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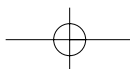
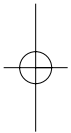
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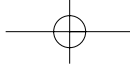
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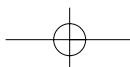
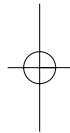
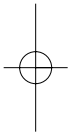
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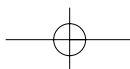
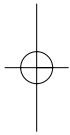
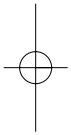
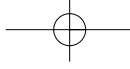
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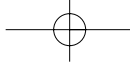
A Note from the Editor

Our readers may have noticed the new look of the *Journal of Interpretation Research* with the publication of our previous issue. As we proceed to improve the publication by broadening its coverage and perspective of heritage interpretation research, we are also making changes to its appearance. We are grateful to Mr. Paul Caputo, National Association for Interpretation's art director and *JIR* production editor. It is a pleasure to work with such a talented professional.

Another item that might have captured the attention of our readers with our most recent issue of the *JIR*, as well as the current publication, may be the 2002 date. Although the issues (volume 7, numbers 1 and 2) are actually published in the year 2003, they must carry the previous year's identity due to our legal obligations to our members and library subscription holders. Two additional issues will be published this year with the current 2003 identity. While this may be confusing to our readers, this adjustment of publication dates will allow us to return to a normal publication schedule starting with the current year.

An inherent difficulty in publishing a scholarly academic journal in a topic area such as heritage interpretation may offer an explanation for the irregular publication schedule we have faced over the previous year. Most scientific journals offer a platform for reporting empirical research findings and scholarly discussions about an established theoretically supported body of knowledge. These publications tend to be a vessel for capturing an ever-growing theoretical development of the existing subject area. In the case of the *Journal of Interpretation Research*, we not only report on a variety of empirical findings and scholarly discourse of those involved in interpretation, but we are in the process of defining the unique nuances of this new research area involving heritage interpretation. The process of establishing a well-defined field of study has been very time consuming.

The *Journal of Interpretation Research* established a commitment to excellence under its first editor, Dr. Ted Cable. While we may have been off of a regular publication schedule in the past, our obligation to providing only high quality publication has been an uncompromising editorial policy of the *JIR*, created by Cable. Many times we have rejected materials for publication based on the stringent standards we had established. While it may have been easier to publish marginal or poor quality articles to meet our publication schedule,

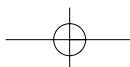
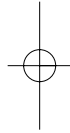


A NOTE FROM THE EDITOR

we have maintained our commitment to quality. The current issue contains four such quality articles, addressing such topics as interpretation of live animal use in zoo settings, cruise-based nature guiding, dangerous wildlife encounters in Australia, and phenomenological analysis of long-term recollections.

The editorial and publication staff of the *Journal of Interpretation Research* continues our dedication to provide the best in research and scholarly developments in the field of heritage interpretation. We will continue to update and improve the *JIR*.

—CMB



A Phenomenological
Analysis of Long-Term
Recollections
of an Interpretive
Program

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Abstract

This study used a phenomenological approach to investigate the recollections of participants of an interpretive experience. Four individuals who participated in an interpretive program during July of 1999 were interviewed in the fall of 2000. Six factors relating to the participants' memory were identified after the interview data was analyzed and cross-examined. The six factors were novelty, personal significance, speaker qualities, activities that occur during learning, prior knowledge/misconceptions, and visual imagery. Three of these themes related to factors affecting what they paid attention to during the interpretive program. These were identified as novelty, personal significance, and speaker qualities. The three other themes developed from the participants' responses (activities that occur during learning, prior knowledge/misconceptions and visual imagery) were associated with factors that influence the specific ways in which learners store information in long-term memory. The findings of this small sample may not be generalized, but they do have important implications with regard to the impact of recall of an interpretive experience.

Keywords

interpretation, long-term recollection, memory research, factors affecting attention, phenomenological research.

Introduction

Millions of individuals participate in interpretive programs annually. These short-term public offerings are housed at a variety of facilities that include local, state, and national parks, zoos, aquaria, historical sites, and other cultural entities. A variety of outcomes are desired from participation in

these interpretive programs—from art appreciation to understanding zoological phenomena. However, the brevity of the program makes it difficult to assess whether the outcomes sought by interpreters are accomplished.

Potential knowledge, attitude, and/or behavior changes may be assessed in the short term but are significantly more difficult to measure months or perhaps years following these isolated events. One question that can be analyzed is, how much does a participant of an interpretive program remember long after the experience? This study was an attempt to analyze a basic determinant of long-term outcomes: the constituents' recollection of an interpretive program—in particular, the assessment of factors that aid in recollection of the interpretive experience.

Review of Literature

The outcomes desired by interpreters tend to represent variables such as visitor knowledge, attitude, and behavior toward the resource site (Knapp, 1994). Orion and Hofstein (1994) have reported that during the last two decades empirical studies evaluating an interpretive program's impact have increased sharply. A significant proportion of this research has supported the notion that an interpretive experience can positively impact the knowledge of the resource site and its related subjects (Knapp, 2000; Koran, Koran & Ellis, 1989; Lisowski & Disinger, 1988; Ramey, Walberg & Walberg, 1994).

Evidence that an interpretive experience can promote initial knowledge retention (Beckmann, 1999; Loomis, 1996; Atkinson & Mullins, 1998) sets up a more difficult question: how long do individuals hold on to this information? More precisely, what do participants of an interpretive program remember one year or more after the initial experience? Are these memories associated with interpreter-derived program objectives or tertiary variables such as social or environmental factors?

Recent interpretive publications have noted the importance of memory and recall. In discussing cognitive effects of interpretation, Webb suggested that, "While learning is the input, memory is the output. We assess learning only through memory" (p. 22, 2000). Following the analysis of long-term impacts of school field trips, Falk and Dierking confirmed the important relationship that memory has with learning in these informal types of settings (1997). In an exploratory research study of pivotal learning experiences of museum professionals, Spock notes that the memories of early museum visits by these individuals played an important role in their future interest in the museum field (2000). Chawla (1998) suggests that memory-related research associated with formal and informal events (such as interpretation) can provide rich information. "When it comes to the broad outline of life events and their significance, memory's reputation fares much better [than other media]" (p. 387). In the textbook *Interpretation for the 21st Century* Beck & Cable (1998), suggest that interpreters' first principle should be to not only relate information to the visitor but also to help retain that information. "Effective interpretation produces external stimuli that trigger existing (cognitive) maps, thereby allowing the audience to get it and store the information in relation to other information they already possess" (p. 16). Although assessment of memorable experiences in the related fields of visitor and museum studies has begun to develop, the interpretive field has yet to establish significant research in this area (Koran, Willems, & Camp, 2000; Falk & Dierking, 1997).

The lack of substantial research in memory associated with interpretation prompted the authors to look to the psychological domain. There are a number of theories related to both

short-term and long-term memory. A prevalent view of human memory, however, is associated with a dual-store model (Ormrod, 1999). This model asserts that memory has three components: a sensory register, short-term (working) memory, and long-term memory (Atkinson and Shiffrin, 1968; 1971). The sensory register holds virtually all of the information that has been sensed for a very short period of time. Information that an individual pays attention to is processed so that it enters working memory, whereas information that is not attended to may be lost from the memory system (Ormrod, 1999). Therefore, attention plays an essential role in moving information from the sensory register to working memory (Atkinson & Shiffrin, 1968; Cowan, 1995). However, what kinds of stimuli tend to draw attention? Ormrod (1999) proposed some important factors affecting what people pay attention to, including size, intensity, novelty, incongruity, emotion, and personal significance. Information that is attended to moves on to working memory where it is actively processed. Working memory has a limited capacity and information stored here lasts only about 5–20 seconds unless it is processed further (Ormrod, 1999). Information that undergoes further processing moves on to the long-term memory. Several factors that influence the specific ways in which learners store information in long-term memory include activities that occur during learning, working memory, prior knowledge, prior misconceptions, and expectations (Ormrod, 1999).

It would seem prudent to assess variables that capture the attention of individuals who participate in an interpretive program. These variables would seem to aid in the recollection of the interpretive program according to Ormrod (1999). Further, it would seem important to learn what potential factors exist in an interpretive program that could influence this information to be stored in long-term memory. This pilot study assessed the recollections of participants of an interpretive program to investigate the above variables.

This study used a phenomenological approach to investigate the recollections of participants of an interpretive experience. Phenomenology seeks clarification and understanding of people's perceptions and experiences, especially the meanings they give to events, concepts, and issues (Mabry, 2000). There are generally three research processes that compose the phenomenological method: investigation of the phenomena (in this case participant recall of an interpretive experience), identification of general themes/essences of the phenomena, and delineating essential relationships from the themes (Creswell, 1998). The researcher collects data from the individuals who have experienced the phenomena. This information is collected through in-depth interviews. The data is then analyzed through a series of steps that include horizontalization (data divided into statements). The units are then transformed into clusters of meanings and are tied together to make a general description of the experience. Similar to interpretive biographers, phenomenology views verification and standards as largely related to the researcher's interpretation (Moustakas, 1994).

Methodology

The individuals involved in this study participated in an evening interpretive program during July of 1999 at the Hoosier National Forest in southern Indiana. This program was a one-hour evening presentation on bats of Indiana. The location of the program was a campground amphitheater. Attendance at the program was approximately 40 people, predominantly families. The general objectives of the presentation were the following:

- To make the visitor aware of the natural history of the bat.
- To make the visitor aware of the fallacies of negative bat behavior.
- To improve visitors' attitudes toward bats.

Prior to the presentation, adult visitors (ages 18 and older) were asked if they would want to be involved in a long-term study on the impacts of an interpretive program. Those that agreed completed a form that asked for contact information for future use. Ten people agreed to participate in the study and completed the forms.

The interpretive program began with a handout "test," which quizzed participants on particular falsehoods regarding bats. Each of the questions was then answered throughout the evening. The statements included items such as, "True or false, bats have the ability to suck blood from humans." The presentation included a forty-minute slide presentation along with a fifteen-minute question and answer period. The interpreter, a seasoned naturalist with over 20 years of experience, relied primarily on these two traditional program strategies. There were no hands-on items or other "props".

During the fall of 2000, the consenting individuals were contacted by phone and were again asked if they would participate in the study. Out of the original ten who agreed, only four completed the assessment. Attrition was due to change in address and/or refusal to complete the study. All four participants were women ranging in age from mid-twenties to late 30s residing within 30 miles of the Forest Service site. Each had viewed the program with their immediate families (partners and children).

The semi-structured interviews were organized to accommodate the participant's individual responses and conversation. The interviews began with one general/open-ended question to avoid any cuing of events. The researcher asked, "Could you describe for me the program that you participated in at the Hoosier National Forest in the summer of 1999?"

When a respondent mentioned specific experiences, the researcher would offer follow-up questions such as:

- Can you recollect what the interpreter said about that topic?
- What else did the interpreter say pertaining to that point?
- What other experiences do you remember pertaining to the program?
- Were there other parts of the program as well?
- Why did that particular experience come to mind?

These follow-up questions were used with the initial probe to attempt to assure that participant responses were their own thoughts and not statements made to please the interviewer. When the respondent had described her experiences and no further clarification was required, the interview was completed. The length of the interviews varied from 20 to 40 minutes. The raw data were transcribed verbatim for each subject. The phenomenological analysis steps follow (Creswell, 1998):

- All data was read in its entirety by both researchers.
- Significant statements that directly pertained to the phenomenon (participant recall of an interpretive experience) were extracted from each data set.
- Clusters of themes were organized from the statements. This allowed for the emergence of themes common to all the subject's descriptions.
- These clusters of themes were referred back to the original data in order to validate the data.
- Discrepancies were noted and any inconsistencies were addressed.
- A description of the phenomena resulted from the above results.

Findings

Six themes relating to the participants' recollection of an interpretive program were identified after the interview data was analyzed. The six themes were novelty, personal significance, speaker qualities, activities that occur during learning, prior knowledge/misconceptions, and visual imagery. The effects of each of the six areas on the participants' memory about the bat program are analyzed below. Throughout the analysis the subjects will be identified numerically (one through four).

Novelty

From what the participants recalled, they tended to remember a part of the program that was novel or unusual either in the setting or the topic presented. Three of the four participants mentioned that they liked or enjoyed the setting being outdoors. Participant number one described how she felt about being outdoors while watching the bat program:

I think because most of the time when you're getting information...about animals maybe from the state park setting or whatever the setting might be, it tends to be indoor, and I think being outdoors, it is kind of unique and novel, and just...a more enjoyable experience, because you can hear the sounds, the summer sounds, and that type of thing. So it made it a little more memorable.

In addition, participants two, three, and four mentioned that they remembered that the speaker talked about building bat houses, and participants two and three remembered talking about bats' guano, their endangered status and eating habits of bats—topics they considered “unusual.” Participant number four talked about the slides showing different kinds of bats:

They showed some really weird-looking bats. Some of them really, they weren't seen before, I guess. They're really weird, like the great big cute ears, or the face like a dog or something. You know, I thought...I didn't get to know and see anything like that...

Participant number three also remembered the pictures of the bats because it was the first opportunity she had to see bats “up close.” Participant one recalled that the speaker “tried to find some bats for us to see, using like a little sonar thing.” In sum, the setting (outdoors) and some of the topics recollected by the participants were novel or unusual in some way (never seen or heard before), and therefore were recalled.

Personal Significance

The participants recalled some part of the bat program when the information presented was important or relevant to them. These participants were all very concerned about their children's reactions to the program. (As mentioned previously, all four participants had children present at the program.) They noticed and remembered any part of the program that interested their children. Participant number one's response revealed the parents' concerns that were typical in this study: “We had a bunch of kids...but even my seven-year-olds, they said pretty well they were interested [in the bat program]...I remember we talked about that [bats' guano] and my kids thought that was really interesting.” This participant also cared about her kids' learning from the bat program: “I thought they did inform us, and my kids did go home wanting to help bats...I think it is important for the little kids.” Participant number four also expressed that how her kids felt about the program affected what she remembered: “Why do I remember? I guess because we enjoyed this so much and the kids really liked it, and we liked it.”

Participants two, three, and four remembered that the speaker introduced the species of

bats as being endangered and the most popular in Indiana. These participants, who are all residents of Indiana, remembered the specific species of bats perhaps because they felt the “hometown” species is more important or closely related to them than other species of bats.

Speaker Qualities

Speaker qualities seemed to be another important factor to making the bat program more memorable for the participants in this study. Participant two commented that “[the interpreter] was a good speaker...and she could have our attention the whole time while we were sitting and waiting.” Participant three also had a very positive evaluation of the speaker. She thought the speaker did a successful job in keeping the audience interested in the program:

She was very good with the group as a whole. She took control of the group, because I know that being outside...people had the tendency to get up and do what they need to do, and kids are a little more apprehensive because it was at nighttime. She would just take control.

Other qualities of the speaker referred to by the participants were that she was very friendly/helpful, very nice, informative, and patient/very good with kids. The speaker’s congenial personality made the participants enjoy her presentation and, at the same time, recall the program.

Activities That Occur During Learning

One type of activity appeared to facilitate the participants’ recollections. The true/false “quiz” given prior to the program was recalled by two of the participants. Participant number one recalled the test:

They did give some sort of a true/false test. We handed it out, and we answered it, and we turned it back in. And they went over it whether they were true or false...They kind of let us know...how people think they know that, but maybe realized that we didn’t know as much as we thought.

