

Interpreter Attributes and Their Impact on Visitor Outcomes in National Park Service  
Interpretive Programs

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Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in  
partial fulfillment of the requirements for the degree of

Master of Science

In

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February 18, 2013

Blacksburg, Virginia

Keywords: Environmental Interpretation, Visitor Outcomes, National Park Service

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## **Abstract**

By revealing deeper meanings and connecting the visitor to the resource, interpretation strives to accomplish a number of goals. Interpretation can increase knowledge of a program's topic, change the visitor's attitude toward something, change future behaviors, and increase appreciation for a place and its resources. While literature exists professing best practices for interpretation, little empirical support is present in the research literature to validate these practices' individual links to desired outcomes. This study empirically identifies attributes of the interpreter that statistically linked to visitor outcomes. We tracked 31 interpreter attributes and 10 intended outcomes of interpreters in 376 live interpretive programs in 24 units of the U.S. National Park Service (NPS) and conducted visitor surveys immediately following the programs. This research addresses the following question: Which interpreter attributes most consistently lead to desired outcomes? Our research shows that the interpreter attributes most consistently associated with positive visitor outcomes were the interpreter's apparent degree of confidence and expression authentic emotion. The results can be used to inform interpretive training throughout the National Park Service.

## **Acknowledgements**

A number of people made this research possible and supported me throughout the project. My committee, consisting of Dr. Marc Stern, Dr. Robert Powell, and Dr. Steve McMullin, played a huge part in supporting me and guiding me from start to finish. The field research necessary to compile our data also would not have been possible without the assistance of Emily Martin, Jennifer Thomsen, and Bethany Mutchler. I would also like to thank NPCA's Center for Park Management for their financial support and further advice and comments. Finally, I would like to thank the interpretation and education staff of the National Park Service for their cooperation and enthusiasm in supporting this research project. Without their support and the interpretive programs they provide to the public, this project would not have been possible.

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## Introduction

Interpretation can be defined as the art of revealing meanings and relationships of natural and historic objects and processes in a way that is entertaining and interesting to the audience (Tilden 1957, Ham 1992). Interpretation is used in a number of different settings to help educate or inform the visitor, but these are not the ultimate goals of interpretation. By revealing deeper meanings and connecting the visitor to the resource, interpretation strives to accomplish a number of goals. Interpretation can increase audience members' knowledge about the program topic (Powell et al. 2009), change their attitudes toward something (Ajzen and Fishbein 1977), influence their future behaviors (Powell and Ham 2008), increase appreciation for a place and its resources (NPS 2001), and enhance their enjoyment of the experience (NPS 2001).

Despite a large body of both theory and empirical research in the interpretation field, researchers have identified a lack of empirical evidence explicitly linking consensus-based best practices to visitor outcomes (Skibins et al. 2012). These hypothesized best practices comprise those regularly suggested in common text books and other training sources alike (e.g. Tilden 1957, Ham 1992, Ward and Wilkinson 2006, IDP 2008). In a recent review of 70 peer-reviewed research studies conducted over the last decade, Skibins et al. (2012) found that most evaluations of live interpretation assessed the outcomes of a single program. While findings of positive outcomes across multiple studies suggest the broad efficacy of interpretation in general, no study has yet isolated the impacts of different interpretive practices and

approaches upon visitor outcomes. This study aims to close this gap in the literature through a comparative study of live interpretive programs across the NPS.

The National Park Service conducts more interpretive programming than any other agency or organization (NPS 2009). This not only means that the NPS has great potential for interpretive programming and visitor contact, but it also provides opportunities for observing and understanding the link between interpreter delivery styles and visitor outcomes through comparative research. Interpretation in the NPS is accomplished through a wide variety of ranger, volunteer, and concessionaire-led programs, varying from campfire programs to guided hikes (IDP 2008). Both the sheer number of interpretive programs provided by the NPS and the wide variety of program types available make it an excellent candidate for isolating specific variables that may lead to more or less desirable outcomes.

Tilden's principles have served as a strong basis for interpretation over the past 50 years (Skibins et al. 2012). Interpretation in the NPS is based on these principles and other consensus-based best practices (Tilden 1957, IDP 2008). The study addresses the following research question:

- Which interpreter attributes are most consistently associated with positive visitor outcomes in National Park Service interpretation?

Interpreter attributes include measures which capture the personality of the interpreter, such as sincerity and charisma; his or her style of program delivery, such as audibility and formality; and their interaction with audience members, measured by such things as responsiveness and false assumptions of the audience.

The research team observed 376 live interpretive programs in 24 units of the National Park Service, tracking interpreter attributes and practices hypothesized to influence visitor outcomes. We also conducted brief interviews with interpreters prior to their programs to collect information about them and to determine their intended goals for their programs. Surveys were conducted with attendees over the age of 15 immediately following each program to measure visitor satisfaction as well as the self-reported impacts of the program on attendees' attitudes and behavioral intentions. This thesis will present the field research and its resultant data and discuss the implications for interpretation in the NPS.

## **Conceptual Framework**

We hypothesize relationships between a number of interpreter attributes and desired outcomes in visitors. Empirical evidence for these particular relationships is lacking in the literature (Skibins et al. 2012). A good deal of interpretation research has been conducted to study the effect that interpretive programs have on participants (e.g. Ham and Weiler 2002, Jacobson et al. 2006, Machnik 2007, Skibins et al. 2012). However, most of these studies are based on individual interpretive programs, making it difficult to link specific attributes or best practices to specific outcomes (Skibins et al. 2012). The literature also suggests that the interpreter's personal style has an impact on visitor outcomes (Ham 1992, Jacobson 1999, Ham and Weiler 2002, Lewis 2008), but again empirical evidence is lacking. Thus, there is a gap in the literature between assumed best practices and evidence supporting their influence on visitor outcomes. In this section, we define the particular interpretive approaches and visitor outcomes considered in this study. Interpretive programs may aim to impact any or all of these characteristics in visitors, although the extent to which each is desired varies from program to program.

### ***Visitor Outcomes***

Skibins et al. (2012) provide a sound framework from which to define desired outcomes of a program. These outcomes include: satisfaction, awareness, knowledge, attitudes, behavioral intentions, and behavior. Satisfaction is a commonly used indicator of program quality, measuring the visitors' overall impression of the program and their experience with it. It implies that the visitor either enjoyed or did not enjoy the program he or she attended. It is

typically measured by asking the visitor to score his or her overall satisfaction with a program or place on a single scale or series of questions (Oliver 1993, Powell and Ham 2008).

Awareness is the cognizance or recognition of the existence of something (Skibins et al. 2012), which in this case is the visitors' recognition that a park resource, issue, or topic exists and that there is an important story behind it and reason for preserving it. Awareness is typically viewed as a precursor to other variables such as attitude and behavioral intention changes (Hungerford and Volk 1990). Once visitors develop awareness of a subject, it becomes possible for them to gain a deeper understanding of it. By provoking the audience to reflect on the topic and give it deeper thought, the visitor may then be able to gain their own subjective understanding of the resource or issue. This understanding can play a key part in visitors' caring for and wanting to protect a place (Ham 2009).

Knowledge gain generally involves the amount of factual knowledge and information recall that is gained by the visitor during a program. It is an indicator of the level of familiarity the visitor has gained with the topic and their increased ability to recount information presented during the program. It implies not only that they were provided with knowledge of the program topic, but that it was presented in a way that was clear and understandable to the audience. This can be measured either through follow-up questions testing the knowledge gained during a program, or by visitors' own subjective assessments of the knowledge they gained (Stern et al. 2008, Skibins et al. 2012).

Attitude change is a commonly measured program outcome, as it can be indicative of both the visitors' feelings about a topic or place and their likelihood to change certain behaviors

as a result. Attitudes are typically measured as visitors' change in opinion toward a particular attitude object (Eagly and Chaiken 1993). In this context, that attitude object may be the topic of the program, the resources in the area, the park itself, the NPS as an agency, or the idea of stewardship (Ajzen and Fishbein 1977, Stern et al. 2008, Skibins et al. 2012).

Behavioral intentions are visitors' claimed intentions to perform a certain behavior (Powell et al. 2009). Behavior is the reported or observed change in that behavior (Powell and Ham 2008). In the absence of observation or follow-up surveys, behavioral intentions are a commonly used indicator of program quality because they can measure the direct impact the program had on visitors' intended actions. Intentions can be measured by asking visitors' how the program changed their intended actions regarding stewardship and resource protection while in the park or other similar places. Alternatively, pre-experience and post-experience survey designs can examine changes in behavioral intentions before and after an intervention (e.g. Stern et al. 2008). For the purposes of this study, we are most concerned with stewardship behaviors, which may occur both within the park and after the visitor leaves.

### ***Individual Communication***

Interpretation research tends to focus primarily on the effect of entire programs on visitors, rather than on the particular attributes of the interpreters themselves. We draw from the fields of communication and teaching research to further frame our focus on the interpreters as opposed to the content or format of their programs.

Finn et al. (2009) explore the ideas of teacher immediacy, credibility, and clarity. Immediacy refers to the use of communication to foster closeness and minimize physical or

mental distance between communicators (Mehrabian 1969). Immediacy deals with the familiarity that is created between an instructor and his or her audience members. Greater immediacy is brought about by the use of small talk, some limited self-disclosure, addressing audience members by their first names, and other personal, non-verbal communication forms (Myers et al. 1998). These practices create familiarity and enhance openness to the content of the lesson. In this way, instruction becomes a more intimate experience and is able to reach the audience more effectively.

Credibility refers to the perceived believability of the communicator. This credibility is comprised of three dimensions: competence, trustworthiness, and caring (Finn et al. 2009). In combination, these three dimensions can open an audience to a higher level of comfort with the instructor and enhance the extent to which they believe what the instructor says. With increased credibility, interpreters are better able to reach their audience with both the message and content of their program.

The aspect of clarity is also essential to maintaining audience attention. Teacher clarity is a set of behaviors used by the instructor to make the instructional message as straightforward as possible (Chesebro and Wanzer 2006). By avoiding ambiguity and stimulating the listener through appropriately-structured verbal and nonverbal messages, the instructor becomes more effective in reaching the student (Finn et al. 2009). Finn et al.'s review found that lessons taught with any combination of these characteristics were more effective for learners than those that exhibited only one of them.

The concept of affinity-seeking has also become a stalwart of the communication education field, which can likely also be applied to the field of interpretation. Affinity-seeking is an active communication process in which the communicator attempts to get their listeners to like them (McCroskey et al. 1986). These affinity-seeking behaviors are closely linked with immediacy, which can be used in combination to quickly develop a relationship between the communicator and the audience. Students seek the approval of their teachers and when a relationship is built between teacher and student, student outcomes are more positive (McCroskey et al. 1986).

### ***Key Interpreter Attributes***

While some studies have analyzed visitors' opinions on the performance of interpretive rangers (Ham and Weiler 2006, Machnik 2007), this study aims to determine how that performance actually relates to specific outcomes reported by visitors (satisfaction, awareness, knowledge, attitude change, and behavioral intentions). The research examines several attributes related to the style with which an interpreter delivers a program. While many of these attributes have been explored before, their individual and combined impacts on visitor outcomes have not been explicitly tested to the best of our knowledge.

The table below (Table 1) provides an overview of the interpreter attributes that shape the overall performance of the interpreter. These range from interpreters' interactions with individual audience members to their methods of managing a group and their own connection to the topic at hand. The table is intended to be definitional. Specific measurement of each attribute is described in the methods section.

**Table 1. Key interpreter attributes found in literature.**

Comfort of the Interpreter	The interpreter's ability to successfully present the program in a calm, comfortable, and capable manner throughout the duration of the program, which may affect the overall comfort of the audience and their ability to focus on the program and stay engaged (Moscardo 1999, Ward and Wilkinson 2006). This is essentially the absence of apparent nervousness, discomfort, or self-doubt.
Apparent Knowledge	The interpreter's apparent ability to present information and recall key facts and figures (Lewis 2008). It is the extent to which the interpreter appears to know the information involved in the program and can provide clear answers to visitors' questions. This may have an impact on the audience's trust and confidence in the interpreter (Ward and Wilkinson 2006). Research has focused on the impression of knowledge the interpreter gives the audience, rather than the actual correctness of the information provided (Ham and Weiler 2002).
Eloquence	The manner in which the interpreter is able to articulate and speak clearly throughout the duration of the program (Lewis 2008). This can influence audiences' degree of alertness and interest in program messaging (Ham and Weiler 2002, Ward and Wilkinson 2006, IDP 2008, Lewis 2008).
Audibility	The audience's ability to clearly hear and understand what the interpreter is saying. If an audience is unable to hear what the interpreter is saying, they will likely have a difficult time understanding or enjoying the program.
Passion	Sometimes referred to as the "priceless ingredient" in interpretation (Beck and Cable 2002), multiple authors recognize the importance of passion in the interpreter (Moscardo 1999, Ham and Weiler 2002). Passion is defined as the interpreter's apparent level of enthusiasm and excitement for the material when presenting a program (Ward and Wilkinson 2006). A ranger who is disinterested in the topics or resources discussed in the program will likely seem detached from the experience, which may negatively affect visitor experience (Ham and Weiler 2004).
Charisma	The interpreter's ability to interact with the audience and provide a persona that is outwardly at ease (Ward and Wilkinson 2006). Charisma is an essential part of the interpreter's personality and the visitor's experience with him or her. We define it as the interpreter's level of ease while socializing with audience members and the degree to which the audience seems to like them.
Sincerity	The interpreter's apparent genuine emotional connection to the topic, resource, or park. Sincerity is apparent when the interpreter seems genuinely invested in the messages he or she is conveying. The converse of this would be simply reciting information (Ham 2009).
Responsiveness	The extent to which the interpreter interacts with the audience, collects information about their interests and backgrounds, and responds to their specific questions and requests or non-verbal cues (Knudson et al. 2003, Lewis 2008). High levels of responsiveness on the part of the interpreter are generally thought to better hold the interests of their non-captive audiences (Jacobson 1999).

