EFFECTS OF PODCAST TOURS ON TOURISTS' EXPERIENCES

IN A NATIONAL PARK

A Dissertation

by

MYUNG HWA KANG

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2009

Major Subject: Recreation, Park, and Tourism Sciences

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ABSTRACT

Effects of Podcast Tours on Tourists' Experiences in a National Park. (December 2009)

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This dissertation examines the effect of podcast tours on park visitor experiences. Podcast tours have emerged as a new medium in facilitating the interaction between tourists and destinations. Providing visitors with enhanced experiences through the use of interpretive technologies is especially important for national parks dealing with enhancing visitors' experiences which may influence visitors' perception of environmental stewardship and, in turn, positively affect preserving environmental resources. Furthermore, there has been a noticeable increase in consumer demand for podcast tours. Based on theoretical accounts that human voices convey rich social information, this dissertation proposes that podcast tours enhance perceived social presence and mindfulness which leads to enhanced tourist experiences (learning, enjoyment, and escape) and environmental stewardship (attitudinal and behavioral stewardship).

A field experiment was conducted at Padre Island National Seashore using MP3 players containing podcast tours. The podcasts were manipulated using four experimental conditions: 2 information source compositions (single narrator voice vs.

multiple narrator voices) x 2 narrating styles (formal style vs. conversational style). The questionnaire administered to subjects after they took the podcast tour included measures of social presence, mindfulness, tourist experience (learning, enjoyment, and escape), and stewardship (attitudinal and behavioral stewardship). The pre-questionnaire included question items regarding the nature of the visit, visitor characteristics, technology usage behavior, audio tour evaluation and socio-demographics. Responses from 221 visitors were analyzed using structural equation modeling with LISREL 8.7.

The results provide evidence that multiple voices, and to some extent also narration style, positively increase social presence but neither experimental condition had any influence on mindfulness. The increased feeling of social presence influences park visitors' enjoyment and escape experiences but not learning. Mindfulness was found to affect visitors' learning, enjoyment, and escape experience. The results further show that enhanced experiences positively influence attitudinal stewardship which in turn leads to behavioral stewardship toward national parks.

The results of this dissertation generally support the theoretical model suggesting that even if communicated through audio-only media, the human voice creates and sustains a positive social context for meaningful interaction which influences tourist experiences and stewardship. Mindfulness was also found to be an important construct impacting the quality of visitor experiences but could not be explained by the specific podcast tour designs tested. From a practical perspective, the findings provide important insights regarding the usefulness of podcast tours as interpretative media, and also suggest that specific designs are more capable of fostering feelings of social presence.

Further, the study results stress the importance of social presence and mindfulness for enhanced visitor experiences and show the impact of positive visitor experiences on stewardship.

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CHAPTER I

INTRODUCTION

Study Background

Tourists increasingly focus on enjoying a value-added quality experience by actively engaging in creating experiences (Prentice, 2001). Tourist experiences are created through multiple aspects of travel destinations as well as a mix of individual tourist characteristics (Anderson, 2007; Pearce, 2005; Goulding, 1999). It appears that tourist experiences created through the interaction between tourists and travel destinations influence a variety of tourist attitudes or behaviors such as visitation to travel destinations, word-of-mouth, and environmental perceptions (Pearce, 2005). As a result, the concept of tourism experience has drawn the attention of tourism organizations. Contemporary tourism managers have acknowledged the need to provide enjoyable experiences and to deliver quality experiences to tourists (Wang, 2000; Uriely, 2004).

The National Park Service (NPS) has worked with its partners in the tourism industry and cooperated with a variety of associations, communities, educational institutions, and transportation services to provide opportunities for enjoyment, education, and inspiration to park visitors while conserving the natural, cultural, and

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This dissertation follows the style of *Tourism Management.*

historical resources of the national park system for current and future generations (Department of the Interior, 2006). NPS manages national parks, a network of nearly 400 parks, representing the natural, historical, and cultural legacy of the nation and attracting several million visits annually (NPS, 2009a; Department of the Interior, 2006).