When participant number three was asked what the most important segment of this program was for her, she recollected:

I don’t know. I liked that they did a little true false thing.... We did probably learn more from that than anything because after we filled that out, we went over the questions. That was interesting to see which ones we got right, which ones we got wrong. So I think that...helped us learn more than anything.

Prior Knowledge/Misconceptions

All four participants seemed to have a certain level of prior knowledge about bats that was brought up during the interviews. Much of this information was inaccurate. “Sucking blood” and “being harmful/dangerous” are two most common preconceptions of bats among the participants in this study. But how did these participants’ preconceptions affect their recollection about the bat program? Participant three said that she remembered very little about the bat program because she was afraid of bats and didn’t pay attention to the presentation. Her fear of bats might originate from her misconceptions of bats being harmful. However, for the other three participants, the information presented in the program corrected the erroneous perceptions of bats they had held

before the program. When participant one was asked if any part of the program changed her perception of bats, she replied:

I guess you always have an assumption. Your way of thinking of the bats is vampire bats and they're sucking animals' blood. And really I forget what the percentage was or I don't think we have any in Indiana, and anything around like that.

This same participant also remembered that the speaker talked about different types of bats and how they are useful instead of harmful. The change of her perceptions of bats was evident in the following response:

I guess if I see a bat, I am not as scared as I probably would have been or I feel more comfortable for my kids to see a bat... [Bats] are not dangerous, and not to be scared of them.

Participant four recollected that she was amazed that "the bat was good" and that bats "actually help decrease the amount of insects." She was also surprised to know that "there were specific species that were endangered and that they were valuable." Participant two also recalled: "I guess I remember most that we learned that [bats] are not blind, actually blind, and they don't suck your blood except for certain kinds...they are good for the environment, for bugs..."

This same participant (number two) remembered that bats "don't just live in caves" as well. The following response of hers is another example of how this program corrected her misconceptions of bats: "Before the program, I didn't really like them. I thought they carried rabies and they would bite, I just figured that...[bats] are not gonna be too dangerous or anything." She then concluded:

Just because so many people have such a misconception about [bats]... Maybe especially the kids understand that they are not dangerous, they are not gonna attack us, you know, [bats] are not a bad mammal, they just have a bad reputation.

Visual Imagery

The participants in this study seemed to retain visual forms of information, such as pictures of the slide show and diagrams seen in the bat program. Three of them remembered that there was a slide show with pictures of different kinds of bats. When participant one was asked which part of the program was most entertaining, she replied, "Probably the slides are the most entertaining, 'cause you see the different kinds of bats." Participant four remembered that "they gave us a diagram of information on how to build the bat house."

Discussion

This pilot study attempted to explore the recollections associated with an interpretive experience using a phenomenological approach. As noted previously, attention plays an essential role in aiding recollections (Atkinson & Shiffrin, 1968; Cowan, 1995). Ormrod (1999) proposed some important factors affecting what people pay attention to, including size, intensity, novelty, incongruity, emotion, and personal significance. Two of these factors, novelty and personal significance, were identified in this study. In addition to these two factors, it was found that speaker qualities influenced attention as well. It was also noted in the literature that there are several factors that influence the specific ways in which learners store information in long-term memory including activities that occur during learning, working memory, prior knowledge, prior misconceptions, and expectations (Ormrod,

1999). In this study, activities that occur during learning, prior knowledge/misconceptions, and visual imagery appeared to have an influence on the participants' long-term memory of the bat program.

Factors Influencing Attention

Ormrod (1999) asserted that stimuli that are novel or unusual in some way tend to draw people's attention. The four participants did mention two kinds of novelty while they recalled what they experienced in the bat program: setting novelty (being outside) and topic novelty (such as building bat houses, bats' guano, eating habits of bats, and bat sonar). The setting and the topics recollected by the participants were somewhat novel or unusual (never seen or heard before), and seemed to aid in the participants' attention during the program.

Some research has shown that individuals tend to pay attention to stimuli that are important to them at a given point in time (Gibson & Rader, 1979; Voss & Schauble, 1992; Vurpillot & Ball, 1979). Different kinds of personal significance were identified in the participants' responses: parents' concerns about their children's interest in and learning from the program, individuals' concerns about the impact of bats on their life, health, and the environment, and the concerns of Indiana residents about the "hometown" species. Some of what was recollected by the participants was information that was considered important to them or closely related to them in some way.

Speaker qualities tended to capture the participants' attention in this study, although it has not been identified as an important factor influencing attention in the literature. The participants recalled that the speaker had their attention and kept the audience interested in the program. Obviously the qualities of the speaker referred to by the participants such as being easy to listen, very friendly/helpful, very nice, informative, and patient/very good with kids made the participants enjoy her presentation, and at the same time drew their attention to the program.

Factors Affecting Long-Term Memory Storage

Information that is attended to moves on to working memory, where it is actively processed. Working memory has a limited capacity and information stored in working memory lasts only about 5–20 seconds unless it is processed further (Ormrod, 1999). Information that undergoes further processing moves on to the long-term memory. In this study, activities that occur during learning, prior knowledge/misconceptions, and visual imagery appeared to have an influence on the participants' long-term memory of the bat program.

The only "activity" that was offered during the bat program was the initial bat quiz. This true-false test seemed to help to facilitate the participants' long-term memory storage. For example, one participant recalled that they were given a true-false test and then they went over it. She thought this test helped her know what things they had learned correctly and what things they had learned either incorrectly or not at all.

Ausubel, Novak, and Hanesian (1978) asserted that one of the most important factors affecting long-term memory storage is what a person already knows. Numerous studies have illustrated the importance of previous knowledge for encoding and storing new information (Alexander, Kulikowich, & Schulze, 1994; Rouet, Favart, Britt, & Perfetti, 1997; Schneider, 1993). All four participants seemed to have a certain level of prior knowledge about bats, although most of their prior knowledge was inaccurate. Research has found that individuals

may respond to this “cognitive dissonance” in different ways. People may either ignore the information altogether or change the information to be consistent with their knowledge (Alexander & Judy, 1988; Bishop & Anderson, 1990; Dole, Duffy, Roehler, & Pearson, 1991). In this study, the participants either ignored the information presented in the bat program or corrected their prior erroneous perceptions of bats. The importance of previous knowledge (either accurate or inaccurate) for encoding and storing new information is evident among the participants in this study.

Forming visual images can be a powerful means of storing information in long-term memory. Numerous studies have shown that people have a remarkably accurate memory for visual information (Bruck, Cavanagh, & Ceci, 1991; Levin & Mayer, 1993). In addition, research also indicates that visual images can be retained over long periods of time. In a study by Mandler and Ritchey (1977), people’s memory for meaningfully organized pictures showed little decline over a four-month period. Thus, learners tend to learn more and remember it longer when the material they are studying is concrete and easily visualizable (Clark & Paivio, 1991; Sadoski, Goetz, & Fritz, 1993). In this study the recollection of the use of slides was evident; however, no specific content was recalled in association with the visual aids.

Conclusion

This pilot study attempted to explore the recollections associated with an interpretive experience using a phenomenological approach. Six themes relating to the participants’ recollection of an interpretive program were identified after the interview data was analyzed. The six clusters were novelty, personal significance, speaker qualities, activities that occur during learning, prior knowledge / misconceptions, and visual imagery. Three of these themes related to factors affecting what they paid attention to during the interpretive program. These were identified as novelty, personal significance, and speaker qualities. The three other themes developed from the participants’ responses were associated with factors that influence the specific ways in which learners store information in long-term memory. In this study, activities that occur during learning, prior knowledge/misconceptions and visual imagery appeared to affect the participants’ long-term memory of the bat program.

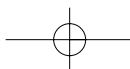
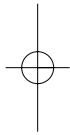
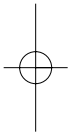
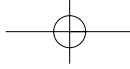
The findings of this small sample may certainly not be generalized, but they do have important implications with regards to the impact of recall of an interpretive experience. The responses from the participants suggest that a short-term program can potentially stimulate attention variables that can move information into working memory. It also suggests that an interpretive program can stimulate variables that can promote long-term memory of the experience. Further research is warranted to understand more about the potential factors of an interpretive program that can help visitor recall.

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Using Interpretive
Animals to Deliver
Affective Messages
in Zoos

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Abstract

The Point Defiance Zoo & Aquarium in Tacoma, Washington, served as the setting for a study to compare visitor responses to traditional and interpretive presentation of a clouded leopard. The primary research goal was to determine how well these two types of presentations achieved the zoo's educational goals of affective message delivery. Researchers made observations of the amount of time visitors spent viewing the clouded leopard and the effort spent seeking information (either reading signs or asking questions). In addition visitors to the traditional exhibit and the interpretive presentation were surveyed about their attitudes about zoo animals and wildlife conservation. Results indicated that visitors viewing the interpretive presentation demonstrated significantly longer viewing time and increased information-seeking as compared to visitors to the traditional exhibit. Additionally, survey results showed that visitors to the interpretive presentation demonstrated more positive feelings about the animal's care and quality of life than those observing the animal in the traditional exhibit.

Keywords

zoos, education, interpretation, interpretive animals, education animals, clouded leopard, viewing time

Introduction

Historically, a large proportion of environmental education programs have focused on changing people's attitudes through the dissemination of knowledge. The basic premise is that people who understand environmental issues better will be motivated to behave in an environmentally responsible manner (Hungerford and Volk, 1993). However, the relationship between knowledge and behavior is not linear. Research has shown that attitudes are not formed solely by cognitive factors (knowledge acquisition), but also through affect (emotions or feelings) (Hungerford and Volk, 1993; Pooley and O'Connor, 2000).

Because feelings and emotions seem to play a significant role in influencing attitudes towards the environment, it is important that educators who want to influence attitudes incorporate the affective domain into their teaching. Iozzi (1989) suggested that emotions play a significant role in developing environmental attitudes and that the affective domain is the "gateway" to the learning process itself. He advocated that informal learning centers should ideally teach through the affective domain and credited this strategy with enhancing cognitive learning as well.

Informal learning centers, such as zoological institutions, are ideal venues for creating emotional ties to wildlife and the environment and in fostering an appreciation for nature. However, crafting educational messages in a free-choice learning environment, such as a zoo, is a difficult task. Zoos have visitors who encompass a wide variety of demographics, and their visits occur in numerous contexts, including with family, friends, or schoolmates. Some come to the zoo to learn; most come as a social experience with friends and family on a casual, recreational outing (Morgan and Hodgkinson, 1999). Recognizing the disparate range of backgrounds and expectations visitors bring with them is critical in establishing a zoo's educational goals. Therefore, zoo educators must consider what messages are most appropriate in this setting and find ways to direct their messages effectively to their audiences. Instead of aiming for deep understanding of complex environmental issues (virtually impossible when the learner is visiting the zoo for a couple of hours with their friends), zoos should strive instead to instill a sense of appreciation and stewardship for animals and the environment—more appropriate goals for a casual visitor. By concentrating on providing innovative experiences that the visitor can truly connect with, zoos can have a tremendous impact on the development of positive environmental attitudes.

While most zoos offer a wide range of formal classes and tours, the general visitor is exposed to a facility's educational messages primarily through its exhibits. An exhibit's "success" is often based upon visitor interest, measured by the length of time visitors spend viewing it. According to Johnston (1998), there is a direct relationship between viewing time and the interest of the visitor. Viewing time is a function of a number of factors, including animal activity (Bitgood, Patterson, and Benefield, 1986; Bitgood, Patterson, and Benefield, 1988; Harris, 1995; Shettel-Neuber, 1988). Wolf and Tymitz (1981) noted that visitors expressed greatest interest in exhibits where animals were active and expressed disappointment towards exhibits where animals were sleeping. Visitor interest is also influenced by the ease with which the animal can be viewed, which in turn is related to exhibit design. Bitgood, et al. (1985) observed that a moat barrier, with no visual screen, resulted in the longest viewing time while a more intrusive barrier, such as bars and fences, resulted in the shortest viewing time. Other factors such as low light levels and glare from glass will negatively affect viewing time (Bitgood, Patterson, and Benefield, 1988). Additionally, this study found that the proximity of the animal in an exhibit to visitors influences the percentage of

visitors who stopped to view it, thereby also increasing viewing time.

Another factor that positively correlates with viewing time is the participatory nature of the exhibit. Harris (1995) found that visitors to a walk-through hummingbird aviary stayed an average of four minutes—significantly longer than the 30-90 seconds typically spent at a zoo exhibit (Bitgood, Patterson, and Benefield, 1988). Harris credits this increased length of stay to the interactive nature of the exhibit and the opportunities for exploration and discovery.

Zoo exhibits, regardless of design or activity levels of the animals they house, have some fundamental problems with respect to influencing the attitudes of zoo visitors. No matter how interactive an exhibit may be, it lacks the human element so important for effective instruction. Exhibits cannot interact with visitors in the personal way that a teacher can, providing variable instruction based upon the interests and needs of the learner (Lederman and Niess, 1998). In a zoo's recreational learning environment this limitation considerably restricts the amount of education that can occur. Zoos rely primarily on graphical interpretation to impart both cognitive and affective information. Studies demonstrate, however, that public use of graphics is extremely limited. For example, Churchman (1985) recorded that 13% of visitors to a tiger exhibit read the sign. Johnston (1998) found that only 5% of all visitors to 10 polar bear exhibits in six zoos in the northeastern United States stopped to read the accompanying graphics. These findings demonstrate the need for zoos to develop a more innovative approach to delivering educational messages to visitors.

One such approach is the use of live, handled animals in interpretive presentations. Zoo educators have discovered that using animals in shows and other presentations is an effective way to engage audiences and nurture emotional connections between people and animals. People do not usually expect to see animals out of cages, being handled by zoo staff. This novelty factor alone is often enough to connect with or "grab" the visitor. People are drawn to animals, and are drawn even more when they have an opportunity for making a closer connection.

A number of benefits derive from the creation of these personal connections. First, it lengthens the learning period for the visitor. Second, by connecting to visitors on such a personal level, zoo educators can better tailor their presentations to their learners. The skillful presenter will quickly evaluate her audience and make subtle (or obvious) shifts in teaching style (depending on the circumstances). Finally, using interpretive animals fosters the perception that zoos are concerned with the well-being of the animals in their care. When observing an interpretive program animal, visitors frequently comment that the animal being handled seems "so happy" and "well cared for." Encouraging feelings in visitors that the animals at the zoo are well cared for and respected may result in return visits and higher levels of public support for the zoo.

While research on the effectiveness of using interpretive animals to deliver educational messages is limited, the evaluation that has taken place so far is positive. Yerke and Burns (1991) and Davison, et al. (1993) evaluated the effect live animal shows had on changing the attitudes of visitors. Both found that shows were successful at holding the audience's attention and influencing people's attitudes about conservation. Yerkes and Burns (1993) evaluated a live bird outreach program presented to fifth-grade students at eight Portland, Oregon, area schools and found students' environmental attitudes enhanced by the presentations.

The Study Setting

Point Defiance Zoo & Aquarium (PDZA) located in Tacoma, Washington, served as the setting for this study. PDZA's interpretive animal program staff presents handled animals in a variety of both formal and informal presentations including shows, off-site outreach programs, and casual encounters on Zoo grounds. The informal use of interpretive animals, specifically a clouded leopard, was the focus of this study. These informal presentations occur when visitors spontaneously encounter handlers walking the clouded leopard around the Zoo. These presentations are unscripted and consist primarily of a question-and-answer format.

