotes constructive learning and community-building – is already present and acknowledged by visitors, is encouraging. It implies that a training solution is both feasible and practical: raising awareness in the interpretive naturalist community, so that guides can understand and leverage this already existing and extremely effective learning and community-building approach.

In sum, nature interpretation in the field, a function that has been traditionally perceived as educational, has been revealed as a forum for complex and multifaceted activities, encompassing socializing, shared constructive learning, the creation of community and reinforcement of identity, and visitor empowerment. The agents of these functions are nature guides, who find themselves with the multiple responsibilities of host, logistical coordinator, mentor, process mediator, and not least, educator. Guides have been described by researchers as

“impresarios” of the nature experience – a term that surely reflects the complexity of this role more accurately than “interpreter.”

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## **Appendix A: Study Instruments**

### **Interview Questions**

#### *Visitors*

- Thinking back over this experience, tell me about any particular moments or events that stand out for you.
- What did you notice about the physical setting?
- What did you notice about the person leading the walk?
- What did you notice about the group you were with?
- What did you notice about what the guide said or did?
- How is this experience similar to or different from other nature experiences that you have had?
- How would the experience have been different without the guide?
- How did being part of a group affect the experience?
- As a result of this experience, do you feel differently about this place, or about other nature places?
- Did this experience change how you feel about nature? If so, how?
- Is there anything else you want to tell me about this experience?

## *Guides*

- Thinking back over this experience, tell me about any particular moments or events that stand out for you.
- What kinds of decisions did you make (e.g., where to walk, what to look at, how to explain something)? Tell me about them.
- What methods do you use to engage visitors during these walks? Do some work better than others? Tell me about that.
- What outcomes do you hope to achieve as a result of leading these excursions? How effectively do you feel you achieved them on this trip?
- Describe the biggest challenges that you faced in the course of leading this excursion.
- In what ways has your understanding of this place changed as a result of guiding visitors here?
- Tell me about your background as an outdoor guide.
- Is there anything else you want to tell me about this experience?

## Interpretive Methods Checklist

Category	Interpretive Method/Approach	Notes/Observations
<b>Cognitive</b>		
	Presented Knowledge	
<b>Cognitive-Relational</b>		
	Unlocked layers of meaning	
	Developed unexpected links	
	Deconstructed myths	
	Presented a theme	
	Used a holistic approach	
	Used analogy/metaphor	
	Used story-telling or narrative	
<b>Constructive</b>		
	Engaged audience with questions	
	Engaged audience with activities	
<b>Sensory</b>		
	Created word pictures	
	Utilized sensory awareness	
<b>Affective</b>		
	Appealed to emotion	

Category	Interpretive Method/Approach	Notes/Observations
	Provided emotional response cues	
	Created a sense of safety or danger	
<b>Self</b>		
	Facilitated reflection	
	Encouraged reminiscence	
	Related to audience personal experience	
<b>Social</b>		
	Engaged in private conversation with group	
	Promoted group bonding	
<b>Other</b>		
	Other (“silent” moments, emphasizing aesthetics, etc.)	

## Appendix B: Codes

Category	Code	Description
Activity	Ac	Cognitive
	Ai	Interactive
	As	General sensory
	At	Touch (find clams with toes, etc.)
	Av	Visual (bird-watching, what see)
Challenges	C1	Difficult visitors
	Ca	Unfamiliar demographic
	Cc	Visitor or subgroup conflicting with another
	Cch	Change of itinerary or program
	Cd	Visitor or subgroup pulling group in a direction or dominating
	Cf	Safety of visitors
	Ch	Physical effort required by guide
	Ci	Group has mixed interests, level of expertise, ages
	Cig	Frustratingly ignorant visitor
	Ck	Kids
	Cm	Weather
	Cp	People may not be prepared for an experience
	Cpa	Passive or disinterested visitor
	Cph	How to handle physical challenges (terrain, bugs, weather)
	Cr	Presence of researcher
	Cs	Pace of trip
	Ct	Developing better programs
	Cu	Visitors not connected to nature
	Cue	Unexpected events (weather, no wildlife)
	Cuv	Unhappy, frightened or difficult visitor
	Cv	Finding proper "Voice" for a group or excursion
	Cw	Not enough time to prepare for excursion
	Cx	Guide level of expertise with subject
	Cz	Group size