However, NPS has faced challenges related to visitation trends for the past several years. A growing body of research has documented that after 50 years of steady increases, visits to US national parks have declined or remained flat since 1999, the peak year for visitation to the National Park System when 287 million visits were recorded (Department of the Interior, 2006; Pergams & Zaradic, 2006). NPS reported that units of the NPS received 273.4 million recreation visits in 2005, 272.6 million in 2006, 275.5 million in 2007, and 274.8 million in 2008 representing an overall decreasing or flat trend (NPS, 2009b). Research has documented the factors leading to the decline in national park visits. For example, the Department of the Interior (2006) pointed out that following the 9/11 terrorist attacks, significant dips in visitation occurred in 2002 and 2003, partly as a result of partial closures of some national NPS sites and sharply reduced international travel to the U.S. More important, some researchers identified that several factors influenced national park visitation such as population size and age structure (Murdock, Backman, Hogue, & Ellis, 1991), changing ethnic composition (Murdock, et al., 1991; Gramann & Allison, 1999), climate change (Loomis & Crespi, 1999; Mendelsohn & Markowski, 1999), and distance and origin of travel (Eagles, MacLean, & Stabler, 2000).

Interestingly, Pergams and Zaradic (2006) found a relationship between decreasing national park visits and the increasing use of entertainment media based on 20 year nation-wide data. They found that national park visits were influenced by the increasing pursuit of electronic media entertainment such as video games, home movies, theater attendance and the Internet in the past decade. Research results suggest that national parks compete with newly developed entertainment media that lead to a reduced amount of time spent in physical activities.

While the Internet and electronic entertainment media are presently demanded by most generations, current trends show that use of electronic entertainment and the Internet is more prevalent among young generations (Pergams & Zaradic, 2006). It is likely that since the young generation group is more technology-sophisticated than other generations, the Internet and electronic entertainment media have a greater impact on the physical activities and recreation of the young generation preventing them from visiting outdoor or travel sites for their leisure time. Therefore, considered as future park visitors, members of the generation born between 1965 and 1976 (51 millions) and the Millennium generation born between1977 and 1998 (75 million) should be considered an important segment for national parks and information technologies should be effectively implemented in national parks.

Tourist experiences are created through interpersonal, social, and physical interactions (Pearce, 2005). Interpretation services are one of the many ways to foster the interactions between tourists and travel destinations. More important, using interpretative services for educational programs at national parks may create and

transform tourist attitudes and behaviors towards national parks leading to park stewardship. Interpretation services at national parks play a major role in stewardship education. Interpretation involves the cultivation of knowledge that changes tourists' behaviors, values, attitudes, and/or beliefs.

It is likely that information technologies have a great potential to increase interpretation effectiveness, stimulating the interest of tourists and enhancing the quality of their experiences; in particular for people who have an affinity for information technologies. More important, it is likely that the number of tourists who carry mobile or handheld information technologies such as MP3 players, cellular phones, PDAs, laptops, video cameras, digital cameras, and other personal technologies is rapidly increasing. With improvements in wireless technologies such as Wi-Fi and the 3G network, information technologies promise freedom through mobility that is a necessary element in any kind of tour. In addition, all these information technologies provide many avenues for interpretation services.

Podcasting technologies have emerged as a new technology to facilitate interactions between visitors and destinations and appear to play an important role in influencing tourist experiences. Derived from the terms "iPod" and "broadcasting," podcasting is a method for distributing downloadable multimedia files such as audio and video files through subscriptions to specific software (e.g., RSS) (Lee & Gretzel, 2006). Podcasting technologies seem to have a potential to help tourism organizations provide on-demand audio or video files for PCs or portable media devices.

Podcast tours have changed the nature of audio tours. In contrast to previous audiotape tours, podcast tours can contain countless hours of recorded information encompassing curators' comments, interviews with artists, opinions of scholars and experts, or even narratives created by actual tourists. In addition, tourists can download information from Web sites before their trip and carry the audio devices containing the information to their travel sites. In other words, podcast tours can provide customized information in a cost efficient way for tourists as well as for tourism organizations. Therefore, listening to audio tours on MP3 players will increasingly become popular and the availability of such audio tours will be expected by many visitors.