Earlier research indicates that the majority of visitors to the Point Defiance Zoo & Aquarium are "very interested" in these live animal presentations (Galdabini, 2000). It is not clear, however, if these presentations accomplish the zoo's educational goals of affective message delivery. This study was initiated to evaluate the affective value of these presentations. The researchers compared responses of visitors viewing a clouded leopard used as an interpretive animal to those viewing the same animal in a traditional exhibit. The objectives were to determine if the interpretive presentation of the clouded leopard increased visitor interest in and empathy toward zoo animals and wildlife in general.

Methods

In 2001, PDZA served as the setting for this study to evaluate the effectiveness of delivering affective messages through interpretive animal presentations. Participants in this study were randomly chosen from members of the PDZA general visitor population who visited either the clouded leopard exhibit or a clouded leopard interpretive presentation. Only visitors above the age of 18 were selected. Data were collected at varying times throughout the day and on varying days of the week. Data collected were both quantitative and qualitative in nature and consisted of the following four components: timing and observation at the exhibit, survey at the exhibit, timing and observation at the informal interpretive presentation, and survey at the informal presentation. No visitor participated in more than one component of this study.

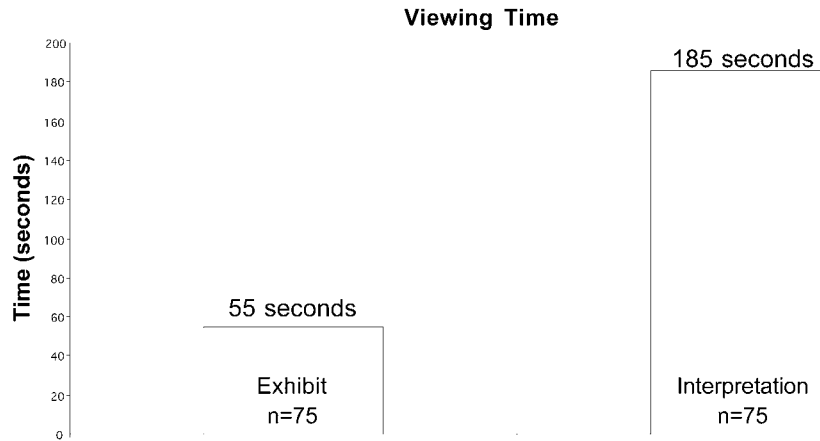
Timing and observation at exhibit

Once an observer was in place at the clouded leopard exhibit, discreet observing began with the fifth visitor to the exhibit. A stopwatch was used to record the amount of time the visitor spent viewing the exhibit. This included cumulative time viewing the animal, reading the graphics, discussing the exhibit with companions, and walking with attention focused on the exhibit. Timing ceased if attention was distracted from the exhibit and continued if the visitor became refocused on the exhibit. Timing terminated when the visitor ceased viewing the exhibit. Whether or not the visitor read the exhibit sign was also recorded. The visitor was said to have read the sign if his or her attention remained focused on it for a minimum of five seconds. Once observation of this visitor was completed, the next visitor to approach the exhibit became the next to be observed.

Survey at the static exhibit

Visitors approaching the exhibit were randomly selected and asked to complete a short survey as they finished their viewing experience at the exhibit. Both quantitative (Likert-type scales, yes/no questions) and qualitative (open-ended questions) measures were included on the survey. Quantitative survey questions asked visitors to rate their opinions about their interest in the animal, the animal's care and quality of life, and wildlife conservation. The

Figure 1
Viewing Time



qualitative questions on the survey were patterned after Serrell and Raphling's (1993) methodology developed to collect affective responses from zoo visitors. This technique asked participants to respond to open-ended statements. The survey provided the following two open-ended prompts: "Before I saw this animal I never realized that..." and "Seeing this animal reminded me that..." The responses were categorized to develop a sense of the impact the exhibit has on the visitors' affective learning.

Timing and observation at informal interpretive presentation

Interpretive presentations involved a PDZA employee removing the animal from its exhibit and presenting it to visitors in spontaneous encounters in various locations on Zoo grounds. Once the observer was in place, the fifth visitor to stop and watch the presentation was the first to be observed. A stopwatch was used to measure the cumulative amount of time the visitor spent viewing the presentation. In addition, the number of questions the participant asked the interpreter was recorded.

Survey at the informal interpretive presentation

A subset of visitors who had stopped to listen to the interpretive presentation was randomly selected to complete a survey following the presentation. The survey administered was the same as that used for evaluation of the static exhibit.

Results

Viewing Time

For this study, 75 visitors were observed viewing the clouded leopard in the static exhibit and 75 were observed viewing it as part of an interpretive presentation. The exhibit observation group consisted of thirty-three male visitors and forty-two female visitors. The interpretive presentation group consisted of thirty-four male visitors and forty-one female visitors. Visitors to the exhibit spent an average of 55 seconds viewing the clouded leopard while visitors to the interpretive presentation spent an average of 185 seconds viewing the same cat out of its enclosure with its handler (Figure 1). The time visitors spent observing

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Table 1
Survey responses

1=strongly disagree; 2=disagree; 3=neutral;
4=agree; 5=strongly agree

ANOVA	Exhibit	Exhibit	Interp	Interp	P value
	Mean	SD	Mean	SD	
1. I am interested in this animal. (exhibit n=54, interp n=56)*	4.33	.70	4.46	.54	.27
2. I believe this animal is well cared for. (exhibit n=55, interp n=57)*	4.00	.77	4.68	.54	<.0001
3. I believe this animal has a high quality of life. (exhibit n=55, interp n=57)*	3.40	.85	4.00	.82	.0002
4. I believe it is important to conserve wildlife. (exhibit n=55, interp n=57)*	4.69	.57	4.74	.48	.65
5. I think enough is being done to conserve wildlife. (exhibit n=52, interp n=49)*	2.46	.98	2.53	.92	.72
6. I would support conservation measures for this animal. (exhibit n=53, interp n=50)*	4.19	.62	4.06	.71	.33

*Not all respondents completed all survey questions

the clouded leopard during the interpretive presentation was 336 percent longer than the time spent observing the cat in the exhibit. A t-test applied to these data demonstrates a significant difference in the viewing times between venues ($P < .0001$ at an alpha level of .05).

Information seeking

The visitors to both the exhibit and the interpretive presentation were observed to determine the degree to which they actively sought information through sign-reading or asking questions. While at the exhibit, 25 percent of visitors read the accompanying graphics for a minimum of five seconds. Seventy-five percent of the visitors did not read the graphics at all. While at the interpretive presentation, 45 percent of visitors asked at least one question. Many visitors asked more than one question; the number of questions asked per visitor ranged from zero to seven with a mean of one.

Surveys

Fifty-seven visitors to the clouded leopard exhibit and 55 visitors to the interpretive presentation completed surveys. The survey posed six questions with rating choices from one to five on a Likert-type scale. Comparing the responses of the two groups using ANOVA techniques indicated significant differences between the groups on responses to two questions (Table 1). Those who observed the clouded leopard in the interpretive presentation believed more strongly that the animal is well cared for than those who observed the cat in the traditional exhibit. Similarly, those who observed the clouded leopard in the interpretive presentation were more likely to believe that the animal has a high quality of life than those who observed the leopard in the traditional exhibit. The remaining four questions showed no significant difference between the survey response groups.

In addition to these quantitative survey questions, visitors were also presented with the

opportunity to explain the rationale for their ratings. Those viewing the traditional exhibit provided 37 responses that were critical of the cat's enclosure or lack of freedom such as "any animal not allowed a wide space to roam can't have a high quality of life."

Respondents at the interpretive presentation provided five such negative responses.

Visitors were also asked open-ended questions to measure any cognitive or affective learning that may have taken place as a result of their viewing experience. After visitors viewed the traditional exhibit, the survey prompt, "*Before I saw this animal I never realized...*" resulted in visitors providing 29 observation responses (e.g., "...that clouded leopards were so small, ...that it had such a long tail") out of 32 total responses. At the interpretive presentation, visitors given the same prompt provided 25 factual responses (e.g., "...that they could catch monkeys, ...that this species is endangered") out of 36 total responses. In response to the prompt, "*Seeing this animal reminded me that...*," captivity issues, such as "animals look better free," were mentioned in four of the 29 responses by viewers of the exhibit. Visitors to the interpretive presentation made no such responses.

Discussion

The results of this study indicate that the use of interpretive animal programming is effective in delivering educational messages in the free-choice learning environment of a zoological park. Visitors viewing a clouded leopard in an interpretive setting demonstrated longer viewing times, greater amounts of information-seeking, and greater positive feelings about the animal's quality of life as compared to visitors viewing the animal in a traditional display.

Obtaining Visitor Attention and Interest

This study found that the use of an interpretive animal had a dramatic effect on the viewing time of visitors. Visitors attended to the clouded leopard three times longer when it was displayed in the interpretive presentation as when it was in the traditional exhibit. This result is evidence of the ability of an interpretive animal presentation to readily interest and engage zoo visitors. Attention of the visitor is a critical first step in delivering both cognitive and affective messages.

Findings here are consistent with those of Bitgood, Patterson, and Benefield (1988) and Wolf and Tymitz (1981), who noted that animals are more interesting to visitors when they are active and more easily observed. In general, interpretive animals are more active than those on display in a traditional exhibit. Bitgood, et al. (1985) noted that the shortest viewing times recorded were at exhibits with intrusive barriers such as bars or fences. The Point Defiance Zoo and Aquarium's clouded leopard exhibit, constructed of black chain-link fencing, could be categorized as being fairly intrusive. When the cat was handled for presentations, there was no visual barrier to viewing at all.

Perhaps the greatest contributing factor to the difference in viewing times was the more provocative nature of the interpretive presentation compared to the traditional exhibit. Seeing a clouded leopard out of its enclosure and interacting with its handler is a novel situation for most zoo visitors. The excitement displayed by visitors as they encountered the cat walking through the zoo clearly demonstrated their fascination with these presentations. This type of response by visitors is what should be strived for according to Serrell (1997). Because zoo-goers are free to select their experiences, zoo educators need to present their environmental messages in the most compelling manner possible to increase message effectiveness.

Delivering Cognitive Messages

Despite the observed differences in viewing time and information-seeking between those who viewed the clouded leopard in the standard exhibit and the interpretive presentation, survey respondents in the two treatment groups showed no significant difference in their interest in the animal. In fact, both groups demonstrated a high level of interest in the clouded leopard. This is likely due to the fact that wild cats are among the most popular animals at zoos. The majority of respondents to the survey stated that they were interested in cats. They “like all kinds of cats” and thought the clouded leopard was “a beautiful animal” with “elegant coloring.” Despite the visitors’ self-evaluations of their interest levels, the data clearly show they were more engaged by the clouded leopard in the interpretive setting. The increased viewing time and interest experienced there has clear implications for the delivery of educational messages about clouded leopards.

Most fundamentally, the longer a visitor remains at an exhibit, the more opportunity there is for learning to take place. But for learning to occur, in most cases the zoo visitor must actively seek information. Many studies, including those by Churchman (1985) and Johnston (1998), have documented the low incidence of sign-reading demonstrated by zoo visitors. This study was no exception. Only one in four visitors to the exhibit read the clouded leopard graphics for the requisite five seconds. Therefore, the vast majority of visitors to the clouded leopard exhibit did not avail themselves of learning opportunities the zoo provided.

In contrast, a much larger proportion of visitors to the interpretive presentation were likely to take away some knowledge as a direct result of the experience. Forty-five percent of the visitors viewing the clouded leopard in this manner demonstrated active seeking of information by asking a question such as “What does it eat?” or “Are they endangered?” In fact, some visitors asked up to seven questions. The ability of the interpreter to respond to specific inquiries provided a personalized experience for the visitor. Even those visitors who did not ask questions benefited by hearing the answers provided to those who did ask. In addition to answering questions, the handler routinely provided large amounts of information in her presentations encompassing the cat’s natural history, behavior, training, and conservation issues.

Another indicator of the increased cognitive learning by visitors to the interpretive presentation is apparent when evaluating the responses to the survey prompt: *Before I saw this animal, I never realized that...* Visitors to the traditional exhibit overwhelmingly (29 of 32) replied with observations readily obtained by being at the exhibit and seeing the animal. In contrast, visitors to the interpretive presentation provided mostly cognitive responses (25 of 36) gleaned from facts learned in the course of the presentation.

Delivering Affective Messages

The survey data showed a great disparity between treatment groups in their responses to survey questions about the clouded leopard’s level of care and quality of life. Survey respondents who viewed the interpretive presentation rated both the clouded leopard’s level of care and quality of life significantly higher than those who viewed the cat on exhibit (Table 1). These visitors also made far fewer negative comments about captivity issues than visitors to the traditional exhibit in response to open-ended questions or in their ratings rationale statements.

These data indicate that visitors felt much more positive about the clouded leopard’s quality of life when they observed it being worked with by a handler. The fact that the cat has a relationship with a handler and receives personal care appears to be very desirable to zoo visitors concerned about the animals’ well-being. Survey comments indicated that a handled cat is perceived to be stimulated, have its needs met, and be valued emotionally by

zoo staff. Conversely, when the clouded leopard is viewed on exhibit, many people perceive it to be bored, lacking in exercise, and a victim of a captive existence.

In addition to exploring visitors' feelings about the individual clouded leopard used in this study, the researcher also examined the visitors' feelings of empathy for wildlife conservation in general. Specifically, did these feelings differ between visitors who viewed the cat in an interpretive presentation versus in a traditional exhibit? For this study, there appeared to be no difference between the two groups. Both the visitors to the exhibit and to the interpretive presentation demonstrated high levels of concern for wildlife conservation and would support conservation measures for clouded leopards. Furthermore, both groups believe present efforts towards wildlife conservation are inadequate.

Implications for Educational Message Delivery

This study indicates that there are clear benefits to the use of interpretive animal presentations in delivering both cognitive and affective messages. By presenting animals in this context, zoo educators can greatly increase the time that visitors remain actively engaged in the learning experience. By presenting animals out of enclosures with handlers providing information, zoos can personalize the learning experience and provide visitors with the active, easily viewable animals that they seek.

In addition to increasing opportunities for learning, the use of interpretive animals also delivers a supplemental message that the zoo provides a high level of care and augments the quality of life of its animals. This message is dependent, however, on the manner in which the animals are handled and interpreted. Sensitivity to the animals' safety and comfort are paramount, as zoo visitors will quickly change their opinion about an animal that appears stressed in any way. For this reason, it is critical that presenters receive extensive training in handling and interpretation, and that strict animal-handling protocols are in place. Only animals that have been raised in an interpretive setting and have the temperament for being handled in crowded situations should be used in this manner.

At a time when wildlife faces a myriad of mounting pressures, zoological educators are in a good position to instill in zoo visitors feelings of stewardship and empathy toward the creatures that share our world. One tool for delivering stewardship messages is the use of live, handled animals for teaching. This study has demonstrated that the use of these animals in interpretive settings can greatly increase the interest zoo visitors have for learning and help deliver both cognitive and affective educational messages.

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**Toward a Theory of
Quality in Cruise-Based
Interpretive Guiding**

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Abstract

A case study of cruise-based nature tourists in Alaska and the Galapagos Islands is used to examine the theoretical underpinnings of "quality" in nature-based interpretive guiding. Fixed-response and open-ended questionnaire items were used to examine the prominence of eight dimensions of quality drawn from research on effective interpretation. Results indicate that passengers define quality guides as those who are passionate, insightful, enjoyable, relevant, and easy-to-follow. Corroborating these dimensions of quality were passengers' open-ended statements about the attributes they associate with an ideal interpretive guide. The findings seem consistent with prior research on interpretation and are grounded in behavioral theory.