Category	Code	Description
Decision factors	Da	Timing of factors/events
	Dc	General crowding issues
	Dd	How to approach physical discomforts (bugs, terrain, weather)
	Df	How often to stop
	Di	Itinerary changed due to physical conditions
	DI	Leadership -- how much do I do what the group wants and expects, vs. what I think they will enjoy/need?
	Dn	Group interest level
	Do	Which decision will leave the most options open
	Dp	Physical conditions: tide, weather
	Dph	Physical condition of group members
	Dt	Type of trip (challenging hike, boat-reliant, general ecology)
	Dw	Wildlife conditions - likelihood of finding
	Dx	Accessibility of feature/place
	Dy	Diversity of habitats
	Dz	Size of group
Emotions	Eb	Experience of beauty or awe
	Ed	Anxious to please visitors
	Ee	Obligation to meet group expectations
	Ek	Pride in knowledge
	Em	Experience brings back a pleasant memory
	Ep	Feeling for place
	Epr	Pride in the organization
	Eq	Experience of quietness
	Es	Satisfaction at meeting goals
	Ex	Excitement at learning new things
Professional frustrations/dissatisfaction	Fe	No formal interpretive or educational training
	Ff	Insufficient feedback on results, what works
	Fn	Not being able to meet an individuals' or groups' needs
	Fq	Can't answer audience questions
	Fr	Compromising by backing off and addressing squeamishness or reality of nature
Desired outcomes (goals)	Ga	Facilitate an aesthetic experience; be in the moment

Category	Code	Description
for trip)		
	Gb	Generate new members
	Gc	Connect people to nature, help them relate positively to nature
	Gd	Have people understand importance of this place/habitat
	Ge	Connect people to activity they signed up for (enjoyment and satisfaction - expectations met)
	Gg	Keep at a general knowledge level
	Gh	Create a whole (holistic) experience out of its many parts
	Gi	Stimulate people with more specific interests
	Gj	Have people enjoy the experience
	Gl	Have people learn
	Gm	Knowing if goals were met (attitude, responsiveness at end, etc.)
	Gn	Share my relationship and connection to nature with visitors
	Go	Create a positive image for my organization
	Gp	Have visitors recommend the organization
	Gr	Have visitors reflect positively on the experience
	Grt	Have visitors return
	Gs	Surprise visitors
	Gsh	Share my knowledge and discoveries about nature
	GSt	Meet own needs for stimulation (ST=Stimulation)
	Gt	Generate stewardship
	Gu	Community outreach
	Gv	Add value or gain
	Gvv	Generate volunteers
	Gx	Meet expectations of myself
	Gy	Bring people into sanctuary community
Approach (deployed by guide)	Ha	Relate to audience
	Hc	Offer choices when people are having difficulty
	He	Reach out to engage people who may be having difficulty (E=Engage)
	Hf	Stay flexible (itinerary)
	Hh	Admit when you don't know
	Hi	Reach out to individual visitors with different interest/ motivation/ ability

Category	Code	Description
	Ho	Use a general outline, talking points
	Hp	Take a positive environmental viewpoint
	Hq	Ask questions that encourage visitors to think and speculate
	Hs	Creative problem solving
	Ht	Tell story about a place
	Hu	Encourage questions from visitors
	Hv	Let visitors determine the focus
Qualities perceived in the guide	Ia	Relate to audience needs/interests
	Ic	Manage children in group
	Id	Indecisive/ decisive re. route, approach, etc.
	Ie	Manages visitor expectations
	Ien	Energetic
	If	Willing to share personal experience/ information
	Ig	Pleasant, easygoing, charming, personable
	Ih	Good sense of humor
	Il	Listens to visitors
	Im	Group management ability
	In	Surprise visitor with something new
	Io	Organized
	Ip	Provides a new perspective on a place
	Ipp	Well-prepared
	Ir	Responsive and attentive to questions
	Irs	Shows and models respect for nature
	Is	Shares her/his personal perspective and experiences
	It	Talks clearly and audibly
	Its	Talks to visitors individually and shares knowledge
	Iu	Enthusiastic, passionate
	Iv	Can handle a varied audience, audience level
	Ix	Calm and relaxed
	Ixc	Creates excitement and interest
	Ixn	Not constantly admonishing
Children	Ka	Require different approach
	Kd	Distraction for adult visitors