The podcast audience is growing at an impressive rate (eMarketer, 2007). Forrester Research (2007) estimated that nearly 46% of the U.S. population currently owns an MP3 player and it is projected that 48 million households will have an MP3 player by 2012. eMarketer (2008) reported that the total podcast audience reached 18.5 million in 2007 and will record 65 million in 2012 in the U.S. According to Zoomerang Market Research (2007), about 65% of U.S. teen Internet users and 44% of U.S. adult Internet users owned MP3 players in 2007 (as cited in eMarketer, 2007). The estimates of Brige Ratings (2006) showed that 70% of Internet users between the ages of 12 and 24 have listened to a podcast, 55% between ages 25 and 34, 38% between ages 35 and 49, and 12% of ages between 50 and 64 (as cited in eMarketer, 2007). According to Pew Internet & American Life Project (2008), about 27% of Internet users between the ages of 18 and 20 have downloaded podcasts compared to 20% between ages 30-49, 15% between ages 50-64, and 8% above ages 65 (as cited in eMarketer, 2009). This market

report indicates that not only the younger generation but even adults over 50 years old are using MP3 players to download or listen to podcasts (eMarketer, 2007).

According to the Travel 2.0 Consumer Technology Survey (PhoCusWright, 2008), 20% of U.S. mobile device users want to watch and listen to podcasts about possible travel destinations (as cited in eMarketer, 2009). Audio tours of museums were ranked as ninth in podcasts among U.S. podcast users in 2006 indicating that about 5% of surveyed respondents have listened to museum podcast tours (eMarketer, 2007). Museum downloadable audio tours rose to No. 21 on the iTunes list of the top 100 podcasts in the world (Kennedy, 2006). As the estimates show, the podcast tour is one of the fast-growing technologies along with the development of mobile technologies such as personal handheld devices and Wi-Fi. This evidence shows the potential of podcast tours at travel destinations.

NPS has started podcasting and has offered interpretive podcasts about historical, nature-related or environmental topics such as wildlife, history, and issues such as climate change and fire management (NPS, 2008). As a result, in 2008, 18 national parks offered podcast services and virtual tours, providing hundreds of audio and video programs on park websites or iTunes and more podcast tours will be on the way (NPS, 2008) (APPENDIX A). One of the most extensive collections of podcast tours is from Yellowstone National Park which provides more than 50 episodes to reach out to new and non-traditional audiences (NPS, 2008).

Statement of Problem

Since park rangers' interpretive tours of Yosemite and Yellowstone were introduced in the 1860s park rangers have offered a variety of park interpretation services (NPS, 2009), Park rangers have played a critical role in developing interpretative material for natural, historical, or cultural features and providing information through a variety of education programs to visitors. Ranger-guided programs have been considered as one of the more important interpretative media following self-guided tours and park brochures (National Park Service, 2003).

While the podcast tour has been recognized as one of the most effective communication methods for providing audio information, there are some debatable issues. First of all, it is often assumed that nothing can replace a personal experience in a national park (NPS, 2008, p. 1). According to an NPS survey, park visitors preferred ranger-guided programs over other types of non-personal interpretive media such as brochures, visitor center exhibits, wayside exhibits, audio-visual programs, self-guided tours, park newspapers, the Internet, and park radio stations (National Park Report, 2003). Second, it has been posited that creating podcasts and virtual tours may keep people, especially children, disconnected from the actual places (NPS, 2008) and therefore fosters the decline of park visitations.

At the same time, podcast tours are expected to enhance visitors' experiences or give them the opportunity to learn about a park they plan to visit or influence them even if they can not visit (NPS, 2008). Whether podcast tours are downloaded to portable devices or watched on computers, the free electronic presentations provide NPS with

another way to serve park visitors of all ages (NPS, 2008). NPS also believes that after learning about parks from online resources, people more likely want to visit parks and explore them on their own (NPS, 2008). More important, podcast tours can be customized to visitors' needs and potentially convey social components usually present in interactions between visitors and park rangers. Therefore, it is expected that NPS can enhance its visitor experiences and increase the number of park visitors with podcast tours.

However, little academic research has been undertaken to understand how travelers perceive podcast tours and how these tours influence tourist experiences. This study proposes that podcast tours as an interpretive service can possibly increase tourist experiences at national parks in a cost effective way and influence the desire for outdoor physical activities and recreation by providing engaging experiences.

Purpose of Study

The purpose of this study is to examine the effect of voices of podcast tours on the experience of tourists. In particular, this study explores how human voice enhances perceptions of social presence and mindfulness that lead to favorable visitor experiences and stewardship toward a national park.