Key words

guiding, interpretation, cruise tourism, nature tourism, ecotourism

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Toward a Theory of Quality in Cruise-Based Nature Interpretation

Introduction and Case Study Context

Understanding how tourists define and perceive quality in their own experiences is central to being able to provide satisfying services and products. Yet, tourist experiences vary widely, and the means and mechanisms that lead to visitor satisfaction may be as varied as the experiences themselves. In the case of guided tours, there is evidence that the guide is a key ingredient in visitor satisfaction, and plays an important role as mediator between the visitor, the host population, and the cultural and natural environment (Geva & Goldman, 1991; Arnould & Price, 1993). Central to these functions is the guide's interpretive role.

Many visitors, however, travel without ever joining a guided tour, or they purchase short (full-day, half-day or less) tour excursions as part of a longer holiday. In such cases, the influence of the tour guide may be minimal or non-existent in the visitor's total experience. In extended (multiple-day) guided tours, in which tourists depend to a higher degree on their guides, the potential influence of the guide on visitor satisfaction is greater. But even here there is "free time" for visitors to be away from the tour guide and the group to explore, dine, shop, engage in other recreational pastimes, or to do nothing.

A common characteristic of cruise-based nature tourism is that it is often highly guide-dependent, affording passengers limited opportunities to be free from the guided experience. Thus, interpretive guides on cruise-based nature tours carry much of the burden of meeting passengers' expectations of quality. Consequently, the quality of their interpretation may exert significant influence on visitor enjoyment, as well as be a major factor in an unsatisfactory experience.

What constitutes "quality" in interpretation has been the subject of considerable philosophical discussion (e.g., Tilden, 1957; Lewis, 1980; Beck & Cable, 1998; Ham, 1992) and attempts have been made to ground principles of effective interpretive communication in behavioral theory and research (e.g., Ham, 1983, 1992; Hammitt, 1981, 1984; Moscardo, 1999). According to Tilden (1957), a centerpiece of interpretation is its focus on provoking tourists to attach new and profound meanings to a place or feature. In his view, this occurs when an interpreter provides new insights that are important and relevant to a visitor's experience and personality. Following Tilden, Ham (1992) drew on cognitive and social psychology to outline four characteristics that are inherent in successful interpretation—being enjoyable, relevant, organized and thematic—that have been widely adopted by researchers (e.g., Armstrong & Weiler, 2002) and interpretive trainers, including by the National Association for Interpretation in its institutional training for interpreters and tour guides. The present study provided an opportunity to validate some of these notions and to determine whether they, or other characteristics of interpretation, fit with cruise passengers' construct of quality in interpretive guiding.

A case study approach (Hartley, 1994; Yin, 1994) was employed to examine and compare nature-based guiding on two cruise-based tours, one in Alaska in June 2000 (operated by CruiseWest), and the other in the Galapagos Islands in September 2000 (operated by Lindblad Expeditions). Both were week-long tours offered by companies who are leaders in the nature-based tourism industry, and who offer upmarket cruise-based tours guided both

by on-board expedition leaders and shore-based guides. Both use relatively small ships (capacity of 80 to 100 passengers) to destinations known to be popular with tourists who want to view wildlife close-up and to have opportunities to interact with nature. In addition to Alaska and the Galapagos Islands, CruiseWest and Lindblad Expeditions collectively offer cruises to other destinations in North America and Latin America, as well as the Caribbean, Asia, the Pacific, and Antarctica. Their clientele are largely retired or semi-retired professionals who prefer small vessels that maximize opportunities for easy access to nature and close encounters with wildlife that larger vessels cannot readily offer. As evidenced by the marketing materials they receive from the two companies, a deep interest in nature and culture prevails in the types of cruise experiences these passengers seek.

Defining “Quality” in Cruise-based Interpretive Guiding

Conceptually, the role of a nature-based tour guide on board a cruise ship would seem no different than that of a nature-based tour guide on land. However, this has not been tested empirically, as there has been limited research on the roles and attributes of tour guides in general, and on the elements of effective nature tour guiding in particular.

The tour guide’s “role” has been the subject of scholarly discussion and analysis for just over fifteen years. Arguably, the main conceptual framework used to dissect and analyze the various roles and functions of the tour guide has been Cohen’s (1985) model. This model acknowledges both the traditional “pathfinding” role and the more recent “mentoring” role of all tour guides, and uses these to produce a model of tour guide roles. For our purposes, the main value of this model is Cohen’s recognition that guides have accountabilities both within the group (i.e., to facilitate tourists’ learning and enjoyment, and to nurture and manage interaction between tourists) and outside the group (i.e., to facilitate and mediate interaction between tourists and host communities). Extending Cohen’s general model to nature-based tourism, Weiler & Davis (1993) added visitors’ interaction with the natural environment as a third dimension. However, there has been almost no published research, with the exception of Haig (1997), testing or applying these frameworks.

Furthermore, limited research has been conducted from the visitor’s perspective as to what makes a quality guide or a quality guided experience (Geva & Goldman 1991; Hughes 1991; Forestry Tasmania, 1994). Even less research has been conducted on tour guides conducting cruise-based nature tours, an exception being a study conducted two decades ago by Koth, Field, and Clark (1981) which examined the strategic role of interpretation in different phases of the cruise experience. Although discussions of interpretation in cruise experiences occasionally appear in the literature (see, for example, Ham, 1992; Case, 1992; Ham, 1985), virtually no systematic attempts have been made to understand cruise-based guiding. Hence, this research began as a pre-theoretical attempt to explore the tourist’s definition of “quality” in cruise-based interpretive guiding.

The primary aim of this paper is to examine the visitor’s perspective on the qualities essential in a good interpretive guide, and in particular the guides who lead shore excursions offered as part of nature-based cruises. A second aim is to examine the visitors’ perspectives on the guides’ performance—i.e., the quality of the actual interpretive guiding.

Due to the inductive and exploratory nature of the case study approach, the data collection for the first aim was intentionally atheoretical, allowing visitors to express in their own words their perceptions of “the essential qualities of a ‘great’ guide”. The data collection for the second aim was informed by the literature and previous research on effective interpretation (Tilden, 1957; Lewis, 1980; Weiler & Ham, 2001; Beck & Cable, 1998;

Ham, 1992; Ham, 1983; Ham & Shew, 1979; Moscardo, 1999) and on attributes that have been found to be important elements of quality nature guiding (Weiler, 1999; Weiler & Ham, 2001). Drawing on this background, variables were selected against which cruise passengers would be asked to assess individual guides' performance.

Research Methods

Only a handful of cruise-based tour operators specialize in the nature-based or "ecotourism" market, for at least two reasons. First are high start-up costs and requirements that limit entry into this market. Second are limited business opportunities in terms of suitable destinations, outstanding product and target markets who can afford both the time and money required for this type of experience.

Given the limited number of operators, combined with the practical constraints in conducting this research, the choice of companies for the case study was limited. The two companies selected met a number of criteria. The first criterion was that they be businesses that are nature-based in philosophy, orientation, and operation. Both companies included in the case study offer a product that is largely nature-focused, including destinations known to offer outstanding natural features such as wildlife, unusual geological features, and beautiful scenery. Included in this criterion was the use of smaller vessels necessary for navigating tight or shallow stretches, itineraries that focus on getting close to nature and wildlife, and a guided experience that is focused on a quality nature-based experience for a relatively small number of passengers. A high staff-passenger ratio—with at least some staff that were recruited and trained specifically as interpretive guides and naturalists—was considered essential.

The second criterion was that they be businesses that espouse and practice sustainable tourism concerned with conservation of both the natural and cultural environment, both immediately and long-term. A target market that was motivated by these attributes and willing to pay for a high-quality experience was part of this criterion.

A third criterion was our need to gain access to the tours, the guides, and the passengers in order to collect data in a timely and cost-effective manner. These practical constraints had to be balanced by our desire to examine two tour products that were different enough to permit meaningful comparison (i.e., more than one company and location) and yet similar enough in tour length, product, price, and clientele to allow aggregate analyses of the data.

Based on these criteria, we were successful in securing access to two seven-day tours, one in Alaska's Inside Passage offered by CruiseWest (formerly Alaska Sightseeing, Inc.), based in Seattle, and the other in the Galapagos Islands of Ecuador offered by Lindblad Expeditions (formerly Special Expeditions), based in New York. As previously mentioned, the two cruises were identical in length and similar in product (both cruises offered passengers close contact with nature and close-up viewing of unusual wildlife). In addition, the size of the two ships and passenger capacity was comparable (both CruiseWest's Spirit of Alaska and Lindblad Expeditions' Polaris sleep about 80 passengers).

While the use of the case-study approach often precludes generalization of findings, the results of this study may indeed be relevant to the small number of cruise operators interested or involved in the specialist nature-tour market. Similarly, while some argue that the case-study approach is largely limited to descriptive analysis, others claim that the in-depth nature of case studies and their emphasis on situationally-embedded processes justifies some level of causal inference (Lee, Mitchell & Sablynski, 1999). While the central focus of this study is not to propose causal links between guide performance and any set of practical outcomes, it is worth mentioning that we used multiple data sources and methods in order to strengthen the reliabili-

ty and validity of the findings reported. In particular, both fixed-item and free-response questions were used to explore passengers' concepts of quality in guided interpretive activities.

Data Sources and Data Collection Methods

The data sources and methods used in the study included secondary data (guide books, websites, tour brochures), participant-observation of both guides and passengers on the two week-long tours, systematic observation of guides onboard the two vessels and during shore excursions, and passenger self-completed questionnaires. The remainder of this paper focuses on details of the methods and selected findings from the passenger questionnaires.

All adult passengers aboard both vessels were given a four-page questionnaire to complete on the final evening of their seven-day tour. They were, however, informed at the beginning of the cruise that they would be asked to complete a survey about their experiences, and that the survey focused on the qualities of the guides and the guided tours offered as part of the cruise. A census of both populations of passengers was attempted (Alaska N=68 and Galapagos N= 26).

The questionnaire was pretested with passengers on each cruise to ensure that questions were understandable and to uncover any problems with wording or question sequencing that might affect responses or cause cross-question interactivity. These passengers' responses were not included in the data sets. Among other questions asked, the questionnaires requested passengers aboard both cruises to:

1. provide socio-demographic details
2. in free-response format, list three qualities essential in a "great" shore excursion guide
3. circle words or phrases from a list that they felt described their guide's performance on each of five shore excursions
4. in free-response format, comment on anything that "stood out" in their minds about their guides

With regard to the procedure in category 3, our intent was not to measure degree of passengers' feelings about their guides' performance, but rather to determine what types of defining qualities or evaluative criteria they associated with the guides' performance. As such, passengers' were presented a 16-item list of positive and negative qualities of interpretation, based on the dichotomous extremes of eight widely agreed upon dimensions drawn from the literatures on effective interpretation and guiding. The eight dichotomous dimensions were: "entertaining" versus "boring;" "presented things in a logical order" versus "disjointed;" "too much information" versus "too little information;" "seemed to really care" versus "didn't seem to really care;" "too technical" versus "too simplistic;" "ended too soon" versus "kept us too long;" "made things relevant" versus "didn't make things relevant;" and "gave me new insights" versus "gave me no new insights." Respondents were asked to circle all they felt described their guide's performance. Our intent was to be able to compare the results of this procedure with the passengers' free-response descriptors of a "great interpretive guide." To avoid patterned responses, the 16 items were presented in jumbled order. This also allowed respondents to circle both extremes of a single dimension (e.g. "gave too much information" and "gave too little information") or neither of them, and eliminated "forced choice" responses. Out of 16 descriptive phrases, five were favorable (desirable) qualities and 11 were undesirable (unfavorable).

Research Limitations

The use of a case-study approach was appropriate for this research but also brings some lim-

Table 1: Socio-demographic Profile of Respondents on CruiseWest (Alaska) and Lindblad (Galapagos Islands) Cruises

Variable	Percent (%) (Alaska)	Percent (%) (Galapagos)	Variable	Percent (%) (Alaska)	Percent (%) (Galapagos)
Gender			Country of Origin		
Male	47	52	USA/Canada	95	95
Female	53	48	Australia/NZ	5	0
			Other	0	5
Age			Number of previous cruise trips taken		
15-24	2	14	0	38	28
25-34	7	10	1	25	5
35-44	13	29	2+	37	67
45-54	15	14			
55-64	33	10			
65-74	17	19			
75-84	13	5			
Education level			Travel with		
Some high school	4	5	Spouse/partner	67	45
High school	11	5	Family/children	24	40
Some college/univ.	24	5	Parent	4	15
Bachelors degree	18	14	Friend/other	5	0
Some post/grad	15	14			
Higher degree	28	57			
Employment			Occupation		
employed	38	65	Professional/mgt	52	68
retired	51	20	Clerical/sales	22	11
unemployed	5	0	Trade/laborer	20	5
self-employ/other	6	15	Homemaker/student	6	16

itations. By definition, a case study is best suited to insight-producing research aimed at revealing potential relationships among variables. It is usually not, however, considered an appropriate research design for testing those relationships. The results from this case study constitute the beginning of a theory-building process and should not be considered a test of the relationships proposed or a validation of the constructs discussed in this paper. We leave it to future research to examine whether the theory holds up in other contexts and in analyses utilizing deductive research designs.

Respondents in this study were never asked in an open-ended question what attributes they associated with “poor” guiding, only what qualities they considered essential in a “great” guide. The assumption that poor guiding is simply the absence of the qualities associated with great guiding requires further testing.

Respondents on both vessels were treated as separate research populations for which a census in each case was attempted. While the profiles of passengers on the two tours were, according to company spokespersons, “typical” of their cruise clientele, results may not be generalized to other tours and other companies who provide this kind of experience. Moreover, since a census was attempted, the application of inferential statistics to the data would be inappropriate since population parameters were measured directly.

Another potential limitation is the comparatively small number of passengers on the Galapagos tour (the ship was not filled to capacity), which may have influenced the results. However, we questioned the tour operator and the guides about whether this was an atypical tour and were assured that, in terms of the guided experience, it was typical. Strictly speaking, the data represent a near census of the passengers on the particular cruise we studied, and the theoretical reasoning offered in this paper is, in part, based on the responses of these passengers. Nevertheless, whether these data are representative of other Lindblad cruises in the Galapagos Islands cannot be ascertained.

Finally, data collection from passengers was limited mainly to post-trip, self-completed questionnaires. Although the researchers were present throughout both tours and able to observe the guides and the passengers and make their own assessments of the quality of the tours and the guiding, they purposefully avoided seeking feedback from visitors until the end of the tour. This reduced the introduction of bias from the researchers, but introduced the possibility of cross-question influence between the measurement of some of the constructs, notably passengers’ perceptions of the “essential qualities of a guide” and their evaluation of “the guide’s performance” both measured in the post-trip questionnaire. As noted later, pre-testing of the instrument helped allay concerns about cross-question interactivity, but the prospect that such bias was introduced in some cases cannot be completely dismissed.