Category	Code	Description
	Ke	Source of engagement (as opposed to distraction)
	Kk	Use kids as a way to reach parents
	Kp	Use parents as way to reach kids
Motivation of visitors	Ma	Have a little adventure; have fun
	Mac	Engage in a specific activity (kayaking, hiking, canoeing)
	Mb	Observe animal behavior
	Mc	See more (wildlife, etc.)
	Mco	Cost is an issue
	Mcon	Active learning, constructivist
	Md	Social: Share and compare nature experiences with others
	Me	Experience of the location and its wildlife
	Mf	Have a family experience
	Mfr	Have a friend experience
	Mg	Take an excursion with a particular guide
	Mi	Visitors feel insecure or unsure in nature and want a guide
	MI	Learn something new
	Mm	Social: More people to notice things
	Mn	Experience new areas may not have known about
	Mo	Get out in nature
	Mp	Return to a loved, familiar place
	Mr	For refuge/ restoration
	Ms	Social - share the experience
	Mt	Tradition of doing this excursion
	Mu	Be surprised at something new or novel; new environment
	Mw	Just want a walk
	Mx	Don't know why visitors come
	Mxp	Explore nature/this place
Desired outcomes (goals for trip)	Oa	Increased environmental awareness
	Oc	More confident out in nature
	Of	Focus attention on nature
	Oi	Inspired by the experience to do more nature activities
	Ok	Visitors become their own experts; knowledgeable
	On	Learned something new

Category	Code	Description
	Op	Increased connection to place
	Oq	Visitors become less squeamish
	Or	Increased personal environmental responsibility
	Ox	Have visitors enhance their understanding relative to their preconceptions
Place	Pd	Likes a new, different, novel place
	Pe	Opportunity to experience site
	Pl	Opportunity to learn about site intimately
	Pn	Discover new place/trail
	Pn	Learn environmental significance of this place
	Pv	Likes varied landscape/ habitat
Quality of the experience	Qg	Depends on the guide
	Ql	Learn better when feel comfortable, relaxed, not stressed
	Qm	Best when can slow down and be in the moment
	Qs	Sensory
	Qv	Depends on visitor group
Guide perception of role	Ra	Actor
	Rs	Salesperson
Rewards of guiding	REa	Appreciation of my work by visitors
	REb	Being part of the learning experience
	REc	Getting people excited, interested
	REd	Having a new or different nature experience
	REe	Working with endangered species
	REf	Friendships with like-minded people
	REg	Having engaged, enthusiastic people on the walk
	REi	Understanding the immanence/ presence of nature
	REl	Learning
	REn	Networking with like-minded people
	REo	Being outdoors
	REr	Becoming a better educator
	REt	Transform a passive or unhappy visitor to satisfied
	REv	Having a varied audience
	REw	Seeing wildlife
	REx	Recognition of expertise