Tourist experiences can be shaped through a variety of different factors such as landscape and sensescape (e.g., smellscape, soundscape, etc) (Urry, 1990). The concept of soundscape (e.g., human voice) is important as it emphasizes the tourist as a listener in the destination environment. These three main components – listener, sound, and

environment – are important concepts by which tourist experiences can be understood. Based on this, it is assumed that the narrative voice (sound) of podcast tours mediates the relationship between the listeners (i.e., tourists) and the environment (travel destination) and plays a role in creating tourist experiences and environmental stewardship. It is therefore important to understand sound (voice), the listener (tourist or visitor) and the environment (travel destination) as a system, not as isolated entities.

How podcast tours, as a newly emerging technology, could promote park visitor experiences and which voice components of podcast tours make visitor experiences different are important issues for park managers. Therefore, how and why the voices on podcast tours influence park visitors' experiences and stewardship is of practical interest.

A number of theories, conceptualizations and typologies of tourist experiences have been reviewed to describe contemporary tourism. It has been widely supported that the most distinguishing concept is constructivism, which argues that tourist experiences are socially and culturally constructed or created by individuals interacting with travel destinations (Bruner, 1994; Wang, 2000; Jamal, 2004). Based on this notion, this study proposes that tourist experiences are created by the social interaction between tourists and travel destinations through social cues conveyed by different information technologies.

Consequently, this study provides a theoretical contribution that suggests that a human touch, communicated through an information technology, creates and sustains a positive meaningful social interaction and a heightened attention state, both of which influence tourist experiences and stewardship toward travel destinations such as national

parks. Information technologies provide multi-sensory information to help tourists interact with their travel destination. In particular, human voices included in the soundscape appear to influence a tourist's interaction with a travel destination. Therefore, the findings will suggest how interpretation services provided through podcast tours should be designed to enhance tourist experiences and stewardship for national parks and other travel destinations.

Outline of Dissertation

This dissertation consists of six chapters. The first chapter provides an introduction including the study background and the purpose of study. Chapter II reviews relevant theories and research on the role of interpretation in tourism, information technologies, podcast tours, soundscape theory and voice, social presence theory, mindfulness theory, tourist experiences and stewardship. Chapter III presents the theoretical framework, and the discussion of the hypotheses. Chapter IV describes the research methodology including research design, experimental conditions, research procedures, measurement of each variable in the research framework, pre-test, and data analysis. Finally, Chapter V provides results and Chapter VI presents discussion and conclusions for this study.

CHAPTER II

LITERATURE REVIEW

Interpretation

Definition and Its Role

Interpretation is defined as a process of communicating the significance of a place or culture to enhance thought about places and make a connection between people and places (Tilden, 1977; Prentice & Cunnell, 1997; Stewart, Hayward, & Devlin, 1998). Interpretation-related activities and programs about travel destinations have an educational, informational and entertainment purpose to show the relationship between places and tourists (Tilden, 1977; Moscardo & Pearce, 1986; Moscardo, 1999). A number of scholars have demonstrated that interpretation enhances the enjoyment of place, conveys symbolic meanings, stimulates interest in the environment of travel destinations and facilitates attitudinal or behavioral change (Tilden, 1977, Prentice & Cunnell, 1997; Moscardo & Pearce, 1986). Therefore, interpretation is used to stimulate empathy towards heritage, conservation, culture, and landscape (Stewart et al., 1998).

A number of tourism scholars have studied interpretation effectiveness in a variety of tourist destinations such as museums, heritage sites, and national parks (Moscardo, 1996; Pearce, 2005; Tilden, 1977; Prentice, 2001; Stewart et al., 1998; Light, 1995). The studies showed that interpersonal and situational tourist factors as well as the physical setting usually influence the effectiveness of interpretation, resulting in tourist education, enjoyment, and attitudes and behaviors such as stewardship (Moscardo, 1999;

Frauman & Norman, 2003, 2004; Winkle & Backman, 2009; Benckendorff, Moscardo, & Murphy, 2006; Pearce, 2005; Moscardo, 1996).

Interpretation Services

Interpretive services are usually provided in visitor centers or through leaflets, display panels and activities (Stewart, et al., 1998). Interpretation is both a program and activity (Hwang, Lee, & Chen, 2005). As a program, interpretation establishes a set of objectives for information that a tourist should understand; as an activity, it requires skills and techniques to create understanding about travel destinations. There are two channels of interpretation: attended and unattended interpretation (Tilden, 1977). Attended interpretation service includes information provided in person, conducted activities, lectures, discussion, etc. Unattended interpretation includes signs and labels, self-guided trails, motor tours, publications, exhibits, and visitor centers (Tilden, 1977).