Results and Discussion

In Alaska, usable questionnaires were returned by 55 of the 68 adult passengers onboard the Spirit of Alaska (CruiseWest), and in Galapagos by 21 of the 26 adult passengers on-board the Polaris (Lindblad), representing a response rate of 81 percent for both. These response rates suggests that any bias due to non-response is likely to have minimal impact on the overall results. Results reported from the two data sets, both separately and in aggregate form, are considered representative of the two cases.

Profile of Respondents

Passengers on the two tours were both similar and different (see Table 1). Variables for which differences between the two profiles were not statistically significant ($c2 p > .05$)

**Table 2: Qualities Respondents Consider Essential in a
“Great” Shore Excursion Guide**

Examples of actual words used by respondent:	Categorized as:
Knowledgeable Informed, informative content Precise and accurate information Important information	Knowledgeable
Enjoyable style Good stories Uses questions and answers Humorous, fun Varied/interesting delivery Good/excellent communication skills Good speaking/microphone voice Ability to present Articulate Speaks slowly/loudly/clearly	Enjoyable communication
Enthusiastic Enthusiasm Passion Caring Love	Enthusiastic
Personable, personality Friendly, pleasant manner Good rapport with customers Courteous Approachable	Personable
Experienced Local/personal experience From the area	Local experience
Prompt, starts on time Allows enough time	Time management
Adaptable Versatility Empathy	Adaptable
Group management Effective leadership Inclusive of all persons	Group management

Table 3: Essential Qualities of a “Great” Shore Excursion Guide

Qualities	Percentage of Alaska Cases ¹	Percentage of Galapagos Cases ²
Knowledgeable	88	76
Personable	56	48
Enjoyable communication	46	52
Enthusiastic	28	38
Local experience	14	14
Time management	14	14
Group management	12	10
Adaptable	8	10

¹ Percentage of Alaska respondents who wrote this attribute as one of their three “essential qualities of a *great* shore guide” (n=50).
² Percentage of Galapagos respondents who wrote this attribute as one of their three “essential qualities of a *great* shore guide” (n=21).

Percentages do not total to 100 since passengers could give multiple responses.

include gender (a fairly even split) and country of origin (overwhelmingly U.S.). However, the passenger profiles did differ significantly ($c2 p < .05$) with respect to age, education level, employment status, occupation, previous cruising experience, and travel party profile. The Alaska passengers were, on the whole, older (63 percent were 55 years and over) and less experienced cruisers, with lower levels of education, and with more (42 percent) in the clerical/sales and trade/laborer occupational categories than the Galapagos passengers (16 percent in these occupational categories). They were more likely to be retired (51 percent compared to 20 percent of the Galapagos passengers), and less likely to be traveling with children (24 percent compared to 40 percent of the Galapagos passengers).

Essential Qualities of a Shore Excursion Guide

Passengers were asked to answer the following question in free-response format: “List 3 qualities you consider essential in a great shore excursion guide” (emphasis as contained in the questionnaire). Responses to this question were obtained from 50 Alaska passengers and 21 Galapagos passengers. The three qualities mentioned by each of the respondents were subjected to content analysis (see Tables 2 and 3). In this procedure, one of the researchers

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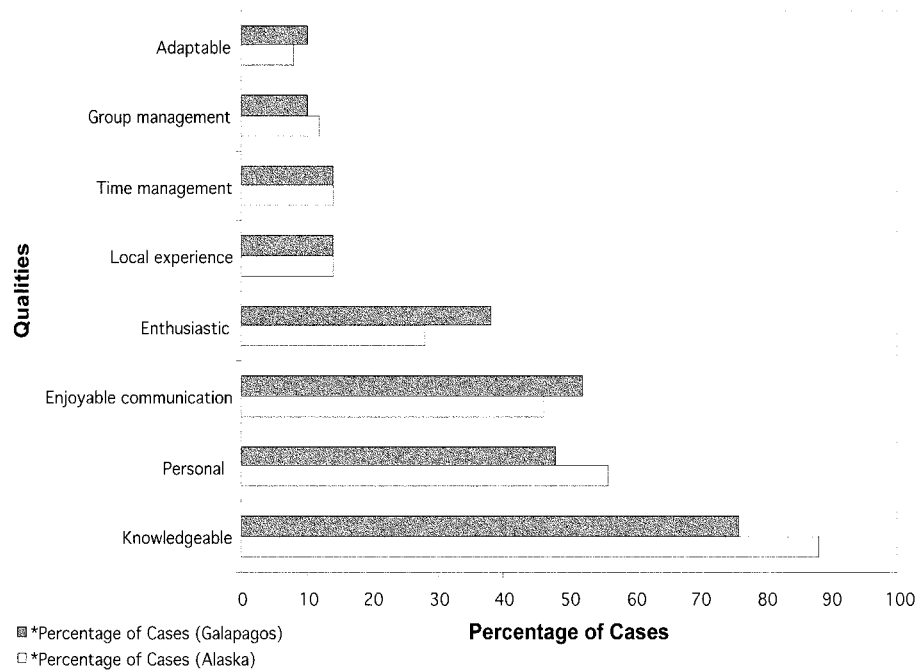


Figure 1: Essential Qualities of a Shore Excursion Guide (Alaska vs. Galapagos)

organized the responses into semantic categories labeled according to the assumed meanings of the words used by respondents (e.g., knowledgeable, friendly, etc.). To ensure reliability of the meaning categories shown in Table 2, another researcher independently reassigned the pool of passenger statements using the original categories. Agreement between the two researchers on how to categorize each statement would indicate reliability. Following this procedure, words on which there is disagreement are judged as unreliable and eliminated from the analysis. In this case, however, agreement was achieved on the categorization of all the qualities listed by passengers on both vessels.

As shown in Table 2, respondents collectively associated eight qualities with the generalized concept of a "great shore excursion guide." These included being knowledgeable, providing enjoyable communication (both in style and content), being enthusiastic, being personable, having local experience, managing time well, being adaptable, and having effective group management skills.

Results of the content analysis (Table 3) show considerable consistency between the two cruises, especially considering the demographic differences between the two sets of passengers and the fact that the data represent free-response statements. Notably, for both sets of passengers, "knowledge" was the most frequently mentioned essential quality of a "great" shore excursion guide, being cited by 88 percent of the Alaska passengers and 76 percent of the Galapagos passengers. In second or third place for both groups were being "personable" (mentioned by 56 percent of Alaska passengers and 48 percent of Galapagos passengers)

and “enjoyable communication” (mentioned by 46 percent of Alaska passengers and 52 percent of Galapagos passengers). The other most frequently mentioned attribute by both groups was being “enthusiastic” (28 and 38 percent, respectively). Thus, although variations in relative frequencies occur between the two cruises (Figure 1), the order of the qualities listed by passengers on both cruises is nearly identical. The remaining qualities, while mentioned less frequently, illustrate passengers’ interest in having guides from the local area, guides who can manage time and groups well, and guides who are able to adapt to visitors’ interests and unexpected opportunities.

Since these results are based on passengers’ free-response statements, their relative usage should not be considered a ranking from “important to unimportant.” On the contrary, all of them were important enough to be listed among the top three characteristics these passengers associate with a “great guide.” From a theoretical perspective, we might consider the top four attributes (knowledgeable, personable, enjoyable communication, and enthusiastic) to be the most prominent of the eight in terms of the passengers’ perspective on quality guiding, but the other four characteristics cited by passengers should not be ignored.

Performance of excursion guides

In addition to stating what they felt were ideal qualities in a guide, respondents were asked to assess the performance of the guides that led their shore excursions. As described earlier, for each excursion, respondents could circle between zero and 16 phrases that represented eight dimensions (or attributes) of the guided tour experience. Five phrases were favorable descriptors and 11 were unfavorable. The purpose of this analysis was to see if patterns would emerge in the favorable and unfavorable descriptors respondents attributed to their guides. Our reasoning was that the most commonly mentioned attributes would provide some indication of what visitors liked most and least about their guides’ performance, which in turn would reflect something of their idea of “quality” in the tours. As previously explained, we were also interested to see how well the favorable descriptors selected from this literature-based list corresponded with passengers’ free-response descriptions of quality interpretive guiding. Based on pre-testing, we were satisfied that interactivity between the two questions was not a serious concern. The free-response question was asked at the beginning of the questionnaire, whereas the circling of descriptors occurred near the end of the questionnaire. Pre-test respondents were specifically asked if their free responses influenced their selection of descriptors for each shore excursion. In all cases, the answer was that it did not influence their choice of descriptors.

Passengers’ responses corresponding to each of the descriptors were tallied, both by cruise (Alaska versus Galapagos) and in the aggregate (Alaska + Galapagos). Although some variation appeared in the cross-cruise comparison, roughly the same relative ordering of descriptors results in each case. Table 4 shows the 16 descriptors in descending order based on how frequently they were mentioned by respondents. From these data, clear patterns emerge from what passengers said they liked and disliked about their guides. First, although all descriptors (both positive and negative) were utilized by passengers to describe their guides’ performance, the five favorable descriptors were used from five to eight times more frequently than the most commonly cited unfavorable descriptors. This indicates that overall the passengers on both vessels were pleased with their guides’ performance. This conclusion is corroborated by supplemental evaluative data collected during the course of this study. In separate questions following respondents’ assessment of each tour, they were asked to indicate whether the guide “made me glad I took this excursion,” or “made me wish I

hadn't taken this excursion," or "not sure." In addition, they were asked to indicate whether they would "recommend the excursion to others," "not recommend the excursion to others," or "not sure." Respondents on both cruises overwhelmingly reported that they "were glad" they took each excursion and that they "would recommend" the excursion to others. Thus it is important to remember that the results shown in Table 4 reflect respondents' assessments of what they perceive as "high-quality" guided tours. It is not surprising, therefore, that respondents' most frequently cited descriptors were favorable.

From a theoretical perspective, it may be most useful to view the ordering of descriptor usage separately within the favorable and unfavorable categories (as indicated by the horizontal separator in Table 4). Viewed this way, the data within each category (favorable and unfavorable) reflect what passengers attended to in terms of "quality adders" and "quality detractors." When passengers liked what the guide did, they used all five of the favorable descriptors. In descending order of passengers' usage, these descriptors of high-quality guide performance are (1) passionate, (2) entertaining, (3) providing new insights, (4) provided relevant information, and (5) presented things in a logical order.

Notably, the descriptors of guide quality in Table 4 are generally consistent with the attributes passengers earlier associated with the generalized concept of a "great guide" (see Table 3). The guide's knowledge is clearly important in both sets of data, but in different ways. If we accept that the passengers' emphasis on the guide's "knowledge" is a perception (rather than an objective assessment of real or absolute knowledge), then it seems logical to view Table 4 descriptors such as "providing new insights," "relevant information" and "presented in a logical order" to be the observable tangible evidence passengers would use in subjectively judging the "knowledge" of their guides. Thus, when tourists feel that they have gained "new insights" and that the information they received via their guide was "relevant" to what they know and care about, they are likely to judge the guide as "knowledgeable," even when guides with more actual knowledge but less guiding skill would be perceived by tourists as less knowledgeable. Thus the operant variable is not actual, objectively measured "knowledge," but rather "inferred knowledge" as perceived by the tourist based on the guide's communication approach, style, and content. Presenting information that is relevant, insightful, and easy-to-follow would ostensibly enhance the guide's inferred knowledge.

Likewise, the descriptor of "passionate" in Table 4 corresponds with the generalized ideal guide's "enthusiasm" (Table 3), and "entertaining" (Table 4) seems to comprise not only "enjoyable communication" in Table 3, but perhaps "personable" as well. "Enjoyment," while an intuitive concept in tourism and recreation, is also a vague one because of the sheer number of dimensions it might tap. Logically, myriad factors could be involved in making a guide "enjoyable," including virtually all of the favorable descriptors shown in Table 4. Yet, when the right elements are in place, the generalized effect is a positive evaluation of the guide's communication by tourists as "enjoyable." The diversity in the kinds of attributes respondents associated with "enjoyable communication" (see Table 2) are perhaps indicative of the potential complexity of this construct.

The similarity of passengers' generalized concept of an ideal guide with the criteria they used in evaluating actual shore excursion guides is noteworthy for theoretical as well as methodological reasons. In addition to using common criteria to describe the "ideal" guide, these nature-based cruise passengers appear to have applied more or less the same criteria in assessing the performance of their shore excursion guides. Thus, one conclusion may be that they not only define quality according to these general criteria, but they find it easy to

Table 4: Passengers' Evaluation of Shore Guides' Performance

Guide Descriptors	No. Times Mentioned (Alaska + Galapagos)	Percentage of Responses (n=297)	
Passionate	227	^a 76.4	Favorable
Entertaining	223	75.1	
Provided new insights	207	69.7	
Relevant information	175	58.9	
Presented in logical order	134	45.1	
Ended the tour too soon	29	9.8	Unfavorable
Disjointed	27	9.1	
Too little information	24	8.1	
No new insights	21	7.1	
Too simplistic	21	7.1	
Lacked passion	19	6.4	
Kept us too long	19	6.4	
Information not relevant	18	6.1	
Boring	14	4.7	
Too much information	8	2.7	
Too technical	8	2.7	

^a Percentages do not total to 100 since passengers could circle multiple phrases.

apply the same criteria in judging the quality of a guide and a guided tour. This would be important to know when researchers develop measurement instruments for assessing guiding quality.

The theoretical significance of these findings may lie in the fact that they reveal not only what the passengers thought of each of their guides (in the case of the circled descriptors), but they also tell us what the passengers paid attention to in terms of guide performance (in the case of the free-response data). Combined, a conclusion from these data is that passengers define a "high-quality" guide as a guide who is passionate, one who presents information in an enjoyable way, who provides new insights into local features and phenomena, who makes information relevant to the passengers, and who presents that information in a way that is easy for them to follow.

Conversely, when passengers disliked what the guide did, they used nine of the 11 unfavorable descriptors. In descending order of passengers' usage, these descriptors of low-quality guide performance are (1) ended the tour too soon (a criticism that could also be expected of a high-quality tour), (2) disjointed, (3) too little information, (4) no new insights, (5) too simplistic, (6) lacked passion, (7) kept us too long, (8) information not relevant, and (9) boring. Following the same logic, these results may indicate that low-quality guiding, from the passenger's perspective, results when the guide ends the tour too soon, is

Table 5: Frequency of Passengers' Use of Eight Dimensions of Quality

Guide Descriptors	Percentage of Responses (n=297)^a
Guide's passion (displayed or lacked)	82.8
Enjoyability of guide (entertaining or boring)	79.8
New insights (guide provided or did not provide)	76.8
Relevance of information (relevant or not relevant)	65.0
Organization of information (logical or disjointed)	54.2
Length of tour (ended the tour too soon or kept group too long)	16.2
Amount of information (too much or too little)	10.8
Level of information (too simplistic or too technical)	9.8

^a Percentages do not total to 100 since passengers could circle multiple phrases.

disjointed and difficult to follow, presents too little information, provides little new insight, is too simplistic, lacks passion (caring and enthusiasm about his/her subject), keeps the group too long, and fails to make the information he or she presents relevant to the passengers. However, since respondents were never asked in an open-ended question what attributes they associated with "poor" interpretive guiding, an assumption is made that low-quality guiding is characterized by the absence of qualities associated with high-quality guiding. Testing this assumption is an area for future research.