Inequity	Inequity occurs when the interpreter does not include all members of the audience equally, interacts with some audience members more than others, or shows more interest in the questions or needs of certain visitors to the program (Ham and Weiler 2006). Playing “favorites” or relying on only one or two audience members to interact with the interpreter or answer questions may turn off other members of the audience (Ham and Weiler 2002).
Humor	The interpreter’s use of silly stories or jokes to share the topic with the visitor, versus the extent to which they are serious, reverent, or solemn about the topic (Regnier et al. 1992, Ham and Weiler 2002, Knapp and Yang 2002, Ham and Weiler 2004). Humor can be measured in terms of both quantity (the amount of humor that is used during the program) and quality (how funny the ranger actually is and how the audience responds to their use of humor). Sarcasm (the use of mocking, contemptuous, or ironic language or tone) is a specific form of humor that was also tracked in this study.
Personal Sharing	The extent to which the interpreter shares personal information about him or herself during a program. This personal sharing may or may not demonstrate their connection to the resource, its meaning for them, or why it is relevant to their lives (Jacobson 1999). The interpreter’s willingness to share personal information, answer questions about themselves, or provide their own opinions may be an important part of the visitors’ experience. This could potentially enhance the credibility of the interpreter at appropriate levels, but could also negatively impact the visitor experience if used too much.
Formality	The formality of an interpreter is defined on a spectrum from very casual to highly formal. This level of formality deals with the interpreter’s interaction with the audience, management of the group, and use of authority when running a program.
Primary Identity	The interpreter is free (to some extent) to select and define the personality he or she shares with the audience, and this may shape the way in which the audience receives the information presented to them (Ward and Wilkinson 2006). We focus on three main identities, which we call the <i>friend</i> , the <i>authority figure</i> , and the <i>walking encyclopedia</i> . The friend is generally courteous, approachable, and happy to help visitors or answer questions for them. The friend tends to mingle with audience members and interact freely with them during the course of the program (Ham and Weiler 2002). The authority figure emphasizes his or her role as a park official and focuses on rules, regulations, and authority as a means of conveying the message of the program (Ham 2002, Knapp and Yang 2002). The walking encyclopedia is focused on providing information and answering any question the audience has with a set of well-developed facts (Knapp and Yang 2002, Larsen 2003). The intention is to be a “fountain of knowledge” that provides information continuously throughout the program. This identity is the expert who is available to the group, much like a school teacher, so that they may learn everything there is to know about the topic at hand (Ham 1992).
Questionable Information	Providing questionable information (making statements that members of the audience know or strongly believe to be untrue) or presenting opinion as fact may contribute to eroding the trust and receptiveness of visitors.
Bias	Obvious bias on the part of the interpreter while presenting a program may turn off some members of the audience, making them less receptive to other attempts made by the interpreter. This is defined as presenting strong opinion, which may be in direct conflict with the beliefs or opinions of audience members.

Interpreters' intended outcomes for their audiences may also shape how they interact with an audience and present a program. When presenting a program, an interpreter may decide to focus on shaping knowledge (Weiler and Smith 2009, Skibins et al. 2012), awareness (Ballantyne and Hughes 2006), attitudes (Ward and Roggenbuck 2003, Powell et al 2009), understanding, intentions (Powell and Ham 2008, Weiler and Smith 2009), behavior (Ward and Roggenbuck 2003, Powell and Ham 2008), or entertainment. We examined these intended outcomes through brief interpreter surveys prior to each program we observed. We also examined the level of experience of the interpreter and their degree of excitement for each program we observed, as we expected that these might be predictive of how the delivery each program. Finally, we recorded whether the interpreter was a ranger, volunteer, or privately hired concessionaire working within the park.

## Methods

Research was conducted from June through August of 2011 by observing live interpretive programs in the NPS, assessing them based on all relevant interpreter, program, and setting attributes, and conducting surveys with visitors. Program observations and visitor surveys were used to explore relationships between interpreter inputs and visitor outcomes. Brief interviews were also conducted with interpreters before each program to understand their intentions and to collect general background information about the interpreters. A wide diversity of program types, including guided walks, hands-on activities, demonstrations, talks, and campfire programs, was observed in a variety of settings at NPS units across the country. The research team, which consisted of four researchers, tracked each of the interpreter attributes described above. At the conclusion of each program, surveys were distributed to visitors soliciting their impressions of the program and its impact on their overall satisfaction, their experience and attitudes, and their behavioral intentions.

For the purposes of this study, the population under consideration was any live interpretive program that took place within a national park unit. These included programs led by rangers, volunteers, or private concessionaires. Some interpreters were audited more than once, but evaluation was based on the specific performance of the interpreter during each single program. In most cases, a single member of the research team completed the observation. However, team members occasionally observed programs together to maintain consistency in observational techniques and interpretation.

Data were analyzed using T-tests, correlation, and regression to examine the relationships between interpreter inputs and visitor outcomes. The methods are discussed in more detail below.

### ***Site Selection***

A list of relevant park criteria was created to guide which park units would be included in the research. These factors included annual visitation numbers, park location (region of the country and distance from population centers), programming focus, number of programs offered to the public, and willingness to participate in the study. In order to ensure adequate visitor attendance at interpretive programs, we only considered parks that received at least 35,000 annual recreation visits. Parks were categorized as urban, urban-proximate, or remote based on their proximity to major metropolitan centers. Metropolitan areas were defined as having an urban core of at least 50,000 residents. Urban parks were located within the limits of these metropolitan areas. Urban-proximate parks were located outside these cores, but within a 60 mile radius of these areas. Remote parks were located at least 60 miles from any metropolitan area. The overall programming focus of interpretive themes used in each park was also considered and placed into one of three categories: predominantly cultural, predominantly natural, or a mix of the two. We aimed to maximize diversity across each of these factors. Finally, we aimed to be able to observe at least ten programs in each park in five days or less, so we sought park units with enough programs such that this would be feasible.

Twenty four park units were selected for inclusion in the study. The following table (Table 2) provides an overview of the park units that were selected as part of this research.

**Table 2. Park units included in the study.**

<b>Park Unit</b>	<b>Resource Focus</b>	<b>Park Location</b>	<b>Annual Recreation Visits<sup>a</sup></b>
Aztec Ruins National Monument	Cultural	Remote	37,437
Badlands National Park	Natural	Remote	977,778
Bryce Canyon National Park	Natural	Remote	1,285,492
Chaco Culture National Historical Park	Cultural	Remote	34,226
Ford's Theater National Historic Site	Cultural	Urban	662,298
Fort McHenry National Monument and Historic Shrine	Cultural	Urban	611,582
Gettysburg National Military Park	Cultural	Urban-Proximate	1,031,554
Grand Canyon National Park	Natural	Remote	4,388,386
Great Smoky Mountains National Park	Mix	Urban-Proximate	9,463,538
Harpers Ferry National Historical Park	Cultural	Urban-Proximate	268,822
Independence National Historical Park	Cultural	Urban	3,751,007
Jefferson National Expansion Memorial	Cultural	Urban	2,436,110
Jewel Cave National Monument	Natural	Remote	103,462
Lincoln Home National Historic Site	Cultural	Urban	354,125
Manassas National Battlefield Park	Cultural	Urban-Proximate	612,490
Mesa Verde National Park	Mix	Remote	559,712
Mount Rushmore National Memorial	Cultural	Remote	2,331,237
National Mall	Cultural	Urban	1,363,389

Navajo National Monument	Mix	Remote	90,696
Point Reyes National Seashore	Natural	Urban-Proximate	2,067,271
San Francisco Maritime National Historical Park	Cultural	Urban	4,130,970
Ulysses S. Grant National Historic Site	Cultural	Urban	39,967
Wind Cave National Park	Natural	Remote	577,141
Yosemite National Park	Natural	Remote	3,901,408

<sup>a</sup> Annual visitation from 2010 (<http://www.nature.nps.gov/stats/>)

### ***Program observations***

Definitions were developed for all interpreter attributes observed during research.

These were designed to operationalize the attributes so they could be clearly observed and scored in the field. Table 3 presents the operational definition for each.

**Table 3. Interpreter attributes observed in the study, their definitions, and operationalization.**

<b>Interpreter attribute</b>	<b>Definition</b>	<b>Scoring</b>
Professional appearance	The extent to which the interpreter appears properly dressed and groomed.	0 = Interpreter appears disheveled or unkempt and is not professionally dressed 1 = Interpreter appears well-groomed and is professionally dressed
Comfort of the interpreter (Moscardo 1999, Ward and Wilkinson 2006, Lewis 2008)	Degree to which the interpreter presenting the program seems comfortable with the audience and capable of successfully presenting the program without apparent signs of nervousness or self-doubt.	1 = Interpreter seems scared, nervous, or unable to lead the program 2 = Interpreter seems nervous and struggles with much of the program 3 = Interpreter seems comfortable, but might become uncomfortable at times 4 = Interpreter is not nervous and handles the program with ease

Responsiveness (Jacobson 1999, Knudson et al. 2003, Lewis, 2008)	The extent to which the interpreter interacts with the audience, collects information about their interests and backgrounds, and responds to their specific questions and requests or non-verbal cues.	NA = Not able to observe (e.g., large programs in dark theatres) 1 = Interpreter is aloof or averse to the visitors' presence 2 = Interpreter is somewhat responsive to visitors' questions/body language 3 = Interpreter was very responsive to the audience
Inequity (Ham and Weiler 2002)	The presence of unequal attention devoted to certain attendees and not others through greater interaction or attentiveness.	1 = Interpreter did not pay equal attention to all audience members. 0 = No inequity issues.
Humor quality (Regnier et al. 1992, Ham and Weiler 2002, Knapp and Yang 2002)	How funny is the interpreter overall? Does the audience react positively to the interpreter's use of humor and seem to enjoy it?	1 = Not funny at all 2 = A little funny 3 = Moderately funny 4 = Hilarious
Humor quantity	The extent to which the interpreter attempts to use humor, sarcasm, or jokes to share the topic with the visitor, regardless of their success.	1 = Interpreter attempts no humor throughout the presentation 2 = Interpreter rarely uses humor 3 = Interpreter uses an equal mix of humor and non-humor to convey the message 4 = Interpreter is mostly trying to be humorous 5 = Interpreter uses humor as the primary vehicle to convey their message
Sarcasm	The degree to which the interpreter used sarcasm (the use of mocking, contemptuous, or ironic language or tone) or self-deprecation that was not meant to be serious, as a part of presenting their program.	1 = Not at all 2 = Done to some extent 3 = A central feature of the delivery style
Charisma (Ward and Wilkinson 2006)	A general sense of the overall likeability/charisma of the interpreter, commonly recognized by seemingly genuine interaction with the visitors, including smiling, looking people in the eye, and having an overall appealing presence.	1 = Not likeable/found interpreter irritating 2 = Somewhat off-putting 3 = Neither liked or disliked interpreter 4 = More or less liked interpreter 5 = Found interpreter very likeable/charismatic

<p>Sincerity (Ham 2009)</p>	<p>The degree to which the interpreter seems genuinely invested in the messages he or she is communicating, as opposed to reciting information, and seems sincere in the emotional connection they may exude to the message and/or the resource. In other words, the extent to which the interpretation was delivered through authentic emotive communication.</p>	<p>1 = Interpreter seemed to only be going through the motions, with no real emotional connection or sincerity  2 = Interpreter seemed somewhat connected through the words they used, though their mannerisms or intonation didn't corroborate their words.  3 = Interpreter seemed mostly sincere with authentic emotive communication for most of the program  4 = Communication was clearly sincere and authentic throughout the program, as evidenced by words, gestures, intonation, or other mannerisms</p>
<p>Passion (Moscardo 1999, Beck and Cable 2002, Ham and Weiler 2002)</p>	<p>The interpreter's apparent level of enthusiasm for the material, as opposed to a bored or apathetic attitude toward it. The overall vigor with which the material is presented.</p>	<p>1 = Interpreter seems completely detached/disinterested from the program  2 = Low levels of passions  3 = Interpreter shows moderate levels or sporadic instances of passion  4 = Pretty high levels of passion overall  5 = Interpreter seems extremely passionate about the program</p>
<p>Personal sharing (Jacobson 1999)</p>	<p>The degree to which the interpreter shared personal insights or experiences, answered questions about themselves for the audience, or provided their own opinion on topics or events relevant to the program.</p>	<p>1 = Interpreter did not share any personal information about themselves with the audience  2 = Interpreter shared minimal personal information or viewpoints  3 = Interpreter shared a large amount of personal information and perspective  4 = Interpreter's personal life/point of view is explicitly the central focus of the experience (used themselves as the primary framework for the program)</p>
<p>Apparent knowledge (Ham and Weiler 2002, Ward and Wilkinson 2006, Lewis 2008)</p>	<p>The degree to which the interpreter appears to know the information involved in the program, the answers to visitors questions, and has local knowledge of the area and its resources.</p>	<p>1 = Interpreter seems not at all knowledgeable (unsure of facts or has a hard time recalling the information intended for the program)  2 = Interpreter seems somewhat knowledgeable, but appears to forget a few things or leave out important details  3 = Interpreter appears more or less knowledgeable without any major hiccups or uncertainty throughout the program.  4 = Interpreter's presentation of facts and information during the program is flawless</p>