Category	Code	Description
Social issues and observations	Sgl	Group too large/ group size a factor
	Sc	Meet people with common interests
	Sd	Observing social dynamics
	Se	Engage with guide/visitor
	Sg	Learn from group, in general
	Sk	Enjoy kids' experiences
	Sl	Meet like-minded ("nice") people
	Sn	Group hike norms not observed/ observed; awareness or norms
	Sp	People-watching
	Sq	Learn from group questions
	Ss	Social Skills General
	Sv	Get a different viewpoint/ perspective on place
	So	Judging outcomes by visitor attitudes and actions
Visitor trends	Tf	Family-oriented programming
	Ti	Increased insecurity in natural places
Visitor characteristics	Va	Just looking for something new, adventure
	Vd	Dress and outfitting (boots, binoculars)
	Ve	Curious, motivated, engaged
	Vt	Group type (family, adult)
	Vy	Age
Decision factors	Wa	Interpretive approach: hands-on, identification
	Wi	Itinerary
	Wl	Level of presentation
Guide skills	Xa	Awareness of factors beyond guide's control (parenting issues, likes/dislikes of visitors)
	Xb	Has a backup plan if conditions are not salubrious (for seeing landscape, wildlife)
	Xbd	Breadth and depth of expertise
	Xc	Communication
	Xd	Depth of knowledge
	Xe	Explains what I see
	Xf	Suggests follow-up activities or places to visit
	Xh	Holistic knowledge (ecohistory, etc.; integrates knowledge)

Category	Code	Description
	Xi	Ability to identify
	Xk	Generalist knowledge; defined by visitors as an "expert" (breadth)
	Xm	Shows method for how to hear and see
	Xn	Notices things
	Xo	Organization has credibility
	Xp	Knowledge of place (time and location of wildlife etc.)
	Xr	Addresses nature relationships (landscape-wildlife- climate etc.)
	Xt	Awareness of formal pedagogies
	Xv	Introduces new perspective
	Xx	Experienced
Self-characterization	Za	Person who is interested in teaching adults
	Zb	Person who is interested in birds
	Zc	Person who is connected to nature
	Ze	Person who is an educator
	Zg	Person who loves guiding
	Zi	Person who is interested in nature
	Zk	Person who is interested in teaching kids
	Zn	Person who is a naturalist
	Zo	Person who loves the outdoors
	Zp	Person who is interested in plants and gardens
	Zs	Person who is interested in the science
	Zw	Person with general interest in wildlife work

## **Appendix C: Permissions**

**Kate Jurow**

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**From:** Kate Jurow <katejurow@rcn.com>  
**Sent:** Wednesday, January 13, 2016 2:03 PM  
**To:** 'be@wenger-trayner.com'  
**Subject:** Permission request to use material in doctoral dissertation  
**Attachments:** Wenger Diagram.docx

Dear Dr. Wenger,

I am a doctoral candidate completing my dissertation at Antioch University. I would like permission to use one of your diagrams (attached, from the book "Contemporary Theories of Learning"\*) in my dissertation.

The dissertation will be published in the following locations:

- Proquest Dissertations and Theses Database ( Proquest is a Print on Demand Publisher): <http://www.proquest.com/products-services/pqdt.html>
- Ohiolink Electronic Theses and Dissertations Center ( Ohiolink ETD Center is an open access archive): <https://etd.ohiolink.edu/>
- AURA: Antioch University Repository and Archive ( AURA is an open access archive): <http://aura.antioch.edu/>

The attached file shows the graphic, and the in-text discussion that will accompany it.

Thank you so much for your consideration. Your work has clarified and enhanced many of my research conclusions.

Regards,

Kate Jurow  
Doctoral Candidate, Environmental Studies, Antioch University

\*Wenger, Etienne. 2009. "A Social Theory of Learning." In *Contemporary Theories of Learning: Learning Theorists in Their Own Words*, 209–18. London; New York: Routledge.

**Kate Jurow**

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**From:** Etienne and Bev Wenger-Trayner <be@wenger-trayner.com>  
**Sent:** Monday, January 18, 2016 10:57 PM  
**To:** Kate Jurow  
**Subject:** Re: Permission request to use material in doctoral dissertation

Dear Kate,

I am glad to grant you permission to use the diagram in your dissertation.