Chang, Chan, and Wang (1985) provided evidence that personal interpretation (e.g., attended interpretation) is the most direct and effective approach to interpretation services (as cited in Hwang, et al., 2005, p. 143). Chang and Lin (1992) argued that a human interpreter is an important feature within the interpretation service, for no matter how good other interpretation media may be, they cannot directly guide tourists into nature and travel destinations (as cited in Hwang, et al., 2005, p. 143). However, even though human interpretation services (e.g., park ranger) might be ideal for positively influencing tourist experiences and education effectiveness, NPS and travel destination organizations have tried to find alternatives to increase the opportunities for

interpretation services to park visitors and travelers. Recently it has been discussed that advanced information technologies provide opportunities for NPS and travel organizations to facilitate interpretation services (Webb, 2006; Gretzel & Jamal, 2007; Benckendorff et al., 2006; Stamboulis & Skyannis, 2003; Light, 1995).

Interpretation Services and Information Technologies

Information technologies (e.g., podcasts) have a role in replacing human interpretation services by facilitating the way tourists interact and connect with travel destinations (Benckendorff et al., 2006; Stamboulis & Skyannis, 2003; O'Dell, 2007). Consequently, greater emphasis has been placed on interpretative media and technologies (Prentice & Cunnell, 1997) and on how information technologies help destinations to convey meaning as well as create positive experiences.

Information technologies in tourism are categorized into site-driven and visitor-driven technology (Webb, 2006). While site-driven technology is mainly implemented and maintained by destination management, visitor-driven technology includes personal items that visitors bring for convenience and/or enjoyment, i.e. video cameras, digital camera, MP3 players, cellular phones, car navigation systems, PDAs, laptops and other handheld technologies. A recent study has shown that many tourists bring a variety of visitor-driven technologies on their trips (Webb, 2006).

With wireless technologies such as Wi-Fi, these information technologies promise freedom through mobility and enable travel destination management to provide multi-sensory information. They also help people interact with their environment.

Human Voice and Soundscape

Soundscape in Tourism

Soundscape studies are a practical and theoretical research domain for understanding post-modernistic tourism and tourist experiences by connecting listener and environment through sound. In the 1990s, tourism study was inspired by the visual apprehension of the world (Urry, 1990; Rojek, 1993). Therefore, tourists were considered as "collectors of views on objects and landscapes" (Franklin, 2003). However, in recent years, tourism scholars have pointed out the limitations of this approach by emphasizing the important aspects of tourists' other senses and bodies as well as embodied activities to understand tourist experiences (Franklin, 2003). Tourists have a desire to go to different places to taste, smell, listen, and feel; they may also want to participate in activities such as dancing, drinking, etc. (Franklin, 2003). The post-modernistic tourist no longer wants just to see authentic objects but to enjoy experiences created through a variety of sensory experiences and activities, thus soundscape has become an important component to create tourist experiences.

Soundscape in a tourism context involves a variety of sounds such as the human voice, sounds from nature (e.g., birds, rivers, seashores, winds), media sounds (e.g., video, audio technologies), foreign languages spoken by residents (e.g., French, Chinese), even noise (e.g., automobiles, construction sounds). Tourists experience sounds on their trip, interpret them and create unique experiences based on them. Therefore, soundscape should be considered a critical component for enhancing post-modern tourism experiences.

Soundscape in National Parks

For more than a decade, NPS has striven to understand, manage, preserve and restore natural sound environments, assuming that the soundscape has an impact on preserving park resources and increasing the quality of visitor experiences (Pilcher, Newman, & Manning, 2009; Miller, 2008; NPS, 2000). NPS has primarily focused on understanding the baseline natural sound environment and sound resources and sound levels in national parks, indentifying the level, nature, and origin of internal and external noise sources, and articulating desired future soundscape conditions to effectively manage sounds in natural areas (Miller, 2008; NPS, 2000).