Audibility	The extent to which the interpreter can clearly be heard and understood by the audience.	1 = Interpreter could not be heard by the audience during the majority of the program 2 = Interpreter could be clearly heard for the majority of the program, but wasn't audible during some parts 3 = Interpreter could be clearly heard throughout the entire program
Eloquence (Lewis 2008)	The extent to which the interpreter spoke clearly and articulately, and did not mumble or frequently use filler words such as "um" or "like."	1 = Interpreter stumbled on their speech throughout their entire program and was hard to understand 2 = Interpreter had some minor issues with mumbling or unclear speech 3 = Interpreter had no such issues during the program 4 = Interpreter was exceptionally eloquent
Impatience	Did the interpreter show any explicit impatience toward audience members?	1 = Interpreter was explicitly impatient with the audience 0 = No issues noted
Formality	The degree to which the interpreter was very formal and official vs. casual and laid back about the presentation.	1 = Interpreter was extremely casual 2 = More casual than formal 3 = Interpreter was neither explicitly casual nor formal 4 = More formal than casual 5 = Interpreter was entirely formal
False assumption of the audience	At any point during the program, did the interpreter make assumptions of the audience's attitudes or knowledge that could have easily been false?	1 = No problem with false assumptions 2 = Some minor false assumptions that likely did not detract from the quality of the program 3 = Obvious false assumptions that made the experience less enjoyable or meaningful
Character acting	The degree to which role playing or character acting is incorporated into the program, either to add authenticity or to help tell a story.	0 = Interpreter does no character role playing during the program, he/she is simply leading the program 1 = Interpreter acts like one or more characters during parts of the program 2 = Interpreter is in full costume or does not break character at any point during the program
Primary identity (Ham 2002, Ham and Weiler 2002, Knapp and Yang 2002, Larsen 2003, Wallace and Gaudry 2005)	Friend: outwardly friendly, casual, approachable, mingles informally	1 = primary identity; 0 = not
	Authority figure: emphasizes own role as a park ranger and focuses on rules, regulations, and/or authority to communicate	1 = primary identity; 0 = not
	Walking encyclopedia: Focused on conveying a large volume of facts	1 = primary identity; 0 = not

Questionable information	Obvious factual inaccuracy (incorrect or inaccurate information) or false attribution (unfounded claims about others, e.g., “the native people were happy to hand over their land so a National Park could be formed.”)	1 = present 0 = not present
Bias	Did the interpreter share any apparent bias or strong opinion with potential effects on relationships with audience members?	1 = yes 0 = no

We also recorded unexpected negative circumstances like sudden severe weather, major distractions, nuisances caused by visitors, and road noise or other obtrusions that made hearing the interpreter difficult. Unexpected positive circumstances like animal sightings or special events that were unknown to the ranger were also recorded, though rarely seen. These were recorded simply as having occurred or not (in “yes or no” fashion).

Where appropriate, Likert-type scales were developed to measure each of the attributes observed during a program. The goal was to use as large a scale as feasible for each variable, but existing definitions from the literature and results of pilot-testing limited most scales to four or fewer points (i.e. present, somewhat present, not present). Pilot testing revealed that the middle-points on larger scales for many variables were not easily interpretable in a consistent manner by the research team. As a result, the scales are variable from item to item to maximize the range while maintaining inter-rater reliability. Binary scores were used in cases where the most appropriate measure was to indicate presence or absence. Research also kept qualitative notes throughout the field season to record examples of key attributes in action. The field data collection sheets are included as Appendix A. Additional attributes associated

with the content and flow of the program itself were also collected but are not the subject of this thesis.

### ***Sampling***

For the purposes of this study, individual programs were the unit of analysis. Programs were selected primarily based on their time and location in attempts to maximize the number of programs observed at each park unit. We also aimed to maximize variability in the types of programs (both with regard to subject matter and types of delivery -- guided walks vs. campfire programs vs. hands-on activities, etc.). Regular programs were selected over children's programs whenever possible, as adult respondents were the targets of visitor surveys. Throughout the research, the same procedure was followed for observing all programs. Upon arrival at the program site, a brief interview was conducted with the interpreter. Interview questions included a battery of intended programmatic outcomes, questions about program development, and others about the preparedness and level of enthusiasm of the interpreter. The interviews also collected basic demographic and background information about the interpreter, which included age, gender, and interpretation experience. Basic information about the program itself was recorded by the observer, including time, location, type, topic focus, and size and age breakdown of audience (see Appendix A for the interview data collection sheet).

Prior to each program, a brief interview was conducted with the interpreter to gather information regarding their background, experience, and intentions for the program. We also asked each interpreter to make a brief announcement at the beginning of each program so that visitors were aware of our presence. This did not happen consistently. When it did not, an

announcement was made either by the interpreter or the researcher at the end of the program. Visitors above the age of 15 were asked to remain after the program to complete a short survey. Throughout the program, researchers maintained an unobtrusive presence within the group, acting simply as another member of the audience. Programs were followed closely by the researchers and observed in a way that would inform completion of a program assessment immediately after the program. This made it possible to rate all variables without obstructing the flow of the program or the performance of the interpreter. Observation sheets were filled out by the researchers immediately following each program to insure maximum accuracy.

At the end of each program, surveys were distributed to all willing participants over the age of fifteen. These surveys gathered basic demographic information about the visitor, their experiences in the park, the size and age ratio of their group, and the impact that the program had on them. Retrospective questions within the surveys were geared towards assessing each of the visitor outcomes discussed above (see Appendix A). Visitors were asked to score their overall satisfaction based on the program they had just attended on a scale from 0 to 10, with 0 being “terrible” and 10 being “excellent.” These surveys were distributed and collected by the researcher on site.

### ***Pilot-Testing***

Extensive pilot testing aided in instrument development and refinement and enhanced the reliability of measurement across the research team. We observed video recorded interpretive tours from an undergraduate interpretation class at Virginia Tech to analyze techniques and begin refining consistent measurement among field observers. These programs

were used to establish consistent measurement of each relevant attribute. Programs were viewed repeatedly and scores were compared among team members on each attribute. These exercises were also used to refine Likert-type scales for scoring several variables, in addition to binary and written scores.

From this testing, a preliminary assessment sheet was refined to be used while in the field. These assessment sheets were further pilot-tested collectively by the research team at Great Smoky Mountains National Park in May of 2011, where the team observed three live interpretive programs. Extensive discussion allowed us to further refine collective definitions and observation techniques for each of the attributes under study.

***Dependent variables: Outcomes***

Dependent variables represent measurements of the outcomes of interest. The outcome variables in the study were comprised of retrospective assessments provided by program attendees on surveys administered immediately following their programs. While interpretation may produce multiple outcomes, we focused primarily on visitor satisfaction and shifts in knowledge, attitudes, and behavioral intentions relevant to the park experience.

Overall satisfaction with the program was measured on a scale from 0 to 10, with 0=Terrible and 10=Excellent. An additional battery of survey items provided response prompts for the following question: “To what degree did the program you just attended influence any of the following for you?” Response categories were comprised of a 5-point Likert-type scale, with answer choices: Not at all (1), A little (2), Somewhat (3), A moderate amount (4), and A great deal (5). The survey items included:

- Made me think deeply
- Made me reflect on my own life
- Enhanced my appreciation for this park
- Enhanced my appreciation for the National Park Service
- Made me more likely to avoid harming park resources
- Increased my knowledge about the program's topic
- Made my visit to this park more enjoyable
- Made my visit to this park more meaningful
- Changed the way I will behave while I'm in this park
- Changed the way I will behave after I leave this park
- Made me want to tell others about what I learned
- Made me care more about this park's resources
- Made me care more about protecting places like this

These items were developed based on key literature (e.g. Tilden 1957, Ham 1992, Moscardo 1999, Ward and Wilkinson 2006) and extensive input from NPS staff. This input included interviews and focus groups with the National Education Council of the NPS; a focus group and associated surveys conducted with NPS interpreters at the NAI National Workshop in Las Vegas, November 2010; and two surveys conducted in 2010 and 2011 with NPS superintendents and supervisors of interpretation, respectively (see Stern and Powell 2011).

### ***Controls***

Our original research design also included administering shorter pre-experience surveys at different, but similar, programs across the parks in our sample. These surveys contained two batteries of survey items that could be compared to the post-experience surveys to create a control group against which to compare outcomes. Unfortunately, an insufficient number of these surveys were administered at most parks to create a reliable control group. As a result, we did not include these data in further analyses.

### ***Inter-rater Reliability***

Throughout the duration of all field work, observers would occasionally attend programs together, in order to ensure continued reliability and consistency in scoring each variable. Regular check-ins were also completed between team members to double-check that observation techniques were consistent, to clarify questions about scoring certain variables, and to add variables that were deemed relevant to the research. No new variables were added after the first week of fieldwork.

Upon the completion of the field research, reliability between observers was tested on all attributes using a One-Way ANOVA. Statistically significant differences were observed between observers for some variables. Thorough exploration was done by the team to determine if these differences could be attributed to systematic differences in observation techniques or to the unique parks and programs attended by each observer. In several instances, one or more of the researchers appeared to have scored variables somewhat differently from one another despite all efforts to ensure reliability throughout the fieldwork. These variables included comfort of the interpreter, responsiveness, passion, apparent knowledge, and sincerity. Following discussion amongst the research team and data exploration of outliers, consensus scale definitions were agreed upon by all team members. Individual program notes and scores relevant to the variables in question were revisited by team members and adjustments were made to systematically biased scores to reflect consensus definitions and ensure consistency. In most cases, one researcher systematically scored a particular variable higher or lower than the other three.

### **Data Entry and Cleaning**

During the course of the research, 376 programs were observed and 3603 surveys were collected. A subset of 3090 surveys was used for our final data analysis. Programs available for observation and visitors in attendance at these programs varied greatly from park to park. The table below (Table 4) displays the total number of programs observed by the research team in each park, as well as the total number of surveys collected in each park unit.

**Table 4. Programs observed and total number of surveys collected.**

<b>Park unit</b>	<b>Programs attempted</b>	<b>Programs observed</b>	<b>Surveys collected</b>
Aztec Ruins National Monument	4	2	4
Badlands National Park	22	19	157
Bryce Canyon National Park	12	12	133
Chaco Culture National Historical Park	9	8	85
Ford's Theater National Historic Site	20	20	519
Fort McHenry National Monument and Historic Shrine	23	14	133
Gettysburg National Military Park	26	21	206
Grand Canyon National Park	30	30	384
Great Smoky Mountains National Park	19	14	96
Harpers Ferry National Historical Park	21	15	100
Independence National Historical Park	36	22	156
Jefferson National Expansion Memorial	22	16	146
Jewel Cave National Monument	20	20	190
Lincoln Home National Historic Site	18	14	89
Manassas National Battlefield Park	20	17	88
Mesa Verde National Park	14	14	301
Mount Rushmore National Memorial	23	19	171
National Mall	47	22	65
Navajo National Monument	8	3	23
Point Reyes National Seashore	12	9	34
San Francisco Maritime National Historical Park	20	16	69
Ulysses S. Grant National Historic Site	15	9	40
Wind Cave National Park	18	18	215
Yosemite National Park	29	22	199
<b>Totals</b>	<b>488</b>	<b>376</b>	<b>3603</b>

Post-program surveys and program audits were coded and entered into Microsoft Access Database and Microsoft Excel to facilitate data entry. Data were then transferred to SPSS for screening and analysis. Data from visitor surveys were screened for missing values and any cases missing more than 50% of survey item responses. A total of 117 cases were removed as a result. Data were then screened for univariate and multivariate outliers following Tabachnick & Fidell (2007) using Mahalanobis Distance (MAH) and studentized deleted residuals (SDRESID). A total of 58 cases were removed for exceeding  $\pm 3$  S.D. or the criterion Mahalanobis Distance value. The final number of individual surveys used for our analyses was  $N = 3428$ .

Certain interpreter attributes exhibited extremely low variability. These attributes were removed from further analysis. For example, only 7 interpreters received a less than perfect score for “professional appearance” out of the 376 programs that were scored. This attribute would have little bearing on predicting the success or failure of a program. Character acting (the interpreter performing as a period figure or person other than themselves), unexpected positive circumstances (an unplanned or fortuitous event that added greatly to the enjoyment or excitement of a program), and special audience needs (visitors who needed special assistance or accommodations during a program) were also removed from further analysis because of how rarely they were observed.