Since passengers were presented with the polar opposites of eight different criteria, mentioning either of the extremes meant that they were using that criterion to assess the guide. In other words, citing any of the descriptors, whether good or bad, indicated that that dimension was important to the passenger in assessing the guide's performance. Therefore, to more accurately assess the importance of each of the eight criteria in the passengers' assessment of quality, the percentages reported in Table 4 were collapsed for each of the eight dimensions. These results (Table 5) portray a more precise picture of the prominence of each of the eight dimensions in the passengers' perception of quality in shore excursions. Notably, the order of importance of the previously cited favorable descriptors does not change following the collapse of dimensions. But the relative importance of each dimension is clearer. A two-level hierarchy of the dimensions emerges from Table 5, as follows (in order of usage by respondents): Tier 1 includes the dimensions of passion, enjoyment, new insights, relevance, and organization (54-83 percent of responses); and Tier 2 includes tour length, quantity of information, and level of information (10-16 percent of responses).

Although intuitively appealing, this hierarchy contains at least one unforeseen anomaly produced by the dimensions in Tier 2. Specifically, the bipolar extremes of tour length, quantity of information, and level of information did not contain a favorable option. Respectively, passengers were forced to choose between “ended too soon” and “kept us too long (tour length), “too much information” and “too little information” (quantity of information), and “too simplistic” and “too technical” (level of information). Although it is impossible to say what, if any, effect this procedure might have had on the relative frequencies reported in Tables 4 and 5, readers are cautioned to take it into account in interpreting these results. Notwithstanding such an effect, however, the results reported here seem a useful starting point for constructing a theory of quality interpretive guiding.

Collectively, these findings corroborate notions about effective interpretation and ecotour guiding that have been discussed in detail elsewhere (e.g., Tilden, 1957; Lewis, 1980; Beck & Cable, 1998; Ham & Shew, 1979; Ham, 1992; Weiler, 1999; Weiler & Ham, 2001), and appear to match what is known about successful interpretation and other forms of communication targeting non-captive audiences such as cruise passengers. Many authors (e.g., Ham, 1992; Beck & Cable, 1998; Weiler & Ham, 2001; Armstrong & Weiler, 2002; Sweeting, Bruner & Rosenfeld, 1999), have argued that effective interpretation is characterized by four defining qualities that help guides to capture and maintain audience attention. Three of these qualities are being enjoyable, being relevant, and being organized (see Ham, 1992; Weiler & Ham, 2001). Being enjoyable and relevant serve mainly to capture and hold attention by providing rewarding stimuli to visitors, in essence rewarding them psychologically. For example, research on the Elaboration Likelihood Model (Petty & Cacioppo, 1984); levels of processing (Craik & Lockhart, 1972) and on the effects of self-referencing and personally relevant information on attention paying and information processing (Neisser, 1969; Cherry, 1966; Moray, 1959; Rogers, Kuiper & Kirker, 1977), suggests that highly relevant information attracts our attention and is processed more deeply than information low in relevance, simply because we care about it and are motivated to attend to it and think about it.

Being organized serves mainly to reduce the effort required of visitors to follow a guide’s train of thought, in essence lowering the psychological costs of attention paying. As Miller’s (1956) seminal research on organization and memory and Cowan’s (2000) replication have demonstrated, humans are limited in their capacity to keep information sorted out in their minds unless an effective organizational structure is in place. Interpreters who present information in an organized way make it easy for tourists to follow them, making information processing less effortful. Providing positive stimuli while reducing an audience’s workload generally results in the audience paying attention. Results of the present study seem consistent with this explanation. Three of the five most frequently cited descriptors of high-quality guiding were that it was enjoyable, provided relevant information, and that it was easy to follow.

Two of the most frequently cited quality dimensions were the guide’s “passion” and whether the guide provided “new insights” during the course of the shore excursion. Based on these data and widespread agreement in the literature as to their importance, any attempt to explain the theoretical underpinnings of “quality” guiding must try to account for the influence of these two variables. Although the effect of a guide’s passion on tourist experiences has not been the serious subject of empirical inquiry, it has been widely discussed in philosophical essays on interpretation for more than five decades. In his seminal

treatise on interpretation, Tilden (1957) asserted that the interpreter's "passion" was indispensable if visitors were to be moved to care about a place or a thing. Tilden, who devoted an entire chapter to passion, termed it "the priceless ingredient" and summarized it in one word, "love."

Likewise, Lewis (1980), Sharpe (1982), Ham (1992), Beck & Cable (1998) and others have argued that enthusiasm, caring, and passion bring not only energy, but an element of sincerity and credibility to an interpreter's and nature guide's aura. Though difficult to measure, such ephemeral effects seem to be operating in the passengers' assessment of their guides. As in most social research questionnaires, the final question invited respondents to comment freely on anything of interest. In the present study, this question was framed as follows: "Finally, please comment on anything else that stands out in your mind about any of your shore excursion guides." The following quotations from passengers illustrate some of the ways the guide's passion can influence quality in a guided activity. One passenger wrote, "The things I was most impressed with were the knowledge, enthusiasm, and passion the guides had for their work." Another wrote, "I've had guides in several places around the world...[but] no guides had the passion and enthusiasm like all the guides here."

Commenting on the fact that many of the guides were from the local area, another passenger wrote, "The fact that so many of them are from here shows their passion! We were very glad that our children could also meet good role models! Educated, having goals, caring about the environment. They have a concern for the greater good of the world, not just themselves."

And perhaps the most poignant accounting of the ways a guide's passion can influence a passenger's experience came from the respondent who wrote, "Their eyes nearly light up when they talk about the animals. Perhaps it's the magic of Galapagos, but even though they [the guides] see the same things day after day, they have the quality and passion of a small child on Christmas morning—anxiously awaiting what they will find. They certainly made my trip the most memorable I'll ever take. That's not true—I'm coming back one day!"

Though anecdotal, these statements are just examples of repeated passenger references to their guides' enthusiasm and passion. Combined with the data reported in Tables 3 and 5, and five decades of philosophical discussion, these unsolicited testimonies support the notion that a guide's passion needs to be accounted for in a theory of quality interpretive guiding.

Providing "new insights" via interpretation is likewise a notion that has received more rhetorical attention than research attention. Yet providing "new information" and "learning new things" have been reported in prior research as being involved in visitors' enjoyment of interpretive programs and ecotours (Ham & Shew 1979; Weiler, 1999). But learning new things and gaining new information may not be as simple as merely passing technical information on to non-captive audiences such as nature-based cruise passengers. This difference was especially noted by Tilden (1957) who wrote about the importance of revelation in interpretation (revealing to visitors new and important insights about a place or object). According to Tilden, interpretation is more than just fact-giving. It is aimed at moving its audience (in the sense of provocation) to a more profound understanding or appreciation of a place than it would otherwise have, and that, in order to do that, an interpreter must "touch something within the personality or experience of the visitor" (1957:11). Perhaps the most cited of Tilden's principles is that any interpretation that falls short of revelation will be "sterile." To this principle, he added: "Interpretation is the revelation of a larger truth that lies behind any statement of fact...[it] should capitalize on mere curiosity for the

enrichment of the human mind and spirit" (1957:8).

Building on Tilden's philosophical foundation, a number of authors (e.g., Hammitt, 1981; Ham, 1983, 1992; Beck & Cable, 1998; Moscardo, 1999; Weiler & Ham, 2001) have linked the revelation principle to behavioral research and theory. Research by Goldman, Chen & Larsen (2001) and Cameron & Gatewood (2000) has provided evidence that the most profound impacts of interpretation at historic sites are not measured by visitors' remembrance of factual content. Rather, these impacts were inherent in visitors' assertions that, after availing themselves of interpretive services, they "were inspired" or could "see things differently" or more easily empathize and project themselves into the social and physical reality of historic times. Research by Arnould & Price (1993) documented similar reports from participants in guided river-rafting trips who explained how the experience gave them new perspectives on nature, life, and "what really matters." According to this line of reasoning, providing new insights into places and objects may be among an interpreter's most important tasks, and results of this study suggest that passengers may judge quality in guiding partially on the basis of whether their guided experience produces new and profound meanings.

Respondents' open-ended comments again help to illustrate the potential of this effect. Wrote one of the Galapagos passengers who was clearly moved by her experience, "Thank you for helping me develop a new perspective on what is really important in life and in this world."

Also revealing was the comment by a passenger following a guided tour in the native Alaskan village of Metlakatla: "I really enjoyed the experience and have a greater understanding of their culture. This was very special."

What constitutes a "new insight" or revelation is difficult to describe because insights may be passed from guide to tourist in small packages (an astounding fact or inference) or in larger conceptual packages commonly referred to as "themes." Thematic communication has received considerable attention in the interpretation and nature-based tourism literatures (Ham, 1992; Weiler & Ham, 2001; Beck & Cable, 1998; Sweeting et al., 1999; Ham & Krumpel, 1996). The central premise of this approach to interpretation is that the enduring outcome of any interpretive event is the moral or message that recipients take away with them. The stronger (more profound and compelling) the take-home message, the deeper and more enduring the impact interpretation will have on visitors. Thus, the frequent mentioning of "new insights" by passengers makes theoretical sense. High-quality guided tours provide visitors with revelations, new insights about things they hadn't considered before. New insights lead to information processing (i.e., thinking and "elaboration") which may fundamentally impact cognitive structures such as beliefs, attitudes, and potentially behavior (Ham & Krumpel, 1996; Ajzen, 1991; Fishbein & Ajzen, 1975; Petty and Cacioppo, 1984; Petty, McMichael & Brannon; 1992). Theoretically, a cruise passenger who was provoked to thought by a guide's interpretation would be expected to value these new insights when assessing the performance of the guide and the quality of the excursion. As Ham & Krumpel (1996) have argued, themes express beliefs. Beliefs, according to many social psychologists (see for example, Ajzen, 1991; Fishbein & Ajzen, 1975), are the informational building blocks that give rise to attitudes and other cognitive structures, which in turn give rise to behaviors that are consistent with our beliefs. When we are provoked to thought by insights that add new and profound meanings to a place, we may positively evaluate the intellectual "energy" it produces.

Conclusion

We proposed at the outset that guides on cruise-based tours make a significant contribution to visitor enjoyment, and can also potentially be a major factor in an unsatisfactory experience. In the case of a cruise-based nature tour, we speculated that the guide might be the major facilitator of quality in passengers' experiences. While these observations were based largely on published opinion and the findings of limited research, a theoretical explanation of the guide's influence in nature-based cruise experiences is lacking. The purpose of this inductive research was to examine the visitor's perspective of "quality" in cruise-based nature guiding as a preliminary step to theory-building.

Although minor variations between the Alaska and Galapagos passengers were found, the two groups generally agreed on the criteria used to evaluate their guides. These data suggest that the most common distinguishing characteristics of high-quality guides are that they are passionate, insightful, enjoyable, relevant, and easy to follow (i.e., are able to present things in a logical order). Corroborating these five dimensions (Tier 1 in the hierarchy) were passengers' most frequent open-ended statements about the attributes they associate with a "great guide." These included similar criteria (e.g., being knowledgeable, passionate and communicating in an enjoyable way). Thus, it is theorized that cruise passengers' definition of "quality" in guided shore excursions is comprised of these five dimensions, and that guides who possess these qualities, and put them into practice, will be evaluated more positively by passengers than guides who do not do so. Likewise, tours led by guides who put these qualities into their tours will be evaluated as "higher quality" than tours led by other guides.

Results of this inductive case study suggest that visitors do indeed have definitive views on what qualities are important in a guide and in a guided tour. Our continuing analysis will focus on achieving a better understanding of what constitutes "quality" in nature-based tours generally, and how methods both for training and evaluating guides might be responsive to these criteria.

A particular area of interest is the notion of guide dependence. The influence a high-quality guide can potentially have on a tourist's experience may vary with the degree to which tourists are dependent on the guide to facilitate and orchestrate their experience. As described previously, nature-based cruises are relatively high in guide dependence because passengers have only rare opportunities to be away from the guided experience. Although cruises, themselves, may vary in guide dependency, they are collectively more guide-dependent than, say, a half-day city bus tour or a completely self-guided tour in which (by definition) no guide-to-tourist impact can occur. While a full discussion of this idea is beyond the scope of this paper, the importance of the quality indicators identified in this study might vary with the level of guide dependency inherent in a tour. For example, high-quality guiding might be expected to exert a deeper and more positive influence on the experience of tourists on excursions that are highly guide-dependent, whereas low-quality guiding might be expected to have a deeper negative impact on excursions that are highly guide-dependent. Future research needs to address such issues.

There is widespread agreement that guides play a pivotal role not only in the quality of the nature tourist's experience, but also in facilitating the conservation goals of sustainable or so-called "ecotourism." Sven Olof Lindblad, owner of Lindblad Expeditions, proclaimed in a recent fund-raising campaign for the Galapagos Islands that "it will be the passion and insistence of the traveler that will ultimately save the world's special places" (Ham, 2001). Lindblad's prophecy highlights the central role and potentially far-reaching influence that

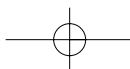
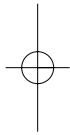
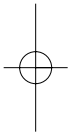
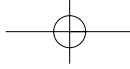
an interpretive guide, as the primary mediator of the visitor's experience, can have. Quality guiding, creatively packaged and powerfully delivered, may perhaps go a long way toward ensuring that "ecotourism" does indeed contribute to saving the world's "special places." If that is possible, then achieving a sharper understanding of what "quality" means to the tourists themselves will be important.

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**Warning Visitors
about the Potential
Dangers of Dingoes
on Fraser Island,
Queensland, Australia**

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Abstract

Situations where potentially dangerous animals are habituated to park visitors occur around the world. Interpretation may reduce the risk to visitors in these areas by forewarning them of the dangers of these animals. When interpretation is used in these situations, the message must be disseminated, understood, and acted on by all visitors if it is to be successful. "Be Dingo-Smart" is an interpretive program that warns visitors about the dangers of dingoes (*Canis lupus dingo*) on Fraser Island (Australia). Our survey of campers to the Island found that different demographic groups of visitors paid attention to, read, or deliberately ignored the different types of media used in the program. When the media was read it increased people's knowledge about dingoes on Fraser Island. This finding suggests that interpreters need to use a range of media targeted to specific groups to overcome the differences in motivations and preferences of visitors when attempting to disseminate essential messages. Additionally when a range of media and messages are used, interpretation needs to be part of an integrated visitor management strategy.

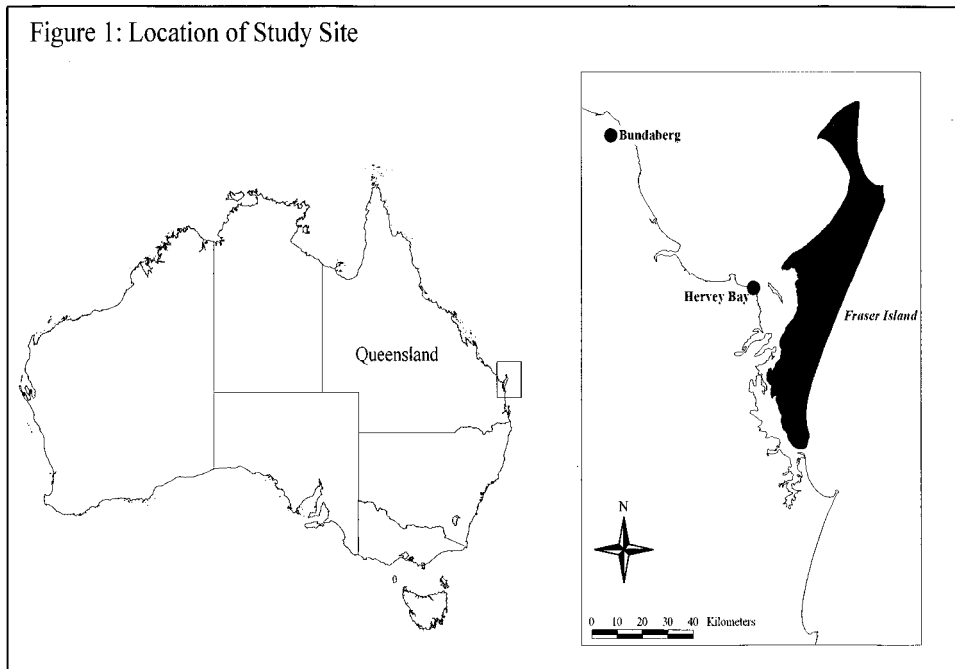
Keywords

dingoes, visitors, interpretation, human-wildlife interactions.