National Park Service (NPS) (2000) also technically defines sounds as "a mechanical wave or an oscillation in pressure, stress, particle displacement, and particle velocity transmitted through solids, liquids, and gases – some types of which can cause a sensation of hearing" (p. 4). According to NPS (2000), in a national park setting, the soundscape is usually composed of both natural ambient sounds and a variety of human-made sounds and noise. NPS (2000) has emphasized that the natural soundscape is an important resource; therefore it is concerned with the preservation of natural soundscapes and the elimination, mitigation, or minimization of inappropriate noise sources defined as an unwanted or undesired sound, often unpleasant in quality, intensity or repetition.

Pilcher, et al. (2009) studied how the aural impacts of outdoor recreation and other sources of noise can affect the quality of the visitor experience in parks and related areas. Study results showed that hearing human-caused noise was judged to be annoying

and natural sounds to be pleasing to park visitors in Muir Woods. They also discussed

whether the acceptance level of sounds or noise might depend on visitors' characteristics

such as experience level, motivation, and place attachment. However, Pilcher, et al.

(2009) pointed out that research on experiential aspects of soundscape in parks is in its

early stages and little is known about the effectiveness of management practices as

applied to soundscape-related issues.

In sum, tourism experiences can be created by interactions through sound. In

travel sites, tourists listen to a variety of sounds such as human speech and narration,

resident languages, music, chatting and conversations, nature and the sound of animals,

noises and countless different sounds from the outer world. Tourists' experience of

visiting a destination could be different based on what they listen to. Tourists in turn

create their own experiences by selectively listening to specific sounds and combining

those sounds into a meaningful experience of a destination.

Soundscape Theory

Schafer (1977) describes the concept of soundscape as any portion of a sonic

environment. The concept of soundscape was developed for an ecological model to deal

with the growing problems of noise pollution and ways to design our environment

(Schafer, 1997). The concept not only emphasizes an interactive composition in which

the listeners can be soundmakers, but also the dynamic relationship between a

community and its soundscape in an increasingly urbanized and mediated society

(Daquet, 2002).

Truax (2001) expanded the notion of soundscape into a broader concept combining an interdisciplinary and communicational perspective. According to Truax (2001), the study of soundscape shows how individuals and society as a whole understand the acoustic environment through listening (Truax, 2001). The term soundscape is not just a synonym for "acoustic environment," but a basic term for "acoustic communication." Therefore, this approach emphasizes that listening is important in the soundscape to interpret the acoustic environment in the mind with active involvement or passive detachment. Truax (2001) points out that a relationship between individual and environment is created by listening, whether or not individuals are acutely sensitive or distractedly indifferent. Therefore, this study proposes that the soundscape concept provides suggestions about how sound components enhance tourist experiences. The number of sound components in a tourism environment can be conveyed through listening. These appear to play an important role in creating tourist experiences.

Along with the landscape and other sensescapes such as the smellscape, soundscape has also been analyzed to describe the tourist experience in a postmodern tourism era (Wang, 2000; Urry, 1990; Quan & Wang, 2004). According to Schafer (1988), the most significant proposition of soundscape is centered on the relationship between listener and the environment. Traditionally the approach to sound was devoted exclusively to musical or linguistic forms or it objectified sound through a series of measurements and qualitative descriptions (Daquet, 2002). However, the sound environment is now being considered from the perspective of the listener (Truax, 2001; Daquet, 2002). Soundscape has emerged as an important system of human

communication (Truax, 2001, p. 50). Therefore, soundscape should be studied to understand contemporary tourism phenomena (Franklin, 2003; Wang, 2000) as a communication model between tourists and travel destinations. Proposed by Truax (2001), the acoustic communication model is one of the theoretical foundations to explain the role of soundscape in creating tourist experiences.

Acoustic Communication Model

Truax (2001) developed a model of soundscape from an interdisciplinary and communicational perspective called the "acoustic communication model" (Figure 1). This approach not only emphasizes the interrelated characteristics of sound, listener, and environment, but also their importance for understanding messages and creating meaning that can be interpreted in a variety of contexts. The acoustic communication model emphasizes that listening is the key issue in communication via sound that provides the primary interface between an individual and the environment. Therefore, the acoustic communication approach is applicable to the tourist experience which is created by interacting with an environment. The following description explains why this model supports the creation of tourist experiences.
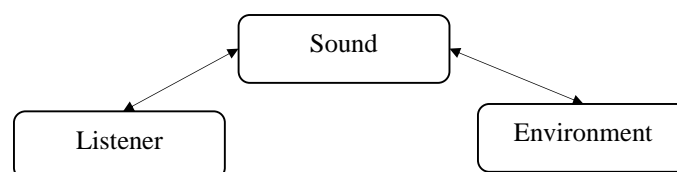
Fig. 1. Mediating relationship of listener to environment through sound.