Exploratory Factor Analyses were run on both independent and dependent variables. EFA was used to see which factors were associated with each other and could therefore be reduced into indexes for use in subsequent analyses. These analyses resulted in two factors

representing interpreter characteristics and two factors representing visitor outcomes (see Results section).

With interpreter inputs and visitor outcomes defined, correlations were run to test for linear relationships between independent and dependent variables. These were used to inform the degree to which each input was directly related to visitor satisfaction, behavioral changes, and enhanced experience and appreciation. T-tests were also run to determine differences in the means of outcomes based on interpreters' intended outcomes, interpreter identity, interpreter sex, and program focus. Regression analyses were run on all interpreter inputs to determine which combinations of attributes were most predictive of visitor outcomes.

Qualitative descriptions of each interpreter input were developed from field notes. These are used to clearly illustrate how each variable looks in the field, with examples of both high and low scores on the variable during interpretive programs. These are provided to lend clarity to how each variable was observed and scored.

## Results

### *Sample description*

Because our research focuses on the program as the unit of analysis, we had to determine how many completed surveys within a particular program would serve as a viable reflection of the quality of that program and its impacts on visitors. Prior research suggests that programs with particularly small numbers of attendees may be inherently different than programs with larger numbers of attendees (McManus 1987, McManus 1988, Moscardo 1999, Forist 2003). In particular, programs with fewer than five attendees may have a high likelihood of serving only a single cohesive group (e.g., a single family). Meanwhile, programs with five or more have a higher likelihood of being comprised of multiple groups. Moreover, a greater number of observations of visitor responses enhances the reliability of the research findings. Due to small numbers of respondents, we removed programs with fewer than 5 attendees from the sample. This reduced the total number of valid visitor surveys from N = 3428 to N = 3090. For groups with five or more attendees, we included all groups with ten or more respondents to the surveys. We only included those with less than 10 respondents if the number of respondents reflected at least half of the eligible respondents at the program. We employed these rules to enhance the reliability of visitors' responses for each program. Table 5 shows the results of this data cleaning, and the final number of programs that were used for analysis.

**Table 5. Total numbers of programs and surveys used for predictive analyses, relating program and interpreter attributes to visitor outcomes.**

Park unit	Programs	Valid surveys
Aztec Ruins National Monument	0	0
Badlands National Park	13	115

Bryce Canyon National Park	12	127
Chaco Culture National Historical Park	7	70
Ford's Theater National Historic Site	18	436
Fort McHenry National Monument and Historic Shrine	11	113
Gettysburg National Military Park	17	184
Grand Canyon National Park	27	361
Great Smoky Mountains National Park	11	85
Harpers Ferry National Historical Park	11	75
Independence National Historical Park	15	117
Jefferson National Expansion Memorial	12	129
Jewel Cave National Monument	18	177
Lincoln Home National Historic Site	10	72
Manassas National Battlefield Park	8	62
Mesa Verde National Park	14	290
Mount Rushmore National Memorial	9	101
National Mall	8	34
Navajo National Monument	2	20
Point Reyes National Seashore	3	18
San Francisco Maritime National Historical Park	11	58
Ulysses S. Grant National Historic Site	6	34
Wind Cave National Park	13	175
Yosemite National Park	16	167
<b>Totals</b>	<b>272</b>	<b>3,090</b>

### ***Qualitative Descriptions***

Notes were kept by each member of the research team during all observed programs.

Table 6 provides examples of each of the key interpreter attributes transcribed from notes taken in the field. These include examples of the attributes' presence and absence.

**Table 6. Qualitative field notes describing interpreter attributes observed during programs.**

Variables	Examples
Comfort of the Interpreter	<p>HIGH: The ranger used a very conversational tone when interacting with the audience. At each stop he would sit down on a fence post or lean against a sign while continuing his story. He asked visitors to stop him with questions and to suggest answers to various questions he posed. He asked the audience to stop him if they needed anything and never seemed to get distracted from his intended performance.</p> <p>- Despite numerous interruptions and difficult questions from visitors, the ranger handled each situation with ease and was not swayed from presenting their program. He encouraged visitors to challenge him and take part in the “experience,” rather than just sitting back and listening to him talk.</p> <p>LOW: Ranger was clearly unnerved by a large crowd consisting of a mix of adults and very distracted children who were bored by the historical topic of the talk. He mentioned that Civil War history was not his area of expertise and struggled to remember certain numbers and facts. He was unable to answer most visitors’ questions and did not maintain the large group very well when moving from location to location. He tried several times to stop visitors from leaving the program and looked clearly saddened each time more people left.</p> <p>- The ranger seemed very nervous and was visibly shaking, had to pause several times to collect thoughts and recall what they intended to say next. They apologized frequently for forgetting what they had scripted and relied on “um, yeah, and like” to fill in the gaps.</p>
Apparent Knowledge	<p>HIGH: This volunteer knew more about plants than just about anyone I've ever met. Not only did she know facts and scientific details about every plant, but also stories about their connection to humans and how people have used them in the past. She answered every single question posed by visitors, including Latin names, habitat ranges, and various vascular functions. She never seemed like she had to think before answering and was confident in every response she gave.</p> <p>LOW: The ranger attempted to tell us the name of the man who designed the memorial, the date it was commissioned, and who funded its construction, but could not remember any of these things. He referred to his notes continually throughout the program and sometimes spent an extended period of time looking through them to try to recall the fact he had intended to give. When visitors asked questions, he would again refer to his notes and generally still could not provide an answer.</p> <p>- Ranger mentioned halfway through the program that it was her first time giving it, which was evidenced by her difficulty recalling facts/figures, her regular use of notes, and long walks between stops without talking to visitors at all (while she reviewed her notes).</p>
Eloquence	<p>HIGH: Each story told by the interpreter was clearly illustrated through a strong vocabulary and a purposeful use of words. Pauses were only used when necessary for effect and the ranger never seemed unsure of what to say next. Their manner of speaking was concise and to the point, but did not feel rehearsed or overly scripted.</p>

	<p>LOW: Ranger said “like” often and used “um” as filler every time he paused or tried to think of an answer. He constantly used the phrase “y’know,” followed by a long pause at times when the audience was completely unsure of what he was talking about. He mumbled at times when he didn’t seem confident in what he was saying. This left the visitors feeling very confused.</p>
Passion	<p>HIGH: The ranger explicitly told us that he was excited to share information with us about the natural resources found within the park. He said things like “let me tell you why I love this plant so much” and “I bet you can see why this is such a cool place.” He had the audience look at things and feel them, tell the group what they liked best about it, and share their own reasons why the park was so special to them.</p> <p>- This ranger told us why the park makes him feel inspired, what he loves most about it, and makes him come alive. He had us reflect on our own feelings about the place by sharing stories. He jumped from rock to rock with an obvious excitement in his step and couldn’t wait to share his next story. When the topic called for a more somber and reflective tone he slowed down, removed his hat, and reminded us why we should care about this place.</p> <p>LOW: This ranger had a very calm, quiet demeanor that she used to convey facts about the battles that unfolded in the park. Her tone of voice and slow pace made it sound like she didn’t really care what she was saying to the audience. At one point she said, “the Civil War isn’t really my area of expertise, but it’s worth knowing something about.” Her connection to the topic and concern for preserving the place were obviously low. She would point out things along the way and say “I think this is where ____ happened” or “some people find this interesting.”</p>
Charisma	<p>HIGH: Ranger was kind and smiling. Imagine sweet grandmother figure telling stories about history and her childhood. Audience leaned in to hear what she had to say and observe what she was doing. Both the interpreter and audience had smiles on their faces throughout the program.</p> <p>- The ranger had a deep laugh that put smiles on the faces of visitors. He used friendly, casual banter throughout the program to keep visitors engaged and to inquire about their specific interests and hobbies. Visitors seemed to enjoy walking around with the ranger and hearing the information he had to share.</p> <p>LOW: Ranger had a very abrupt manner of speaking to visitors and sounded annoyed to have them on the program. When some questions were asked, he ignored them entirely and hurried along with the program. He made no effort to engage the audience or carry on a conversation, rather he seemed focused on presenting what he had prepared and getting away from visitors as soon as he was finished.</p>
Sincerity	<p>HIGH: While leading a tour of a war memorial, this ranger maintained a very solemn and respectful demeanor. He told us about the hard work, sacrifice, and heartache of people at home and abroad that made the war effort possible. Upon entering the memorial, he removed his hat and stood silently for a moment to take it all in. As he talked about each feature of the memorial he would touch it gently and slowly shake his head. His emotional connection to both the resource and the topic were clear.</p> <p>LOW: This ranger spoke in a very monotone, droning manner. At each stop,</p>

	<p>she listed several facts and then moved on to the next stop. She didn't wait for visitors to observe or enjoy the various resources and seemed to have no interest in looking at it herself. She seemed bored with the experience and made us feel like there was nothing really special about the place. Her cold delivery of facts and numbers about the battle that took place there made her seem almost callous to the topic.</p>
Inequity	<p>PRESENCE: At one point, the ranger entered a small room in the ruins with a big step down, and one elderly lady didn't want to try entering. She had to wait outside the room while he continued the program for another twenty minutes--only five of which actually had to do with the room we were in. The lady left with her husband after we exited the room.</p>
	<p>ABSENCE: The audience consisted of a wide mix of children, families, and older adults. Each time the ranger told a story or told us how something works, he would say "those of you who have kids know that" or "I bet you guys like to play with toys too." No matter what the topic was, he made sure to connect it directly to someone in the audience. When props were passed around, he checked to make sure that everyone got the chance to see it. He encouraged the group to stand so that shorter members were in the front and everyone could see what we were looking at.</p>
Humor Quality	<p>HIGH: The ranger poked fun at the notorious love life of a Civil War general to bring some welcome humor into an otherwise serious talk. He told us about pranks that soldiers would play on one another and had us laughing. This helped the program not only to avoid being far too sad/somber, but also connected us with the fact that these were regular people just like us.</p>
	<p>LOW: The ranger tried to use corny jokes and silly metaphors throughout the program to get laughs out of the audience. For the most part, the audience did not seem to find these funny. He relied so heavily on these jokes that the rest of his program was largely devoid of worthwhile information. The audience seemed tired and uninterested by the end of the program, but he kept cracking bad jokes anyway.</p>
Personal Sharing	<p>HIGH: The ranger shared songs he had personally written about Tuolumne Meadows, Yosemite, and the bird that was the topic of the talk. He told us about how Yosemite had a special place in his heart and how it had played a role in shaping his life.</p> <p>- This interpreter grew up not far from where the program took place and knew a great deal about the people who had lived there. She knew some of the people personally and shared several stories from her own childhood. She told us how she had gotten involved volunteering in the park and why it was worth it to her to donate her time.</p>
	<p>LOW: The ranger began the program without introducing himself to the audience. During the program he did not share any personal information, opinions, or connections to his stories. He shared a number of facts about the buildings we passed and told us stories about the people who lived there. We knew nothing about why he worked in the park or why he bothered telling us about these places.</p>
Formality	<p>HIGH: The ranger referred often to his position as a park ranger (his authority) and told visitors that it was his responsibility to make sure that visitors were safe and accounted for. He reminded the group that he wanted us to have a good time, but that our safety and understanding of the rules came first. He used his authority to guide visitors through a very crowded urban park, without getting separated or losing the flow of the</p>

	<p>program.</p> <p>LOW: Because only two other visitors showed up to the program, the ranger spoke directly to them in a very conversational tone. He asked them what they were interested in, what they would like to do on the program, and told them to stop him whenever they wanted to ask a question. In this way, the talk was almost completely catered to the interests of the visitors and they felt very comfortable even in such a small group.</p> <p>- The ranger remained seated through much of the program and did not seem to have any clear plan for the program. He allowed visitors to ask questions, but after answering each question did not provide any more content. He simply sat and waited for visitors to ask another question. Advertisement for this program indicated it would be a talk given by a ranger, but he treated it much more like an informal question and answer session, which caused many members of the audience to leave early.</p>
Sarcasm	<p>HIGH: Ranger kept comparing her general lack of skill/knowledge on the subject to the native people who were so talented in these areas, to illustrate just how expert these early people were at reading and understanding the land. She poked fun at herself for being “outdoors illiterate” and “as useful on a deserted island as a rock,” but kept the audience laughing and entertained.</p> <p>- The interpreter used a very negative type of sarcasm throughout the program that gave it a very pessimistic undertone. He kept referring to the “average visitor” and their general lack of knowledge about park rules, funding, or the reasons behind preservation. He would say things such as “I’m sure <i>you</i> guys would never do that” and “this group is smarter than that though, <i>right?</i>” It seemed his intention was to illustrate why it’s important to understand these things, but it came across as an implication of how dumb the audience members on his program were.</p>
Bias with Negative Impact	<p>PRESENCE: During a talk about global warming, the ranger spent much of the time talking about what the government was/wasn’t doing (including a few potentially politically inflammatory statements), at which point several visitors walked away from the program. He remarked that it was the fault of big industry that the environment was in such bad shape and that it would take strong government regulation to reverse the trends. Most of these opinions were presented as if they were facts.</p> <p>- This ranger tended to deliver his own opinions as if they were facts. He also tended to assume that audience members agreed with his point of view and seemed to offend a couple of visitors from the Deep South. He made comments about the North being the “good guys” and the South being the “enemy.” He had very strong opinions about who was/wasn’t a hero here, how Hollywood has dramatized the events, and about who deserves to win a Medal of Honor (now and in the past). This also seemed to bother a couple of people. The Gettysburg Bike Week was in full swing, which made it hard to hear and he was clearly annoyed/spoke badly about them, even though there were bikers on the program. The contrast between his generally great personality/performance and his patience/tact with handling other aspects of the program were surprising. He also closed with a very conservative, patriotic message and a “god bless you, God bless America” that seemed questionably religious.</p>

False Attribution	<p>PRESENCE: This ranger told the audience that with the exception of a few families, “people were glad that the park had been created here.” Without any substantiation, she claimed that residents who had to be removed when the park was created were fairly compensated and had a better standard of living after moving. There was no evidence provided to support this claim.</p>
	<p>ABSENCE: This ranger did an exceptional job of portraying all sides of the history here and speaking of soldiers and officers on both sides of the war as people just like you and me. Both Union and Confederate soldiers were included in the stories, their sides were portrayed without opinion or bias, and neither was given the image of being the “good guy” or the “bad guy” in the battles. He did not speak disparagingly about either side and did not place blame for the Civil War on any one group.</p>
False Assumption of Audience	<p>PRESENCE: During the program, the ranger regularly referred to names and dates very specific to events during the Civil War. These were used without any further explanation and assumed that the audience already had a fairly thorough knowledge of the Civil War. There was a small group of war “buffs” who seemed to follow and enjoy the program, but most of the rest of the audience seemed somewhat lost and disconnected without this extra knowledge.</p>

### ***Exploratory Factor Analysis***

Exploratory factor analyses and reliability analyses on program observations revealed the presence of two latent factors. We have named the two resulting interpreter attributes factors *Confidence* and *Authentic emotion and charisma*. The items making up each factor are included in Table 7.