Introduction

Natural areas offer visitors a wide range of opportunities to encounter and interact with wildlife (Orams, 1996). Nature-based tourism that promotes close encounters with wildlife is generally perceived to be both a growing industry and inherently ecologically sustainable (Orams, 1996; Davis, Banks, Birtkles, Valentine & Cuthill, 1997). It has also been suggested that such tourism could be ecologically beneficial if interpretation is used to educate visitors about conservation (Orams, 1996). In conjunction with increased visitation comes the need for effective management strategies that allow visitors to enjoy wildlife while minimizing human influence on the ecosystem.

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In some cases, encouraging visitors to have close encounters with wildlife creates dangerous situations, potentially harmful to either the visitor or the wildlife. For example, coyotes and wolves can develop aggressive tendencies towards visitors when people feed them (Bounds & Shaw, 1994; Orams, 2002). One way to manage such situations is to educate visitors about appropriate behaviors during their visit (Fagen & Fagen, 1994). For example, visitors might be told not to feed the wildlife. To be successful, such interpretation must reach all visitors, be understood by them, and then acted on.

This study assesses the effectiveness of an interpretation program in educating visitors about appropriate behaviors towards dingoes (*Canis lupus dingo*). It focuses on the “Be Dingo-Smart” program by the Queensland National Parks and Wildlife Service (QNPWS) at Fraser Island, Australia. The “Be Dingo-Smart” program is designed by the government agency managing the Island (QNPWS) to reduce inappropriate visitor behavior toward dingoes (e.g., deliberate feeding or careless food storage and disposal) which leads to dingoes harassing and being aggressive to visitors (Moore, Olsson, O’Reilly, & Johnson, 1997).

Background to the Visitor Dingo Issue

Fraser Island is located off the southeast coast of Queensland, approximately 300 kilometers north of Brisbane (Figure 1). Due to isolation from the mainland, the dingoes on Fraser Island possibly have the purest dingo genes in Eastern Australia and, therefore, may be the purest form of Asian wolf in the world (Sinclair, 2001). Images of dingoes are often used by the tourist industry to promote the island, and most visitors value close encounters with wild dingoes (Beckmann, Ballantyne, & Packer, 1996). Over the last two decades Fraser Island has become a popular tourist destination with total visitation increasing from

163,000 in 1986-1987 to 300,000 in 1997-1998 (Olsson pers.com, 2000).

Increased visitor numbers have seen a corresponding rise in interactions between dingoes and visitors (QNPWS, 1999). Tourists may entice dingoes out of the bush to photograph them, deliberately feed them, or unintentionally leave scraps of food around campsites (Sinclair, 2001). As a result, Fraser Island dingoes have now lost their wariness of humans and some have become reliant on visitors for food (QNPWS, 1999). This is particularly apparent in and around high visitor-use areas such as campsites. Here dingoes have learned highly specialized scavenging behaviors, raiding campsites and on occasion responding aggressively to visitors (Moore et al., 1997).

Between 1990-2000, there were over 400 recorded incidents of dingoes being aggressive to visitors, culminating in a fatal attack on a young boy in 2000 (Sinclair, 2001). This incident occurred despite park rangers shooting 40 Fraser Island dingoes between 1995-2000 because of their aggression. Visitor—dingo interactions, therefore, threaten the conservation of dingo populations, the maintenance of visitor safety, and the overall enjoyment of tourists.

Interpreting the Dingo Issue to Visitors

In addition to regulating dingo populations and fining people who are caught feeding dingoes, the QNPWS is implementing an interpretive strategy called “Be Dingo-Smart.” Inappropriate visitor behavior is recognized by QNPWS as a major contributor towards the nature of visitor-dingo interactions (Moore et al., 1997).

The strategy encourages visitors to behave appropriately toward dingoes (QNPWS, 1999). It communicates messages to visitors about how they might best prepare and manage their camping behavior in order to improve their actual experiences with dingoes: for example, “Always stay close to your children,” and “Secure all food supplies and rubbish, preferably in a vehicle.” Message content and dissemination has evolved over several years to include a range of pre-visit and on-site media. Indeed, it continues to evolve today through evaluation and visitor research.

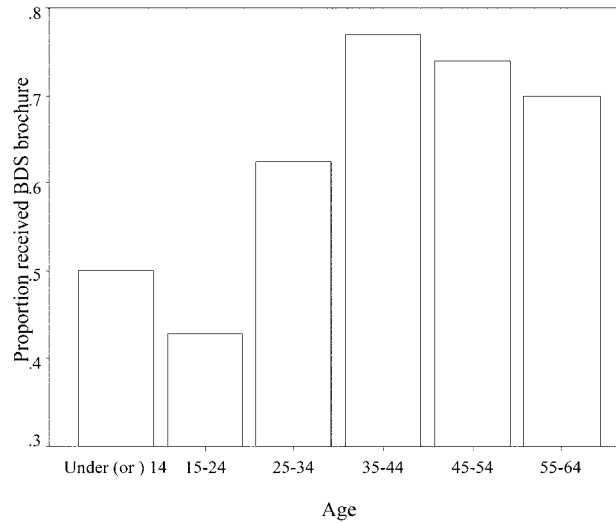
“Be Dingo-Smart” media uses messages and language consistent with theories of persuasive communication (Moore et al., 1997; Beckmann, 2001). For example, the program developed the message “Be Dingo-Smart” to imply visitors would be joining a group and implementing a social normative code of behavior (Beckmann, 2001). The QNPWS also uses rangers on the island and popular personalities on television to broadcast the critical messages. These aspects of the program are consistent with the theory of reasoned action, which suggests behavior is in part affected by social groups and by who presents the message (Fishbein & Ajzen, 1975).

Methods

A questionnaire was distributed to 412 domestic and international campers over a six-week period during the summer of 1999-2000. Day visitors, residents, and staff were not included within the sample. Sampling sites and methods were selected on the premise that they would provide a representative sample of the population of campers who frequent the Island during this period, as suggested by a QNPWS Senior Conservation Officer.

Campers were contacted directly and the survey was administered on-site with a researcher present to clarify any issues. The survey was developed in consultation with Queensland Parks and Wildlife Service and had three sections: one designed to create a visitor profile, the next assessing whether visitors recalled receiving the “Be Dingo-Smart” mes-

Figure 2: Proportion of age groups that recalled receiving the brochure about dingoes before visiting Fraser Island



sage, and the third assessing their knowledge of “Be Dingo-Smart” messages. It was initially pre-tested on 40 campers in the October prior to the survey period to ensure validity and reliability of responses with the survey technique.

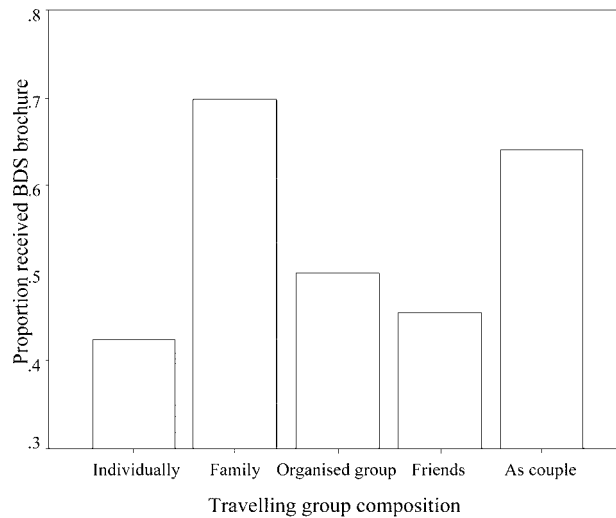
To create a profile of camping visitors to Fraser Island, the survey sought details of respondents’ previous visits, reasons for visiting the island, and the activities they planned to undertake. It also obtained general demographic information about people’s nationality, first language, age, gender, education level, and travelling group composition.

The second part of the survey assessed whether people received the “Be Dingo-Smart” message. Critical to developing this part of the survey was the concept that leisure occurs in chronologically distinct stages: anticipation, travel to the site, on-site experience, return travel, and recollection (Clawson & Knetsch, 1966). In the context of this theory, we separated pre-visit information from the on-site interpretation. The pre-visit component of the “Be Dingo-Smart” program was a brochure about how to “Be Dingo-Smart” issued as part of an information kit given to all people who receive a permit to visit Fraser Island. The on-site interpretation includes simple warning signs around the campsites, posters on the back of lavatory doors, and wayside stations that explain seasonal dingo behavior and possible impacts of people on this behavior. People were asked if they recalled having received the “Be Dingo-Smart” brochure (yes/no) and if they had read the brochure (yes/no). It also asked them whether they could recall seeing any of the other on-site “Be Dingo-Smart” messages. Finally, they asked what were their major sources of dingo information.

The final section, which assessed whether visitors understood the “Be Dingo-Smart” message, had twenty fixed-choice statements that could be answered either “true,” “false,” or “don’t know.” These statements were gathered from the “Be Dingo-Smart” brochure and the on-site interpretive panels. Topics ranged from dingo ecology and behavior to appropriate visitor behavior.

Data for this study were entered and analyzed using SPSS statistical software package for Windows. Cross-tabulations with chi-square analysis were used to test for significant differences between true/false statements or yes/no statements with key variables (i.e., demographic characteristics); values of $p > 0.05$ were used to indicate significance.

Figure 2: Proportion of travelling groups that recalled receiving the brochure about dingoes before visiting Fraser Island



Results

The profile of camping visitors to Fraser Island

The summer holiday period represented the first trip to Fraser Island for the majority of all respondents (56 percent). Of those who had visited before, the majority (59 percent) said they had visited 1-3 times, while 29 percent stated they had previously visited 4-10 times. The majority of those surveyed were Australian (57 percent). Of those people from other countries, most stated they were from the United Kingdom (40 percent) or Europe (37 percent). Most respondents were relatively young. Seventy four percent of the total sample were 35 years of age or younger and no respondent indicated that they were aged 65 or older.

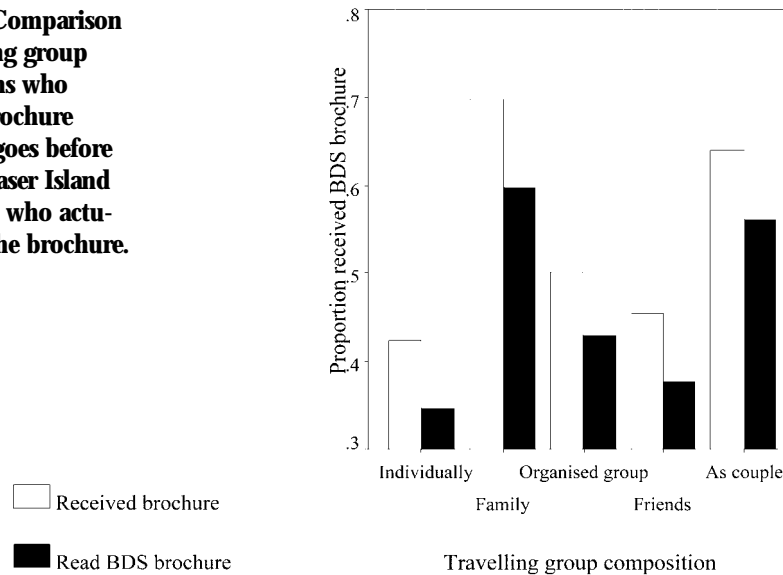
Forty two percent of respondents were traveling as part of a family with children, 30 percent were travelling with friends, and 18.5 percent stated that they were travelling as a couple. Respondents frequently indicated "camping" (86 percent) as their main activity. The five other most common activities include: "touring the island" (77 percent), "swimming" (76 percent), "relaxing" (72 percent), "go four wheel driving" (67 percent), "to see the wildlife" (58 percent), and "to sit round a campfire" (58 percent). This visitor profile is similar to the visitor profile found in previous studies of visitors to Fraser Island (Harper, 1993; Beckmann, Ballantyne, and Packer, 1996).

"Be Dingo-Smart" messages as part of Visitors' Pre-Trip Experience

Fifty-nine percent of all respondents stated that they recalled receiving the pre-visit "Be Dingo-Smart" brochure. This response varied between different age and camping groups. For example, 43 percent of the 15-24 age group stated that they recalled receiving the "Be Dingo-Smart" brochure (Figure 2). This is significantly less than the 70 percent stated by groups aged 35-44, 45-54, and 55-64 ($\chi^2=25$, d.f.=5, $p \leq 0.000$). Those travelling individually (42 percent) and with friends (45 percent) also were less likely to remember receiving the brochure as compared to those stating they were travelling as couples (65 percent) and families (70 percent) ($\chi^2=23$, d.f.=5, $p \leq 0.000$) (Figure 3).

Respondents were also asked to indicate if they had actually read the brochure. Half of the respondents stated they had read the brochure. Considering that 59 percent stated that

Figure 4: Comparison of travelling group proportions who recalled brochure about dingoes before visiting Fraser Island with those who actually read the brochure.



they received the brochure indicates that approximately nine percent of respondent received the “Be Dingo-Smart” brochure and did not to read it. Individual travellers (35 percent reading), and those travelling with friends (38 percent reading) were significantly less likely to have read the brochure ($\chi^2=18$, d.f.=5, $p \leq 0.002$) (Figure 4). Respondents aged 15-24 were also significantly ($\chi^2=23$, d.f.=5, $p \leq 0.000$) less likely than other age groups to have read the brochure (Figure 5). By contrast, it was those people visiting the island to see the wildlife, ($\chi^2= 4.22184$, d.f =1, $p \leq .05$) and go fishing ($\chi^2= 5.38202$, d.f =1, $p \leq .02$) who were most likely to read the brochure.

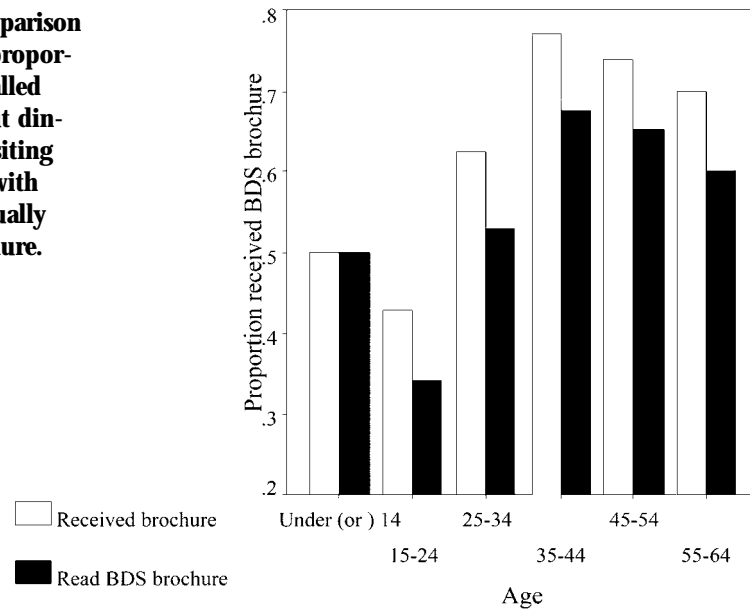
In summary, half the respondents (n=208) could either not recall receiving or had ignored the pre-visit “Be Dingo-Smart” brochure despite it being issued with all permits to visit Fraser Island.