First, the model focuses on understanding the interlocking behavior of sound, listener, and environment as a system of relationships, not as isolated entities. The three main components (listener, sound, and environment) are thus incorporated into the communicational framework of tourist experiences. Instead of considering just sound coming from the environment to a listener, the approach considers sound as a "mediator" to facilitate creating a relationship between listener and environment. Based on this, tourists, as listeners, interact with their destination environment through a variety of sounds and then by listening and interpreting the sounds can create their unique experience of a place.

Second, the acoustic communication approach concerns an exchange of information (Truax, 2001). Individual listeners engage in cognitive processing to accept the sound conveyed by the environment. According to Truax (2001), "while hearing is the process of acoustic energy in the form of sound waves and vibration, listening is at the core of a communication model of sonic information that is usable and potentially meaningful to the brain" (p.11). Therefore, the individual listener within a soundscape is not engaged in passive hearing; instead, there exists an active dynamic listening system of information exchange. In the tourism context, tourists listen both actively and passively depending on a variety of factors such as involvement, time constraints, motivation, etc. Active listening behavior means that tourists cognitively process information stimuli and hence interpret the incoming information to create their experience.

Third, the acoustic communication model focuses on soundscape as an important system of human communication in which the sonic environment can be understood. Truax (2001) uses the term "structure" to mediate between listener and environment (Figure 2). In the acoustic communication model, structure is critical because it enables sound to become meaningful.

Structure

Listener ←————————————→ Environment
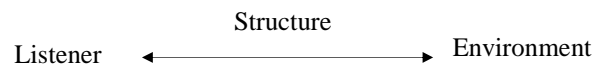
Fig. 2. System of acoustic communication.

According to Truax (2001), in the soundscape, structure includes not only the elements of the sound environment and their relationship, but also the pragmatic level of the context within which all sound occurs and without which those sounds cannot be interpreted. In the tourism context, a variety of interpretative services can be the structure through which tourists interpret incoming sound information.

Attention in the Acoustic Communication Model

The acoustic communication model considers listening a critical component in communication. This model supports the concept that listening implies an active role involving different levels of attention. According to Truax (2001), level of attention to listening may be distracted or in a state of readiness, and its scope may be global or focused on a particular source of sounds. However, in each case, listening can be

consciously controlled to involve full attention including receiving, attending and assigning meanings to messages (Wolvin & Coakley, 1993).

Truax (2001) discusses three levels of listening attention. The first is "listening-in-search" – the most active and conscious search of the environment for sound. Focusing on one sound while excluding others is central to the listening process. Listening where one actively searches for particular sounds, patterns of voice, etc. is similar to language processing (Truax, 2001). This concept provides that through attentive listening, tourists can be mindful of audio information to enhance their learning experience at a travel destination. The second level of listening is "listening-in-readiness." According to Truax (2001), even if attention is focused elsewhere (e.g., visual perception), the ear can still react to a particular sound signal that carries specific information, or corresponds to memorized patterns (e.g., baby crying at night, the voice of a friend). The context becomes essential in the communication process since the recognition or selection of a sound does not happen consciously. Tourists might listen to educational audio programs at this level while they enjoy sightseeing, brochures, or watch the behavior of other people. This type of listening depends on the quality of the particular sound environment in which it takes place. The third level of listening attention, "background listening" refers to a situation in which people are not listening for a particular sound. Generally, flat-line or steady sound and repetitive noise is quickly distinguished as white noise, preventing listeners from paying attention to the sounds or signals.

As in the acoustic communication model, information conveyed by sound would be one of the important elements in increasing the effectiveness of interpretation activities in tourism. However, level of attention may influence focusing on the interpretation. There is a variety of sounds at travel destinations whether or not tourists pay attention to them. The sounds range from the sound of the seashore, birds, plants, and human components such as other visitors which shape place meanings and experiences. Interpretation has to create sounds that draw attention. In particular, the human voice in acoustic communication is considered a critical component that can influence listeners' attention (Potter, 2000). Since the human voice can carry socially richer information other than the literal meaning of the denotative content through social cues (Pittman, 1994; Nass & Brave, 2005), the human voice appears to attract tourist attention and hence facilitate enhanced tourist experiences.