We next investigated whether the visitor outcome variables consistently varied together and potentially formed factors. Exploratory factor analyses and reliability analyses revealed the presence of two latent factors. We also ran confirmatory factor analysis, which is a form of structural equation modeling, to further refine the structure of these two factors. The resulting model confirmed the two factors while also providing a more parsimonious solution. We labeled the resulting factors *Visitor Experience and Appreciation* and *Behavioral Change*. These

factors form two of the three outcomes employed in this study. The third reflects attendees' satisfaction with the programs they just attended. These outcome factors are presented in Table 7.

**Table 7. Indexes developed through exploratory and confirmatory factor analyses.**

<b>PREDICTOR VARIABLE INDEXES</b>	
<b><i>Interpreter attribute: Confidence</i></b> (Cronbach's alpha = 0.70)	
<ul style="list-style-type: none"> <li>• Comfort of the Interpreter</li> <li>• Apparent knowledge</li> <li>• Eloquence</li> </ul>	
<b><i>Interpreter attribute: Authentic emotion and charisma</i></b> (Cronbach's alpha = 0.85)	
<ul style="list-style-type: none"> <li>• Passion</li> <li>• Charisma</li> <li>• Sincerity</li> </ul>	
<b>OUTCOME INDEXES</b>	
<b><i>Program outcome: Visitor Experience and Appreciation</i></b> (Cronbach's alpha = 0.89)	
To what extent did the program you just attended influence any of the following for you?	
<ul style="list-style-type: none"> <li>• Made my visit to this park more enjoyable</li> <li>• Made my visit to this park more meaningful</li> <li>• Enhanced my appreciation for this park</li> <li>• Increased my knowledge about the program's topic</li> <li>• Enhanced my appreciation for the National Park Service</li> </ul>	
<b><i>Program outcome: Behavioral change</i></b> (Cronbach's alpha = 0.94)	
To what extent did the program you just attended influence any of the following for you?	
<ul style="list-style-type: none"> <li>• Changed the way I will behave while I'm in this park</li> <li>• Changed the way I will behave after I leave this park</li> </ul>	

***Means and Frequencies***

Table 8 below displays the mean scores and frequencies of ordinal variables describing interpreter characteristics. For each variable, higher scores reflect a greater reflection of the attribute. Table 9 displays the frequencies with which binary and categorical variables were observed in the study.

**Table 8. Descriptive statistics of interpreter delivery styles (ordinal variables).**

Variable (Scale)	Mean	St. Dev.	% of programs with each score
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			1	2	3	4	5
<b>Confidence index (1 to 4)</b>	3.26	0.49					
• Comfort of the interpreter (1 to 4)	3.47	0.61	0.3	5.3	41.7	52.7	
• Apparent knowledge (1 to 4)	3.39	0.62	0.0	7.5	46.1	46.4	
• Eloquence (1 to 4)	2.93	0.62	0.5	21.0	63.3	15.2	
<b>Authentic emotion and charisma index (1 to 5)</b>	3.52	0.82					
• Passion (1 to 5)	3.18	1.00	3.5	22.7	35.8	28.3	9.6
• Charisma (1 to 5)	3.76	0.84	0.0	7.5	27.7	45.9	18.9
• Sincerity (1 to 4)	2.89	0.75	2.7	26.6	50.3	20.5	
Responsiveness (1 to 3) <sup>a</sup>	2.81	0.42	1.2	17.0	81.9		
Humor quality (1 to 4)	2.03	0.70	21.7	55.3	21.4	1.6	
Humor quantity (1 to 5)	2.03	0.69	18.7	62.1	16.5	2.4	0.3
Personal sharing (1 to 4)	1.65	0.72	48.3	39.1	11.8	0.8	
Audibility (1 to 3)	2.85	0.37	0.5	13.6	85.9		
Formality (1 to 5)	3.20	0.83	1.1	17.3	48.1	27.9	5.6
Sarcasm (1 to 3)	1.20	0.44	81.4	17.0	1.6		
False assumptions of audience (1 to 3)	1.15	0.38	85.6	13.6	0.8		

<sup>a</sup> Responsiveness was not observable in every case. For this variable, n = 342.

**Table 9. Descriptive statistics of interpreter delivery styles (categorical variables).**

<b>Interpreter delivery style</b>	<b>% of programs in which delivery style occurred</b>
Professional appearance of the interpreter	98.4
Inequitable treatment of audience	2.9
Impatience	1.6
Primary identity: Friend	20.8
Primary identity: Authority	4.3
Primary identity: Walking encyclopedia	75.0
Character acting: partial	2.5
Character acting: complete	2.2
Interpreter bias	4.0
Questionable information	9.0

All descriptive statistics for outcomes variables were run following removal of statistical outliers. Table 10 shows attendees' reported levels of *satisfaction* with the programs they had just attended. The mean *satisfaction* score was 8.98.<sup>1</sup>

**Table 10. Respondents' levels of satisfaction with the program they had just attended (0 to 10 scale).**

Satisfaction (0 to 10 scale)	< 5	5	6	7	8	9	10
Percent of respondents	0.0%	1.5%	2.8%	8.2%	17.7%	22.8%	47.0%

The *Behavioral change* and *Visitor experience and appreciation* indexes were both measured on a scale from 1 to 5. The mean of the *Behavioral change* index score was 2.96 with a standard deviation of 1.47. Forty-three percent of individuals scored above the midpoint (3) on the scale. The mean of the *Visitor experience and appreciation* index was 4.43 with a standard deviation of 0.65. Ninety-five percent of respondents scored above the midpoint (3) on the scale. The means and frequencies of each of the individual items associated with each index are presented in Table 11. While the *Visitor experience and appreciation* items are particularly high on the scale, items associated with *Behavioral change* were more evenly distributed.

**Table 11. Means and frequencies for items comprising the *Behavioral change* and *Visitor experience and appreciation* indexes.**

Variable (Scale)	Mean	St. Dev.	% of respondents selecting each				
			1	2	3	4	5
<b><i>Behavioral change</i> (1 to 5)</b>	2.96	1.47					
• Changed the way I will behave while I'm in this park (1 to 5)	2.97	1.52	28.9	8.4	21.4	19.2	22.2
• Changed the way I will behave after I	2.95	1.49	27.6	10.7	21.4	19.7	20.5

<sup>1</sup> Prior to removing outliers, that mean was 8.90. Approximately 1% (n = 50) of the over three thousand program attendees that responded to the survey rated their level of satisfaction with the program they had just attended below a 5 on the 0 to 10 scale. The statistical procedures described above indicated that each of these scores below 5 was a statistical outlier. They were thus removed from the sample prior to further analyses.

leave this park (1 to 5)							
<b>Visitor experience and appreciation (1 to 5)</b>	4.43	0.65					
• Made my visit to this park more enjoyable (1 to 5)	4.55	0.70	0.2	1.3	6.7	27.0	64.7
• Made my visit to this park more meaningful (1 to 5)	4.50	0.77	0.2	2.0	8.1	26.4	63.1
• Enhanced my appreciation for this park (1 to 5)	4.38	0.79	0.5	2.1	10.0	33.8	53.5
• Increased my knowledge about the program's topic (1 to 5)	4.46	0.77	0.4	1.9	9.1	28.6	59.9
• Enhanced my appreciation for the National Park Service (1 to 5)	4.27	0.86	1.2	2.4	13.1	34.7	48.7

### Correlations

Correlation tests were run comparing key interpreter attributes with outcome indexes.

Table 12a displays the results of these tests, demonstrating that the Confidence and Authentic Emotion/Charisma indexes were both highly correlated with program outcomes. This sheds some light on the key variables that can consistently predict the most desired program outcomes.

**Table 12a. Correlation between outcome indexes and key interpreter attributes.**

Interpreter Attributes	N	SATISFACTION	VISITOR EXPERIENCE	BEHAVIORAL CHANGE
CONFIDENCE	265	.468**	.265**	.177**
AUTHENTIC EMOTION AND CHARISMA	267	.419**	.299**	.178**
Humor Quality	267	.265**	.218**	.162**
Responsiveness	241	.242**	.252**	.063
Audibility	268	.197**	.138*	.106
False Assumption of Audience	268	-.172**	-.202**	-.090
Level of Experience	196	.160*	.146*	.175*
Humor Quantity	267	.131*	.096	.067
Sarcasm	268	.064	.028	-.108
Formality	268	-.062	-.154*	-.022
Years of Interp. Experience	253	.061	.020	.076
Personal Sharing	267	.044	.056	.108

Bias with Negative Impact	268	.028	.047	-.048
Years with NPS	257	.020	-.019	.051
Years in Park	261	.020	-.009	.041

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### T-tests

T-tests were run on all categorical variables (those attributes simply recorded as having occurred or not). The results are displayed in Table 12b below. These results demonstrate that both impatience and unexpected negative circumstances have a clearly negative impact on visitor satisfaction, while an interpreter who acts as a “friend” can actually increase satisfaction. Very similar impacts are seen on visitor experience and appreciation (with the exception of the “friend” identity). Further, we see that the “walking encyclopedia” identity shows a significantly negative impact on behavioral change intentions for visitors.

**Table 12b. Statistically significant t-tests results, comparing the means of visitor outcome scores for selected categorical variables.**

Observed category	Satisfaction			Visitor experience and appreciation			Behavioral change		
	Mean difference	t-statistic	p-value	Mean difference	t-statistic	p-value	Mean difference	t-statistic	p-value
Impatience	-0.36	-2.2	.031	-0.47	-3.3	.001			
“Friend” identity	0.23	2.3	.023						
“Walking encyclopedia” identity							-0.20	-2.2	.031
Unexpected negative circumstance	-0.29	-2.8	.006	-0.19	-3.6	< .001			

The following categorical variables yielded no statistically significant differences in visitor outcomes: Inequitable treatment of the audience, questionable information, “Authority” identity, unexpected positive circumstances.

T-tests were also run to explore whether outcomes were impacted by interpreters’ attempts to achieve specific intended outcomes. T-tests compared the means of outcome scores between programs where interpreters expressed a particular intended outcome and

where they did not.<sup>2</sup> Provided the following list of visitor outcomes, interpreters were asked to indicate which they were striving for:

- Have an increased knowledge of the program topic
- Have an increased appreciation of the NPS
- Want to learn more about the program topic
- Change their attitude toward something
- Develop and practice a new skill
- Have an increased appreciation for this park
- Have an increased understanding of the park’s resources
- Have an increased concern for a specific topic
- Change a certain behavior in the future
- Be entertained

Interpreters who were surveyed before programs generally selected a suite of intended outcomes, rather than a single intention.

Interpreters who expressed that they intended for visitors to gain appreciation for a park tended to achieve higher levels of Satisfaction (Table 13). Interpreters who strove to change visitor’s attitudes and increase their appreciation for a park and its resources tended to see the most positive gains in Visitor Experience and Appreciation. As for Behavioral Change, interpreters who intended to increase the concern of visitors for a certain topic and change their behavior saw the most gains. The intention to increase visitors’ knowledge during a program saw consistently less positive outcomes as reported by visitors.