The “Be Dingo-Smart” message as part of Visitor’s On-Site Experience

Various on-site media tended to be read by different demographic groups (Table 1). Despite being posted on only a few of the doors to the lavatory cubicles at Fraser Island, 37 percent of all respondents indicated that they had read this information. Of those respondents who reported reading the poster of the lavatory doors, a significant proportion (72 percent) were Australians ($\chi^2=10.6$, d.f.= 2, $p \leq 0.005$) and female ($\chi^2=20$, d.f.= 1, $p \leq 0.000$). They were also more likely to be less than 14 years of age ($\chi^2=17.1$, d.f.= 5, $p \leq 0.004$). Importantly, campers in demographic groups that were not reached by the pre-visit information (individuals and visitors with friends) were more likely to read information on lavatory doors ($\chi^2=13.1$, d.f.= 5, $p \leq 0.02$).

Campers who planned to undertake short walks during this trip accounted for 62 percent of respondents who read dingo information from the on-site interpretive panels ($\chi^2= 14.3$, d.f.=1, $p \leq 0.000$). Those interested in viewing wildlife ($\chi^2= 4.3$, d.f.=1, $p \leq 0.03$) and those going sight-seeing ($\chi^2= 7.2$, d.f.=1, $p \leq 0.004$) were also more likely to read the inter-

Figure 5: Comparison of age group proportions who recalled brochure about dingoes before visiting Fraser Island with those who actually read the brochure.



pretive panels. Those campers who desired to incorporate bushwalking ($\chi^2=5.3$, d.f.= 1, $p \leq 0.02$) and birdwatching into their visit were significantly more likely to read information from the wooden routed signs ($\chi^2=8.5$, d.f.= 1, $p \leq 0.003$).

In addition to printed media, the rangers conduct talks and meet informally with visitors. Those staying longer periods (about 5 days) tended to get information about dingoes from the ranger talks ($\chi^2=34$, d.f.= 13, $p \leq 0.000$). Whereas repeat visitors were significantly more inclined to meet informally with rangers ($\chi^2=10.2$, d.f.=1, $p \leq 0.001$). Campers seeking time together as family were also more inclined to meet informally with rangers ($\chi^2= 8.86$, d.f.=1, $p < 0.00$).

Those visitors who gained information from secondary sources such as a hostel or four-wheel-drive hire tended to be first-time visitors ($\chi^2= 21.9$, d.f.=1, $p \leq 0.000$) and those from overseas ($\chi^2= 8.83$, d.f.=1, $p \leq 0.000$). They also tended to be between 15 and 34 years of age ($\chi^2= 18.4$, d.f.=1, $p \leq 0.003$). Indeed, 97 percent of people stating they received information through secondary sources were of this age group.

In summary, 32 percent of respondents stated they could not recall any information about dingoes during any stage of their trip. For those who could recall, the major source of dingo information was the "Be Dingo-Smart" brochure and the display panels about dingoes on the island. Other sources such as wooden routed signs and posters on lavatory doors were differentially noticed by the various demographic groups.

Are the "Be Dingo-Smart" messages remembered?

Campers who could recall receiving some information about dingoes showed significantly higher scores on the overall knowledge test than campers who could not (Table 2).

Typically, respondents showed greater levels of knowledge about appropriate behavior issues (i.e., feeding dingoes, the outcomes of feeding) than they did toward questions of dingo ecology (breeding, behavior, life span). On average, 64.4 percent of respondents cor-

Table 1: The major on-site interpretive media used by different demographic groups

Interpretive media	Key demographic
Lavatory doors (37%)	Australians females young children (14 and under)
Interpretive dingo display panels (57%)	people interested in going for short walks, viewing wildlife or sight-seeing
Wooden routed signs (33%)	Bird-watchers and bushwalkers
Informal ranger patrols (13%)	Family groups repeat tourists
Ranger Talks (12%)	People staying for long periods
Secondary sources (13%)	first-time tourists international tourists organized groups younger age groups (15 – 34)

rectly answered the 13 questions from the brochure, whereas only 33.8 percent of respondents correctly answered the five questions drawn solely from the interpretive panels.

When knowledge levels were cross-tabulated with visitors recalling seeing different types of media, significant differences were found ($\chi^2=67.8$, d.f. =34, $p \leq 0.000$) (Table 2). Camping visitors who read the “Be Dingo-Smart” brochure showed increased knowledge about appropriate behavior towards dingoes. Campers who gained information from interpretive signs and lavatory doors were more inclined to remember messages about dingo ecology. Campers who received information from hostels and vehicle-hire companies were significantly likely to answer some questions incorrectly.

Repeat visitors had significantly higher total knowledge than first-time visitors ($\chi^2=52.3$, d.f. =34, $p \leq 0.02$). Respondents aged 15-24 and 25-34 scored significantly lower on the knowledge test compared to all other age groups ($\chi^2=73$, d.f. =34, $p \leq 0.000$). Overall, respondents aged 55-64 had the highest knowledge scores. Significant differences for knowledge scores were also found with the composition of respondents’ travelling group. Respondents travelling within a family scored the highest overall, significantly higher than respondents travelling with friends ($\chi^2=78.4$, d.f. =34, $p \leq 0.000$) who scored lower on the knowledge test than any other travelling group.

Discussion

Seeing wild dogs (dingoes, coyotes, wolves, etc.) is of interest to tourists at various sites around the world (Wilson & Herberlein, 1996). Tourists to Fraser Island are no different. Almost half of all visitors consider seeing a dingo a positive experience that provides a “thrill” (Beckmann et al., 1996; Porter, 2000). Thus, the dilemma facing the Queensland National Parks and Wildlife Service is how to manage an important part of the tourist experience that may coincidentally lead to the wildlife becoming aggressive and, therefore, dan-

Table 2: Cross-tabulations of correct responses for specific questions by different sources of “Be Dingo-Smart” information

Knowledge question (T=True, F=False)	Any Information	Pre-visit Brochure	On-site interpretive panels	Lavatory doors	Secondary sources	Informal patrols	Advertised ranger talks
dingoes breed once a year, dogs breed twice (T)	$p \leq 0.000$		$p \leq 0.01$				
young dingoes try to dominate people – especially children (T)	$p \leq 0.000$	$p \leq 0.01$	$p \leq 0.02$				$p \leq 0.02$
a healthy dingo looks solid and well built (F)	$p \leq 0.000$	$p \leq 0.000$	$p \leq 0.04$				
dingoes hunt in packs for small mammals and insects (F)					$p \leq 0.005^*$		
dingoes lose their hunting skills when they are fed or scavenge rubbish (T)	$p \leq 0.000$	$p \leq 0.04$					
in spring, adults more fiercely scent-mark, patrol, and protect their territory (T)					$p \leq 0.001^*$		
when approached by a dingo, waving your arms will scare them away (F)	$p \leq 0.000$	$p \leq 0.003$	$p \leq 0.000$	$p \leq 0.001$			
dingoes will fight other dingoes to the death if necessary (T)					$p \leq 0.01^*$		$p \leq 0.003$
dingoes usually live for about 20 years (F)	$p \leq 0.000$	$p \leq 0.006$					
dingoes' natural behavior changes throughout the year (T)	$p \leq 0.01$		$p \leq 0.002$				
fish remains should be buried above the high-tide mark, at elbow deep (30cm) (T)	$p \leq 0.002$	$p \leq 0.000$					
most of Fraser dingoes have interbred with domestic dogs (F)	$p \leq 0.000$						
feeding encourages dingoes to become annoying pests instead of wild animals (T)	$p \leq 0.000$	$p \leq 0.04$	$p \leq 0.02$				
dingoes that bite or scratch visitors may have to be destroyed (T)	$p \leq 0.003$	$p \leq 0.03$	$p \leq 0.000$		$p \leq 0.001^*$		
dingoes are attracted by food scraps and smells (T)	$p \leq 0.01$	$p \leq 0.01$		$p \leq 0.04$			
Increased feeding has allowed pups to grow without becoming wary of people (T)							
dingoes chase people when they are jogging and children when they are playing (T)	$p \leq 0.000$	$p \leq 0.000$					
food scraps hanging in the bush and on trees are safe from goannas and crows (F)	$p \leq 0.01$						
dingoes may threaten you or other visitors by growling, nipping, or biting (T)	$p \leq 0.006$	$p \leq 0.02$	$p \leq 0.02$	$p \leq 0.009$			
dingoes are frightened away by calling or splashing near them (T)	$p \leq 0.000$	$p \leq 0.004$	$p \leq 0.003$	$p \leq 0.003$		$p \leq 0.002$	

* significantly likely to answer incorrectly.

gerous to tourists. This dilemma occurs within a broader context of an increasing demand for opportunities to interact with nature.

Similar dilemmas are faced by conservation agencies throughout the world. There are numerous examples where wildlife fed by humans become unnaturally aggressive toward people, leading to a management problem. These examples include free-ranging primates in Asia, bears in North America, sea lions and dolphins in the oceans and seas (Orams, 2002). However, canids becoming aggressive (including wolves) are a particularly difficult dilemma because canids tend to invoke extremes in attitudes within the community: from love to hate (Scarce, 1998; Woods, 2000).

Conservation agencies faced with wildlife becoming aggressive commonly prohibit feeding the wildlife. Such bans have proven to be extremely difficult to enforce and often have low levels of compliance (Orams, 2002). Agencies, therefore, supplement prohibition with information and education campaigns that aim to prevent inappropriate behavior (Chavez, 1996). Such interpretation campaigns may achieve a variety of management objectives without imposing upon the wants or needs of the visitor; however, the success of these programs has seldom been evaluated (Moscardo, 1998).

Social psychology provides a broad framework for interpreting the result of this study by suggesting the nature of message-processing is dependent on an individual's ability, opportunity, and motivation to process a persuasive message (Chaiken, 1987; Petty and Cacioppo, 1986). Ability seems an unlikely factor influencing the processing of the "Be Dingo-Smart" message. The messages given and presentation of the "Be Dingo-Smart" program are consistent with current theory on good interpretation (Beckmann, 2001).

There were two significant findings in terms of opportunity factors. First, although the content may be similar in different media, they are attractive to different visitor groups. Australian females tended to read information on lavatory doors, perhaps reflecting Australian men's preference for using standing urinals (where signs are absent). Repeat visitors were more inclined to talk to the rangers. Campers that undertook short walks tended to gain dingo information from the on-site interpretive panels. Fazio (1979) also tested various media focusing on low-impact camping and found that various media were needed to ensure the message was received. Effective communication of safety issues to visitors, therefore, requires interpreters to use a range of media.

Second, campers aged 15-24 who were travelling individually, with friends, or as part of an organized "backpacker group" were significantly less likely to read the brochure. Information given by secondary sources also led this group to have inaccurate or false information about dingoes. This finding is similar to other findings about disseminating interpretation to young visitors or recreationists in other areas (Roggenbuck, 1992). For example, Ross and Moeller (1974) found that adolescent first-time campers had the lowest knowledge of campground rules.

However, the most important psychological barrier to people understanding the "Be Dingo-Smart" message appears to be motivation. At Fraser Island, most (if not all) visitors should have received the "Be Dingo-Smart" message as part of their permit to visit Fraser Island. Yet 50 percent of visitors stated they could not recall receiving or had simply ignored the pre-visit information about dingoes. In particular, young campers and backpackers were significantly less likely to have read the brochure. Some comments from respondents suggested that the information was not salient when it was received (Porter, 2000). For example, some visitors said that when they received the pre-visit information

they were simply looking for tidal information so that they knew when best to fish, while others stated they were looking where to party or where to find a casual relationship on the island (Porter, 2000, unpublished data).

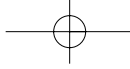
These findings are part of a wider ongoing effort by Queensland National Parks and Wildlife Service to manage this tourist-wildlife dilemma. In 1996, Beckmann, Ballantyne, and Packer assessed visitor motivations to Fraser Island, which led to additional interpretive panels and "look out for dingoes" signs at all entrances to picnic and campgrounds. Since this survey, the QNPWS has modified its interpretive program to include displays in backpacker hostels and additional dingo-awareness information being sent to all local hostels and vehicle hire companies. More research on dingo-tourist interactions currently undertaken will lead to further refinement of the "Be Dingo-Smart" strategy as part of an overall risk management strategy (Olssen pers. comm., 2001). Whether the information disseminated leads to actual behavior change in visitors remains unknown.

To conclude, this research shows that even in ideal situations where it is feasible for management to reach the entire target audience (through the issue of permits prior to a visit), the diversity of interests and motivations by visitors complicates the issue. Tour leaders or members of a group may not tell other visitors accurate information, and some people may also choose to ignore the message. Several authors urge interpreters to design programs based on visitors needs, interests, and specific beliefs (e.g., Ham and Krumpke, 1996; Negra and Manning, 1997). "Be Dingo-Smart" has adopted an approach based on current theories of persuasion and modified according to previous research findings. However some people with specific motivations and interests (e.g., "fishing" or "partying") are proving particularly difficult to reach. This finding suggests that although using a range of media and message types can mean the message reaches more people, the use of interpretation to warn visitors of potential dangers still has some limitations. It needs to be supplemented with other visitor management strategies.

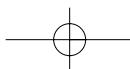
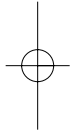
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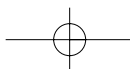
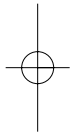
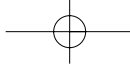
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APPENDIX
submission
guidelines
for authors

The purposes of the *Journal of Interpretation Research (JIR)* are to communicate original empirical research dealing with heritage interpretation and to provide a forum for scholarly discourse about issues facing the profession of interpretation. *JIR* is published by the National Association for Interpretation, the preeminent professional association representing the heritage interpretation profession.

In recognition of how difficult it is for interpreters to keep up with the growing and diverse body of relevant literature, *JIR* will publish reviews of recent books, professional meetings and workshops, government publications, and original literature reviews and bibliographies dealing with heritage interpretation. Additionally, *JIR* will publish thought pieces that exhibit excellence and offer original or relevant philosophical discourse on the state of heritage interpretation. Review articles and thought pieces are reviewed internally by the *JIR* editorial staff.

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- McCool, S., & Braithwaite, A. (1992). Persuasive messages and safety hazards in dispersed and natural recreation settings. In M. Manfredi (Ed.), *Influencing Human Behavior*. Champaign, IL: Sagamore Publishing.
- Reno, R., Cialdini, R., & Kallgren, C. (1993). The transsituational influence of social norms. *Journal of Personality and Social Psychology*, 64, 104–112.
- Tilden, F. (1977). *Interpreting Our Heritage* (2nd ed.). Chapel Hill: University of North Carolina Press.

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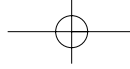
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APPENDIX

For More Information

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