All the best on your project,

Etienne

 **Etienne and Bev Wenger-Trayner** | E [be@wenger-trayner.com](mailto:be@wenger-trayner.com) | Blog and resources: [wenger-trayner.com](http://wenger-trayner.com)  
Social learning theorists and consultants | T +1 (530) 205 3534 | BEtreat workshops: [wenger-trayner.com/betreat](http://wenger-trayner.com/betreat)

On Jan 13, 2016, at 11:02 AM, Kate Jurow <[katejurow@rcn.com](mailto:katejurow@rcn.com)> wrote:

Dear Dr. Wenger,

I am a doctoral candidate completing my dissertation at Antioch University. I would like permission to use one of your diagrams (attached, from the book "Contemporary Theories of Learning"\*) in my dissertation.

The dissertation will be published in the following locations:

- Proquest Dissertations and Theses Database ( Proquest is a Print on Demand Publisher): <http://www.proquest.com/products-services/pqdt.html>
- Ohiolink Electronic Theses and Dissertations Center ( Ohiolink ETD Center is an open access archive): <https://etd.ohiolink.edu/>
- AURA: Antioch University Repository and Archive ( AURA is an open access archive): <http://aura.antioch.edu/>

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Thank you so much for your consideration. Your work has clarified and enhanced many of my research conclusions.

Regards,

Kate Jurow  
Doctoral Candidate, Environmental Studies, Antioch University

\*Wenger, Etienne. 2009. "A Social Theory of Learning." In *Contemporary Theories of Learning: Learning Theorists in Their Own Words*, 209–18. London; New York: Routledge.

<Wenger Diagram.docx>

**Kate Jurow**

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**From:** Kate Jurow <katejurow@rcn.com>  
**Sent:** Wednesday, January 13, 2016 2:21 PM  
**To:** 'wjchen@mail.tku.edu.tw'  
**Subject:** Permission request to use material in doctoral dissertation  
**Attachments:** Chen diagram.jpg

Dear Dr. Chen,

I am a doctoral candidate completing my dissertation at Antioch University. I would like permission to use one of your diagrams (attached, from your dissertation "The Craft and Concept of Interpretation") in my own dissertation ("Making Meaning Together: The role of interpretation during a short-term nature excursion"). I use your model and research cite as an example in my discussion of ways in which interpreters facilitate meanings and connections.

The dissertation will be published in the following locations:

- Proquest Dissertations and Theses Database ( Proquest is a Print on Demand Publisher): <http://www.proquest.com/products-services/pqdt.html>
- Ohiolink Electronic Theses and Dissertations Center ( Ohiolink ETD Center is an open access archive): <https://etd.ohiolink.edu/>
- AURA: Antioch University Repository and Archive ( AURA is an open access archive): <http://aura.antioch.edu/>

The attached file shows the graphic.

Thank you so much for your consideration. I truly enjoyed reading your research and have become quite familiar with it. It had a profound impact on my own research and conclusions.

Regards,

Kate Jurow  
Doctoral Candidate, Environmental Studies, Antioch University

**Kate Jurow**

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**From:** W. Jasmine Chen <wjchen@tku.edu.tw>  
**Sent:** Wednesday, April 06, 2016 3:41 AM  
**To:** 'Kate Jurow'  
**Cc:** coblet@umsl.edu  
**Subject:** RE: Permission request to use material in doctoral dissertation

Dear Ms. Jurow,

Thank you for your message and interest on my doctoral dissertation. I am thrilled to know that a perspective reader found the conceptual model useful to your own research. My advisor Dr. Theresa Coble (now at University of Missouri at St. Louis) also used it as a reading in her online graduate course. And yes! You have my permission to use it in your writing. Please do let us know when you finish writing.

I want to apologize for this very very late reply. For some reason, your (.com) email address went to the spam bin which might be caused by my university's email setting. Thanks to Dr. Ju Chou whom you met at NAI's conference in Wellington, New Zealand for sending me another message. He informed me that you are also a park ranger with the NPS? Happy 100<sup>th</sup> Anniversary. I read from various sources with all the programs and projects taking place this year! Which park are you at?

All the best with your research and writing. May the lights shine upon you when you progress to the finish line

Cheers, Jasmine

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