**Table 13. Statistically significant t-tests results, comparing the means of visitor outcome scores for interpreters who expressed different intended outcomes for their interpretive programs.\***

Intended outcome	Satisfaction	Visitor experience and	Behavioral change
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<sup>2</sup> ANOVAs were not run because the intended outcomes were not mutually exclusive.

				appreciation					
	Mean difference	t-statistic	p-value	Mean difference	t-statistic	p-value	Mean difference	t-statistic	p-value
Increased knowledge				-0.12	2.4	0.019			
Increase desire to learn	0.20	2.2	0.029	0.14	3.2	0.002			
Change attitude	0.18	2.0	0.048	0.16	4.3	< 0.001			
Increase appreciation for Park	0.22	2.7	0.007	0.09	2.2	0.028			
Increase understanding of resource				0.08	2.1	0.040			
Increase level of concern							0.27	2.2	0.032
Change visitor behavior							0.41	2.7	0.008

\*Only statistically significant results ( $p \leq 0.05$ ) are shared. Blank cells indicate  $p > 0.05$ .

T-tests were also run to compare program outcomes based on other binary variables.

These included the gender of the interpreter, the type of interpreter (park ranger, volunteer, or concessionaire), and the primary identity employed by the interpreter during the program (friend, authority, or walking encyclopedia). The only significant impact on reported visitor satisfaction came in the case of volunteers, who scored lower than park rangers or concessionaires ( $t = -2.10$ ,  $p < 0.05$ ). T-tests were also run, but significant relationships were not found for park setting (urban, urban-proximate, or remote) or program focus (natural, cultural, or a mix of the two).

### **Regression**

Linear step-wise regressions were also run on key interpreter attributes. Satisfaction was best predicted by confidence, authentic emotion and charisma, false assumptions of the audience (negative relationship with satisfaction) and whether the interpreter was a volunteer or not (volunteers generally achieved lower satisfaction scores). Authentic emotion and charisma and false assumptions of the audience were also predictive of visitor experience and appreciation, as were several of the interpreters' chosen intentions associated with provoking

the visitor to want to learn more, change their attitudes, or degree of appreciation. The best predictors of self-reported behavioral intentions were the interpreters' quality of humor, whether they explicitly intended to change their audience's behavior, and their use of sarcasm. Sarcasm was negatively linked to behavior change. That is, more sarcastic interpreters achieved lesser degrees of behavior change.

**Table 14. Significant linear step-wise regression comparing key interpreter attributes with visitor outcomes.**

Predictor	Satisfaction R <sup>2</sup> = 0.292 N= 267		Visitor Experience R <sup>2</sup> = 0.195 N= 261		Behavioral Change R <sup>2</sup> = 0.090 N= 261	
	β	p	B	p	β	p
Confidence	0.354	< 0.001				
Authentic emotion and charisma	0.231	< 0.001	0.232	< 0.001		
False assumption of audience	-0.117	0.029	-0.130	0.027		
Interpreter was a volunteer	-0.111	0.039				
Unexpected negative circumstance			-0.150	0.010		
Interpreters' intention: Want to learn more about the program topic			0.139	0.018		
Interpreters' intention: Have an increased appreciation for the park			0.160	0.008		
Interpreters' intention: Change their attitudes toward something			0.129	0.028		
Interpreters' intention: Change a certain behavior in the future					0.165	0.006
Quality of humor					0.247	< 0.001
Sarcasm					-0.217	0.001

## Discussion

### *Findings and Implications*

The personality, attitudes, and interactions of the interpreter were each significant predictors of visitor outcomes in this study. Visitors respond to the attempts an interpreter makes to connect with them and to connect them with the resource. Specifically, an interpreter who demonstrates that he or she is confident, authentic, eloquent, passionate, charismatic, and sincere in their efforts appears to have a more positive impact on visitors. These elements all relate to what has been described as Tilden's (1957) "priceless ingredient," and while it may be intuitive for some, it may need to be learned and practiced by others.

False assumptions of the audience, high levels of formality, and unexpected negative circumstances generally resulted in less positive outcomes. Interpreters who intended to increase the knowledge of their audience as a primary objective also saw significantly less positive impacts on visitor satisfaction and enhanced experience and appreciation. Attempting simply to impart new knowledge and share facts with visitors does not really equal "interpretation" in its deepest sense. According to Ham (2009), interpretation is much more than just serving as a teacher in a different setting. Tilden (1957) explained that interpreters' success relies on creating relevance and revelation in the minds of visitors. Simply imparting facts that the visitor can memorize will do little to create a meaningful experience for them. While one of the goals of interpretation is to teach visitors something new, it should also be aimed at encouraging visitors to reflect on what they've learned and create their own personal connections to the topic or resource (Ham 2009). Helping visitors to understand and appreciate

a park and its resources so that they can in turn learn more about it can lead to much more meaningful results.

The hiring process may serve as a potential avenue for addressing these issues in NPS interpretation. Typically, hiring within the NPS is based on self-reported knowledge, skills, and abilities (also known as KSAs) of an applicant. This begs the question: which KSAs are the most important in predicting the likely success of a potential interpreter in the NPS? While specific knowledge of the park and its resource will eventually be critical for success, the results of this study suggest that this knowledge by itself, without understanding the interpretive process, is not predictive of positive visitor outcomes. Rather, knowledge may more likely serve as a prerequisite to other factors that more directly relate to visitor outcomes, such as confidence (Jacobson 1999, Finn et al. 2009).

Without a strong knowledge base, it may be difficult for rangers to display confidence and sincerity in their presentations as they struggle to remember facts and dates. Such knowledge may be developed on-site after hiring. Other knowledge and experience, however, might be better predictors of likely success at the hiring stage. For example, potential hires with a basic understanding of the purpose of interpretation and the mission of the NPS may be better oriented to provide programs that address more than just sharing facts. The ability to retain factual information in addition to the ability to tell stories, as opposed to simply recounting factual information, would likely be important as well.

Thus, prior public speaking experience and a measure of general philosophies about the importance of story-telling and appropriate outcomes of interpretation might be among appropriate skills and abilities to assess at the hiring stage. Our experiences suggest that

interpreters that aim toward revelation of more than just facts achieve better results. In other words, possessing deep knowledge without the ability to use it properly does not provide the interpreter with a meaningful advantage during programs.

KSAs might also include the ability of applicants to react to unexpected circumstances, which were commonly observed during this research. Being able to react quickly and appropriately and not having to “stick to the script” of an interpretive program can also keep it from becoming overly formal or uninteresting. Responses to hypothetical situations might gauge whether applicants would likely be flexible and adaptable in such circumstances.

While predispositions identified during the hiring process might enhance the probability of achieving excellent interpretive outcomes, each of these issues could also be addressed during training. . Training is the opportunity to turn new hires (and experienced interpreters) into *great* interpreters. Familiarizing employees with the park and its resources is the first step to allowing them to create their own connection with and understanding of the place. The opportunity to spend time in the park and enjoy the resources it has to offer should be a key part of training. Without the opportunity to continue learning about the park and the chance to create their own connection with it, interpreters are unlikely to be able to help visitors create that connection for themselves.

Training is also an opportunity to focus on some of the basics of good communication skills. Training should include an emphasis on the concepts of immediacy and affinity-seeking. Immediacy is used to foster closeness and minimize physical or mental distance between communicators and their audiences (Mehrabian 1969), something which could be stressed and exemplified by trainers. Immediacy deals with the familiarity that is created between an

instructor and his or her audience members. Greater immediacy is brought about by the use of small talk, some limited self-disclosure, addressing audience members by their first names, and other personal, non-verbal communication forms (Myers et al. 1998). Affinity-seeking is an active communication process in which the communicator attempts to get their listeners to like them (McCroskey 1986). These affinity-seeking behaviors are closely linked with immediacy, which can be used in combination to quickly develop a relationship between the interpreter and the audience. Interpreters who seek the approval and “friendship” of their audience members are likely to build a stronger connection with them (McCroskey 1986). These practices create familiarity and enhance openness to the content of the program. In this way, instruction (both in training and in action) becomes a more intimate experience and is able to reach the audience more effectively.

Perhaps the simplest way for interpreters to understand what interpretation truly should be is to see both good and bad interpretation in action during training. This can be done using interpretive programs recorded on video, the acting out of hypothetical situations by other interpreters, or simply joining interpreters on several of their programs and critiquing their performance. Having seen a great number of programs during our time in the field, it is clear that reenacting both good and bad programs would not be difficult. Table 15 below helps to illustrate how this could be done.

**Table 15. Narrative examples of “good” and “bad” programs that can be used during training.**

<b>Interpretive Component</b>	<b>BAD</b>	<b>GOOD</b>
Staging	Before the program begins, the ranger stands off to the side and leans against a sign announcing the time and title of the	Prior to beginning, the ranger announces the upcoming program several times. While waiting, she talks to gathering visitors, asks

	next program. He does not make eye contact with visitors or engage them in any way. Some visitors mill around, looking unsure of what to do, while others talk amongst themselves and then walk away before the program begins.	them where they're from, why they came to the park, what they're interested in, and addresses them by name.
Introduction	At the designated start time, the ranger says "Ok, let's get started," but does not introduce himself or ask any of the visitors questions about themselves. The ranger then launches straight into the program by listing facts about the history of the first place they visit on the tour.	As the program begins, the ranger asks the visitors to close their eyes and imagine themselves transported back in time. She paints a picture with words, describing a battle at sea and the sound of munitions exploding all around. She causes visitors to jump when she yells "Man overboard!"
Body of program	The ranger provides a description of a native species that can be found in the park, detailing its appearance, unique traits, and status as a threatened species. The ranger continues working his way through species after species and runs past the scheduled end time for the program. He does not seem particularly interested in the topic, but instead like he is reciting a series of facts he has memorized. Several people seem ready to leave and one family with young children departs while the ranger isn't looking. Near the end of the program, we pass the nest of a certain bird of prey that the ranger mentioned earlier in the program, but he does not point it out to the group.	The ranger begins to tell her story, imagining herself in the shoes of one of the soldiers and telling the visitors to do the same. She gets excited, then she gets sad, then she quietly reflects on what life must have been like onboard ship. She does not spend a lot of time on details, dates, or specifications. She gives the information necessary to understand the history of the place. She tells the group why she cares so much about it, why she is glad to share the place with this group. The visitors are engaged, they are enjoying themselves.
Receiving questions	When a member of the audience raises their hand, the ranger simply says "Please hold all questions until the end of the program."	When asked a question, the ranger gives both the factual answer and another question, which causes the visitor to think.
Wrap-up	Once he has said everything he wants to say, the ranger thanks the group and departs without any further interaction or the opportunity to field questions from the group.	As the program concludes, the ranger stays behind to talk with visitors, answer their questions, and tell them a bit more about why she became a ranger.

While these examples are clearly oversimplified, they are both illustrative of programs observed during our field research. There are always opportunities to interact with visitors, fine tune programs to their interests, and take advantage of interpretive opportunities. These could all be stressed in interpretive training sessions. Training could focus on developing the qualities uncovered in this research through practices and hypothetical situations. Such practice could

also involve unexpected circumstances to allow interpreters to practice their reactions to common occurrences in the park (bad weather, an injury, and animal sighting, etc.).

An additional key (unexpected) finding was the number of programs for which our research team showed up that *didn't happen*. This study demonstrates that almost any interpretive program that takes place in a National Park can have a positive impact on the satisfaction and experience of a visitor. However, the program that doesn't happen will not have any positive influence at all. During the three months of field work that went into this study, four field technicians showed up for 474 scheduled programs. Of those programs, 98 of them didn't happen as scheduled. While there were instances where foul weather, a sick ranger, or some unexpected closure in an area of the park kept a program from happening, there were even more instances where no visitors showed up for the program or the interpreter never appeared. While we did not directly measure impacts on visitor satisfaction, the lost opportunity and the potentially damaging effects of showing up for a scheduled program that doesn't happen are apparent. Advertising for programs, mingling with visitors, and the efforts of interpreters to always be present for a program can help to ensure that those positive results reach an audience. Monitoring the proportion of scheduled programs that actually take place could help the Park Service enhance its interpretive programming.

The results of this study provide a holistic perspective on practices related to positive outcomes for program attendees. However, each of these practices employed in isolation does not guarantee a high quality program. We suspect that outcomes may also in part rely upon other factors not measured in this study (see Stern et al. 2012). As such, maintaining interpreter's freedom to inject their own style and plan programs of their own (rather than

presenting pre-written ones) may allow them to be more effective. The positive relationship between interpreters' level of excitement before a program and overall visitor satisfaction is a good indication of this.

### ***Measurement Challenges***

Our findings suggest that National Park Service live interpretive programs generally lead to high levels of satisfaction and enhanced experiences among visitors. Overall, visitors responded with consistently positive responses concerning their satisfaction and the enhancement of their experience. While this may indicate that interpretive programs in the NPS are generally "good," there are other factors to consider as well.

We suspect the results of this study may be influenced by a "ceiling effect," which describes the phenomenon when individuals (in this case NPS visitors) come into an experience with already high scores on the outcomes considered (in this case the specific attitudes and intentions measured in the study). As such, some respondents would report little to no change for an outcome measure because their attitudes or intentions may already be at the high end of the spectrum for the outcome in question. In these cases, the survey items may not be sensitive enough to detect the influence of a program. For example, interactions with visitors and notes written on surveys by visitors seem to indicate that many of them felt like they already "behaved respectfully" in our parks and protected places, and therefore the program they attended did not necessarily *change* how they intended to behave in the future.

Further, National Park visitors who have made the decision to attend an interpretive program are likely pre-disposed to perceive a program positively for several reasons. According to Ajzen and Driver (1992), leisure activities (like programs attended in a National Park) are

likely to produce more positive results in surveys that are affective in nature. Visitors are expecting to have a good time, are primed for a positive experience, and tend to reflect this attitude in survey responses no matter what degree of enjoyment they got out of the experience. Whether planned or spontaneous, these visitors have made the conscious choice to attend an interpretive program and likely have some degree of interest in the topic or in spending time with a ranger. These attendees tend to be individuals, friends, or family groups who are on vacation, enjoying themselves in a National Park, away from the stresses of work and daily life. There may also be some degree of “courtesy” built into their survey responses, either feeling that more positive responses would encourage the NPS to continue funding interpretive programs or that lower scores would reflect poorly on individual interpreters (despite several assurances that they would not reflect on the interpreter in any way whatsoever).

Peterson and Wilson (1992) further explain that satisfaction responses are typically skewed to include more high satisfaction than low satisfaction responses. This may be for several reasons, including data collection mode bias (satisfaction surveys completed in person – like those in our study – tend to yield higher results than those completed over the phone or by mail), question form (our questions were asked with a positively presented scale, such as “How satisfied were you...?” rather than “How dissatisfied were you...?”), and question context (the grouping and order of questions in a survey). What Peterson and Wilson (1992) suggest is that while satisfaction is generally high, this level of satisfaction is only relative to each other measure (in this case one program compared to another), and that although they are generally

skewed towards a higher level of satisfaction, they are still a relevant measure of how satisfied visitors were after each individual program.

Although outcome measures for satisfaction and visitor experience were consistently high, there was sufficient variability for certain interpreter characteristics to predict significant differences in outcomes. As such, the predictive variables uncovered in this effort may be thought of as those that separate great programs from ones that might be considered merely good, or adequate.

Future research aiming to isolate the drivers of visitor outcomes in similar programs might focus on creating more sensitive outcome measures, and a broader array of them. Moreover, future studies might consider the use of control groups to further isolate the impacts of interpretive program characteristics. Future research will also be faced with the challenge of consistent measurement of independent variables. Our small team required considerable training, feedback, and regular adjustment to ensure reliable measures. Future research efforts will need to invest similar efforts on ensuring consistent interpretation of the characteristics under study.

Future studies might also look at the organizational culture of individual parks and its impact on interpreters' performance. Each park we visited had a unique culture, which was evident in conversations with rangers, interaction with park management, and while observing individual programs. While we did measure such things as the interpreter's level of experience and excitement for a specific program, we did not specifically measure interpreters' happiness in the work place. We suspect that the comfort and degree of satisfaction an interpreter feels while planning a program and interacting with upper management may be reflected in their

performance. An interpreter who does not feel free to design their own programs, inject their own style, and try new things is unlikely to feel passionate or sincere when delivering a program. As numerous studies have found, happy workers tend to perform better (White and Mackenzie-Davey 2003, Bakker and Demerouti 2008, Bellou 2010). Parks ranged in culture from complete freedom and open channels of communication between employees in the park to a distinct culture of fear regarding observation, auditing, and evaluation of programs. This seemed to be reflected to some degree in the performance of the rangers.

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## Appendix A: Interpretive Program Data Collection Sheet

**Program Information:**

CODE: \_\_\_\_\_

Program Title: \_\_\_\_\_

Intended Length: \_\_\_\_\_ Actual Length: \_\_\_\_\_ Start on Time: \_\_\_Yes \_\_\_No Time (circle): AM Afternoon Evening After dark

Location: \_\_\_ Inside \_\_\_ Outside \_\_\_ Both

Type of Program (check all that apply): Guided walk \_\_\_ Hands-On Activity \_\_\_ Demonstration \_\_\_ Talk \_\_\_ Other: \_\_\_\_\_

Program Focus: Natural \_\_\_\_\_ Cultural \_\_\_\_\_ Mix \_\_\_\_\_ Other \_\_\_\_\_

Group size (approx): \_\_\_\_\_

Age ratio (check): \_\_\_All kids \_\_\_Mostly kids \_\_\_Even mix \_\_\_Mostly adults \_\_\_All adults

Bad weather (circle): Yes No Explicitly geared toward children?(circle) Yes No

**Intended Programmatic Outcomes:**

- Have an increased knowledge of the program topic
- Have an increased appreciation of the NPS
- Want to learn more about the program topic
- Change their attitudes toward something
- Develop and practice a new skill

- Have an increased appreciation for this park
- Have an increased understanding of the park's resources
- Have an increased concern for a specific topic
- Change a certain behavior in the future
- Be entertained

**Program Origin:**

- Program provided for ranger with full script and topic planned out
- Program provided for ranger, with some freedom to inject own style
- Program topic provided, little restrictions on information or style to be presented
- General topic area suggested, but wrote own script and selected information
- Ranger selected and developed entire program free from restrictions

**Level of Experience:** How many times have they performed this program?

Number of Times: \_\_\_\_\_

**Excitement (circle a number):**

0 1 2 3 4 5 6 7 8 9 10

**Interpreter Information:**

Volunteer: \_\_\_ Yes \_\_\_ No Concessionaire: \_\_\_ Yes \_\_\_ No

Years of Interp Experience: \_\_\_\_\_ Years with Park Service: \_\_\_\_\_

Length of time in this park (yrs): \_\_\_\_\_

Gender: Male \_\_\_\_\_ Female \_\_\_\_\_

Age estimate (circle one):

Under 25                  25-34                  35-50                  Over 50

**Program Description:** The following table contains a list of attributes that may or may not apply to the program. For each, please read the definition carefully and consider the extent to which the observed program utilized that attribute. Circle the appropriate number in the right hand column. These attributes are neither inherently good nor bad.

Program Descriptor	Definition	Scoring			
Quality of introduction	Degree to which the introduction oriented audience program and captured audience's attention.	3  Introduction effectively oriented audience to program and captured audience's attention	2  Introduction minimally oriented audience to program; did not necessarily capture audience attention.	1  Introduction poorly executed.	
Appropriate logistics	Degree to which basic audience and program needs were met (i.e., restrooms, weather, technology, etc).	4  Program logistics were entirely well planned and appropriate for audience and context.	3  Audience and program needs mostly addressed	2  Audience and program needs marginally addressed	1  Audience and program needs not met
Comfort of the Audience	Degree of physical comfort	4  Audience is very comfortable. Nothing else could have feasibly been done to make audience more	3  Audience is comfortable	2  Audience is uncomfortable	1  Audience is very uncomfortable

		comfortable.				
Appropriate for Audience	Degree to which the program aligns with audience's level of knowledge, interest, and experience	5 Very appropriate for audience	4 Appropriate for audience	3 Moderately appropriate for audience	2 Only slightly appropriate for audience	1 Not appropriate for audience
Appropriate sequence	Degree to which the program followed a logical sequence.	4 Sequence <b>enhanced</b> messaging and was appropriate for experience, terrain	3 Sequence was appropriate, but didn't necessarily enhance messaging (could be irrelevant to experience)	2 Sequence seemed choppy	1 Sequence detracted from messaging.	
Transitions	Degree to which used appropriate transitions that kept the audience engaged and did not detract from the program's sequence.	4 Transitions enhanced talk and were smooth	3 Transitions were appropriate, but didn't necessarily enhance talk	2 Transitions seemed forced or nearly irrelevant to experience	1 Transitions detracted from presentation or not present.	

<p>Links to intangibles and universals</p>	<p>Degree to which the program made links to intangible meanings and higher-level concepts.</p> <p>Intangibles: ideas, meanings, or significance that tangible resources represent</p> <p>Universals: concepts that most audience members may identify with (power, home, family, etc.)</p>	<table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 15%;">5</td> <td style="width: 15%;">4</td> <td style="width: 15%;">3</td> <td style="width: 15%;">2</td> <td style="width: 15%;">1</td> </tr> <tr> <td>Extensively developed connections to powerful universal concept(s)</td> <td>Well developed connections to universal concept(s)</td> <td>Universal concepts present, but linkages are weak/not fully successful</td> <td>Universal concepts difficult to detect; slightly used at best</td> <td>Universal concepts clearly not present</td> </tr> </table>	5	4	3	2	1	Extensively developed connections to powerful universal concept(s)	Well developed connections to universal concept(s)	Universal concepts present, but linkages are weak/not fully successful	Universal concepts difficult to detect; slightly used at best	Universal concepts clearly not present																				
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Extensively developed connections to powerful universal concept(s)	Well developed connections to universal concept(s)	Universal concepts present, but linkages are weak/not fully successful	Universal concepts difficult to detect; slightly used at best	Universal concepts clearly not present																												
<p>Multisensory</p>	<p>Degree to which the program intentionally engaged multiple senses beyond a traditional (didactic) approach.</p> <p>2= Explicit/purposeful inclusion</p> <p>1= Included by chance or in passing</p> <p>0= Not included</p>	<table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Visual</th> <th colspan="3">Auditory</th> <th colspan="3">Tactile</th> <th colspan="3">Smell</th> <th colspan="3">Taste</th> </tr> </thead> <tbody> <tr> <td>2</td><td>1</td><td>0</td> <td>2</td><td>1</td><td>0</td> <td>2</td><td>1</td><td>0</td> <td>2</td><td>1</td><td>0</td> <td>2</td><td>1</td><td>0</td> </tr> </tbody> </table>	Visual			Auditory			Tactile			Smell			Taste			2	1	0	2	1	0	2	1	0	2	1	0	2	1	0
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2	1	0	2	1	0	2	1	0	2	1	0	2	1	0																		
<p>Physical engagement</p>	<p>Degree to which the program physically engaged audience members in a participatory experience; i.e., through touching or interacting with resource.</p>	<table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 15%;">4</td> <td style="width: 15%;">3</td> <td style="width: 15%;">2</td> <td style="width: 15%;">1</td> </tr> <tr> <td>Physical engagement a central element of the programming</td> <td>Physically engaged multiple times throughout the program</td> <td>Minimal effort to physically engage audience.</td> <td>No efforts to physically engage audience</td> </tr> </table>	4	3	2	1	Physical engagement a central element of the programming	Physically engaged multiple times throughout the program	Minimal effort to physically engage audience.	No efforts to physically engage audience																						
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Physical engagement a central element of the programming	Physically engaged multiple times throughout the program	Minimal effort to physically engage audience.	No efforts to physically engage audience																													

Verbal engagement	Degree to which the program verbally engaged audience members in a participatory experience; i.e., a two-way discussion.	5  Verbal engagement a central element of the programming	4  Verbally engaged multiple times throughout the program	3  Verbally engaged in a modest way	2  Effort made but minimal	1  No efforts to verbally engage audience																													
Cognitive engagement	Degree to which the program cognitively engaged audience members in a participatory experience beyond simply listening; i.e. calls to imagine something, reflect, etc.	5  Cognitive engagement a central element of the programming	4  Cognitively engaged multiple times throughout the program	3  Cognitively engaged in a modest way	2  Effort made but minimal	1  No efforts to cognitively engage audience																													
Multiple activities (Audience-centric)	Degree to which the program consisted of a variety of activities and opportunities for direct audience involvement (not including dialogue).	4  More than two primary activities included	3  Two or more secondary activities included	2  One secondary activity included.	1  One activity only.																														
Multiple modes of delivery (Delivery-centric)	Degree to which the program catered to multiple learning styles; audience is engaged in a different form of receiving messages.  2= Explicit/purposeful inclusion  1= Included by chance or in passing	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">Visual</th> <th colspan="3" style="text-align: center;">Auditory</th> <th colspan="3" style="text-align: center;">Kinesthetic</th> <th colspan="3" style="text-align: center;">Tactile</th> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> </tr> </table>										Visual			Auditory			Kinesthetic			Tactile			2	1	0	2	1	0	2	1	0	2	1	0
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2	1	0	2	1	0	2	1	0	2	1	0																								

	0= Not included						
Props	Were props used?	Yes		No			
Relevance to audience	Degree to which the program communicated the relevance of the subject to the lives of the audience.	5 Major focus of communication is on creating relevance	4 Efforts to create relevance well developed and incorporated	3 Moderate efforts to create relevance	2 Minimal efforts to create relevance	1 No efforts made to create relevance	
Resource and place based messaging	Degree to which the program emphasized the connection between the visitor and the site/resource. The resource in question may be tangible (the park, the wildlife, etc) or intangibles (a story, a history, etc).	5 Connection extensively emphasized and developed (connection is the central focus of the communication)	4 Connection emphasized and well developed (repeatedly AND through some form of engagement)	3 Connection moderately emphasized and developed (repeatedly OR through active engagement)	2 Connection only slightly developed (verbally)	1 Connection not emphasized or developed	
Affective messaging	Degree to which the program communicated emotion, based on quantity rather than quality.	5 Affective messaging a central element to	4 Affective messages used frequently	3 Affective messages used occasionally.	2 Effort to include affective messages is	1 Affective messages absent.	

		program.	and repeatedly.	minimal.	
Fact-based messaging	Degree to which the program communicated factual information.	4 Solely fact-based messaging	3 Fact-based messages used frequently and repeatedly.	2 Fact-based messages used occasionally.	1 Fact-based messages minimal or absent.
Surprise	Degree to which the program used the element of surprise in communication. This could include “aha” moments or unexpected or contrasting messages.	3 Surprise used as a major element to reveal connections or information	2 Surprise used as one minor element of communication.	1 Surprise not used.	
Novelty	Degree to which the program presented novel ideas, techniques, or viewpoints as an element of communication; i.e., using a device not usually associated with or related to resource.	3 Novelty used as a major element to reveal connections or information	2 Novelty used as one minor element of communication.	1 Novelty not used.	
Provocation	Degree to which the program explicitly provokes participants to personally reflect on content and its deeper meanings.	4 Powerful and explicit call(s) for personal reflection.	3 Occasional calls for personal reflection throughout	2 Isolated or vague call for personal reflection	1 No attempt at provocation made.

		program.				
Multiple viewpoints about central message or theme	Degree to which the program explicitly acknowledged multiple perspectives or uncertainty within a theme or message. (Primarily for controversial messaging; when an argument is made, is a relevant counter-argument provided?)	3	2	1	NA	
		Multiple viewpoints developed. None given clear priority	Program primarily focuses on one viewpoint, with some acknowledgement of others.	No effort to present multiple viewpoints		
Demonstrates benefits of action	Degree to which the program emphasized the potential benefits resulting from performing a particular action(s).	4	3	2	1	NA
		Benefits explicitly and purposefully emphasized a lot	Benefits mentioned a moderate amount	Benefits explained a little.	No mention of benefits.	
Demonstrates costs of action	Degree to which the program emphasized the potential costs resulting from performing a particular action(s).	4	3	2	1	NA
		Costs explicitly and purposefully emphasized a lot	Costs mentioned a moderate amount	Costs explained a little.	No mention of Costs.	
Social norms	Degree to which the program emphasized the social acceptability of performing a particular behavior or desired action.	4	3	2	1	NA
		SN explicitly and purposefully emphasized a lot	SN mentioned a moderate amount	SN explained a little.	Social norms not mentioned.	

Ease of action	Degree to which the program communicated the ease (or difficulty) of performing a particular behavior or desired action.	4 Ease of action explicitly and purposefully emphasized a lot.	3 Ease mentioned a moderate amount	2 Ease explained a little.	1 Ease of action not addressed.	NA
Demonstrates action	Degree to which the program provided examples of, or opportunities for, performing a desired action.	4 Participatory demonstration with majority of audience engaged.	3 Actual demonstration by ranger or small percentage of audience.	2 Verbal description of desired action.	1 No mention/demonstration of desired action.	NA
Holistic story vs. individual facts	Degree to which the program aimed to present a whole rather than a part.	5 Holistic story used throughout; all information tied to story.	4 Holistic story present; some information does not relate to story.	3 Equal mix of storytelling and factual information, no single, holistic story	2 Factual information primarily used; some stories used to create relevance.	1 Facts and information primarily; no attempt at storytelling.
Linkage between introduction and conclusion	Degree to which program connected introduction to conclusion in an organized or cohesive way (i.e., program “came full circle.”)	4 Intro and conclusion were linked in a cohesive way that enhanced messaging.	3 Intro and conclusion were linked, but didn’t necessarily enhance	2 Intro and conclusion were weakly linked	1 Intro and conclusion were disconnected from each other.	

		messaging.			
Thematic	Degree to which the program had a clearly communicated theme(s). A theme is defined as a single sentence (not necessarily explicitly stated) that links tangibles, intangibles, and universals to organize and develop ideas.	4 Theme is clearly communicated	3 Theme easy to detect, but not particularly well developed	2 Theme difficult to detect, present but somewhat ambiguous	1 Theme unclear/not present
Central Message(s)	Degree to which program's message(s) (more broad or "inspiring" than theme) is clearly communicated. This is the "SO WHAT?" element of the program.	4 Message(s) clearly communicated and well-developed.	3 Message(s) easy to detect, but not particularly well developed	2 Message(s) difficult to detect, present but somewhat ambiguous	1 Message(s) unclear/not present
Pace	Degree to which the pace of the program allowed for clarity and did not detract from the program.	Pace too fast at any point	Pace too slow at any point	NA	
Consistency of tone	Program tone overall was consistent (i.e., tone remained humorous, or light-hearted, or serious, etc.).	3 Tone was consistent.	2 One or more shifts in tone that were not attributed to the element of surprise.	1 Tone was inconsistent or unclear throughout program.	
Consistency of quality	Program quality overall was consistent.	3 Consistent	2 Minor or isolated break in quality	1 Inconsistent quality	

	10	9	8	7	6	5	4	3	2	1	0
Overall Quality	Extremely high quality	Excellent	Very Good	Good	Above average	Average	Fair	Below average	Poor	Very poor	Extremely low quality

Comments:

**Delivery styles:** The following table contains a list of attributes that may or may not be applicable during a specific program. For each, please read the definition carefully and consider the extent to which the interpreter portrayed each attribute. Circle the appropriate number in the right hand column. These attributes are neither inherently good nor bad. You will not be judged in any way on your responses.

<b><u>Delivery styles</u></b>	<b><u>Operational Definition</u></b>	<b><u>Scale (circle one)</u></b>
Professional Appearance	The extent to which the interpreter appears properly dressed (in uniform or costume) and in charge of those in attendance.	0 = Interpreter appears disheveled or unkempt and is not professionally dressed  1 = Interpreter appears well-groomed and is professionally dressed
Comfort of Interpreter	Degree to which the interpreter presenting the program seems comfortable with the audience and capable of successfully presenting the program.	1 = Interpreter seems scared, nervous, or unable to lead the program  2 = Interpreter seems nervous and struggles with much of the program  3 = Interpreter seems comfortable, but might become uncomfortable at times  4 = Interpreter is not nervous and handles the program with ease
Responsiveness	The extent to which the interpreter interacts with the audience, collects information about their interests and backgrounds, and responds to their specific questions and requests.	NA  1 = Interpreter is aloof or averse to the visitors' presence  2 = Interpreter is somewhat responsive to visitors' questions/body language  3 = Interpreter was very responsive to the audience

Inequity	Measures the degree to which the interpreter includes all members of the audience equally, interacts with everyone, and shows equal interest in the questions or needs of everyone.	1 = Interpreter did not pay equal attention to all audience members.  0 = No inequity issues.
Humor quantity	Measures the extent to which the interpreter attempts to use humor, sarcasm, or jokes to share the topic with the visitor, regardless of their success.	1 = Interpreter attempts no humor throughout the presentation  2 = Interpreter rarely uses humor  3 = Interpreter uses an equal mix of humor and non-humor to convey the message  4 = Interpreter is mostly trying to be humorous  5 = Interpreter uses humor as the primary vehicle to convey their message
Humor quality	How funny is the interpreter overall?	1 = Not funny at all  2 = A little funny  3 = Moderately funny  4 = Hilarious
Passion	Measures the way in which the interpreter presents information to the visitor, with an obvious passion and excitement for the material or with a bored/apathetic attitude toward it. Does not necessarily indicate bias or opinion, but the overall	1 to 5 scale  1 = Interpreter seems completely detached/disinterested from the program  2 = Low levels of passions

	vigor and enthusiasm with which the material is presented.	<p>3 = Interpreter shows moderate levels or sporadic instances of passion</p> <p>4 = Pretty high levels of passion overall</p> <p>5 = Interpreter seems extremely passionate about the program</p>
Personal sharing	The degree to which the interpreter was willing to share personal insight, answer questions about themselves for the audience, or provide their own opinion on topics or events relevant to the program.	<p>1 = Interpreter did not share any personal information about themselves with the audience</p> <p>2 = Interpreter shared minimal personal information or viewpoints</p> <p>3 = Interpreter shared a large amount of personal information and perspective</p> <p>4 = Interpreter's personal life/point of view is explicitly the central focus of the experience (used themselves as the primary framework for the program)</p>
Impatience	Did the interpreter show any explicit impatience toward audience members?	<p>1 = Interpreter was explicitly impatient with the audience</p> <p>0 = No issues noted</p>
Apparent Knowledge	The degree to which the interpreter appears to know the information involved in the program, the answers to visitors questions, and has local knowledge of the area and its resources.	<p>1 = Interpreter seems not at all knowledgeable (unsure of facts or has a hard time recalling the information intended for the program)</p> <p>2 = Interpreter seems somewhat knowledgeable, but appears to forget a few things or leave out important details</p>

		<p>3 = Interpreter appears more or less knowledgeable without any major hiccups or uncertainty throughout the program.</p> <p>4 = Interpreter's presentation of facts and information during the program is flawless</p>
Audibility	The extent to which the interpreter can clearly be heard and understood by the audience, in terms of projection, clear articulation, and volume.	<p>1 = Interpreter could not be heard by the audience during the majority of the program</p> <p>2 = Interpreter could be clearly heard for the majority of the program, but wasn't audible during some parts</p> <p>3 = Interpreter could be clearly heard throughout the entire program</p>
Eloquence	The extent to which the interpreter spoke clearly and did not mumble or use words such as "um" or "like."	<p>1 = Interpreter stumbled on their speech throughout their entire program and was hard to understand</p> <p>2 = Interpreter had some minor issues with mumbling or unclear speech</p> <p>3 = Interpreter had no such issues during the program</p> <p>4 = Interpreter was exceptionally eloquent</p>
Casual vs. Formal	The degree to which the interpreter was casual and laid back about the presentation of the program, as compared to a very formal and official presentation.	<p>1 = Interpreter was extremely casual</p> <p>2 = More casual than formal</p> <p>3 = Interpreter was neither explicitly casual nor formal</p> <p>4 = More formal than casual</p>

		5 = Interpreter was entirely formal
Sarcasm	The degree to which the interpreter used sarcasm or self-deprecation that was not meant to be serious, as a part of presenting their program.	1 = Not present 2 = Done to some extent 3 = A central feature of the delivery style
Charisma	A general sense of the overall likeability/charisma of the interpreter	1 = Not likeable/found them irritating 2 = Somewhat off-putting 3 = Neither liked or disliked them 4 = More or less liked them 5= Found them very likeable/charismatic
Authentic Emotion/Sincerity	The degree to which the interpreter seemed sincere in telling stories or experiences and their emotional connection to the topic or resource seemed real (authentic emotive communication)	1 = Interpreter seemed to only be going through the motions, with no real emotional connection or sincerity 2 = Interpreter seemed somewhat connected through the words they used, though their mannerisms or intonation didn't corroborate their words. 3 = Interpreter seemed mostly sincere with authentic emotive communication for most of the program 4 = Communication was clearly sincere and authentic throughout the program, as evidenced by words, gestures, intonation, or other mannerisms

False Assumption of Audience	At any point during the program, did the interpreter make assumptions of the audience's attitudes or knowledge that detracted from the overall quality of the experience?	1 = No problem with false assumptions 2 = Some minor false assumptions that likely did not detract from the quality of the program 3 = Obvious false assumptions that made the experience less enjoyable or meaningful
Identity: Character Actor	The degree to which role playing or character acting is incorporated into the program, either to add authenticity or to help tell a story.	0 = Interpreter does no role playing during the program, he/she is simply leading the program 1 = Interpreter acts like one or more character during parts of the program 2 = Interpreter is in full costume or does not break character at any point during the program
Primary identity: place a check next to any identity that appeared to be the interpreters' primary identity. OK to check none.	Friend: Outwardly friendly, approachable	
	Authority figure: Focused on projecting own position of power	
	Teacher/walking encyclopedia: Focused on conveying facts	

**Unexpected Negative Circumstance:**

Were there any unexpected interruptions or emergencies during the program, such as a sudden change in weather, medical emergency, technical difficulties, or hazardous conditions that detracted from the quality of the program? \_\_\_\_ Yes \_\_\_\_ No

Brief explanation: \_\_\_\_\_  
\_\_\_\_\_

**Unexpected Positive Experience:**

Was there an unexpected experience that occurred during the program, such as seeing charismatic wildlife or other unique phenomena that added significantly to the quality of the experience?  Yes  No

Brief Explanation: \_\_\_\_\_  
\_\_\_\_\_

**Bias/Strong Opinion:** At any point during the program, did the interpreter show apparent bias or strong opinion that impacted the quality of the program?  Yes  No

Brief Description: \_\_\_\_\_  
\_\_\_\_\_

**Obvious Factual Inaccuracy:** At any point during the program, did the interpreter make a statement (portrayed as fact), that was clearly inaccurate and may have detracted from the program or distracted visitors?  Yes  No

Brief Explanation: \_\_\_\_\_  
\_\_\_\_\_

**False Attribution:** At any point during the program, did the interpreter assume the opinions/emotions of other people or make unfounded claims about others (i.e. "the native people were happy to hand over their land so a National Park could be created...")?  Yes  No

Brief Explanation: \_\_\_\_\_  
\_\_\_\_\_

**Special Circumstances:** Were there any visitors in attendance that needed special assistance from the interpreter to participate?

Yes  No

If yes, how did the interpreter handle the situation?

1 = Did not acknowledge or accommodate needs of the visitor

2 = Made some attempt to accommodate them

3 = Specifically addressed the needs of the visitor and made sure they were able to participate