Role of Voice

Voice is one soundscape example. Individuals are exposed to an endless variation of verbal production such as speech, singing, and a wider range of nonverbal elements. According to Truax (2001), from birth, the acquisition of communicative auditory and vocal skills proceeds quickly and efficiently and the brain recognizes and interprets most voices.

Voice has been studied across a number of academic disciplines such as phonetics, communication, psychology, and to a lesser extent, medicine (Pittman, 1994)., Most researchers believe that voice quality influences the listener's perception of the

speaker and thus has an impact on interactions between people (Nass & Brave, 2005; Truax, 2001; Pittman, 1994; Siegman, 1987). For example, typical greetings and standard phrases uttered between people on meeting have little inherent meaning. Instead, the tone of voice and other nonverbal components support a reiteration of the relationship between the people involved. The non-verbal component (e.g., voice, facial expression) communicates messages that the speaker may not be aware of revealing (Nass & Brave, 2005; Truax, 2001; Pittman, 1994; Pearce & Conklin, 1971).

Voice carries much richer information than the literal meanings of its denotative content as well as social cues (Pittman, 1994; Nass & Brave, 2005). Humans are automatic experts at extracting the social aspects of speech (Nass & Brave, 2005). For example, people can detect differences between emotions based on tone of voice (Nass & Brave, 2005) and can also perceive social status, personality, and attitude; they can use vocal communication to determine group identity characteristics such as age, gender, occupation and geographic origins (Pittman, 1994; Nass & Brave, 2005). This social response to speech may even be extended from human speech to computer voices. A number of studies have shown that people recognize voice from computers and information technologies using the same rule and heuristics that they apply to humans (Reeves & Nass, 1996; Nass & Brave, 2005).

Although park interpretation services have provided audio tours that contain human voices for a long time, little is known about if, how and why the human voice, as one of the social characteristics of audio tours, influences tourist experiences. Therefore, it is necessary to explore if, how and why voices on podcast tours could influence tourist

experiences. This study proposes that interpretation services delivered by podcast tours which contain human voice (e.g., narration) increase social interaction and facilitate tourists' mindfulness while experiencing park environments.

Social Presence

The term social presence was first introduced in studies of interpersonal communications. Short, Williams and Christie (1976) initially provided a broad theoretical foundation for social presence theory by defining social presence as the "degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships" (p. 65). The concept of social presence is used to assess how much socially rich interpersonal interaction a particular medium can bring (Fulk, Schmitz, & Power, 1987; Walther, 1992; Short et al., 1976). This social presence theory has been applied to technology and computer-mediated communication environments in various academic fields (e.g., communication, education, marketing, etc.), describing interaction between two parties mediated by technologies.

However, these measures of social presence have been shown to relate more to the user's perception of a medium's ability or capacity to provide salience of another person as opposed to measuring the actual perceived salience of another person (Nowak, 2001). The approach tends to have limitations in understanding human-computer interaction since the definition of social presence is applicable only to technology users' experience of a real human through communication technology (Lee, 2002). However, in the computer interaction environment, individuals also interact with a virtual or

artificial entity or agent or with a person who does not communicate in real time. Therefore, it should be redefined to fit the concept of social presence in human-computer interaction.

Lee (2002) contrasted two types of virtual interaction experiences to redefine social presence suited to the human-computer interaction environment. The first type of virtual experience is not an experience of an actual object but a mediated experience. The second type evolves "simply when experienced objects are artificially created or simulated by technology" (Lee, 2002, p. 58). In other words, experienced objects do not actually exist in the real world or in real time, yet are experienced as if they actually existed and so interact in real time because of communication technologies. No matter how vivid the simulations are, the objects that communicate do not have any authentic connection to actual objects in real place or real time.

Based on this review, Lee (2002) redefined social presence as the psychological state in which the virtuality of the social experience is not noticed. Thus, social presence occurs when technology users do not notice the mediated nature of experiencing other humans and/or the artificiality of social actors (Lee, 2002; Lee & Nass, 2004). In other words, technology users sense that other intelligent beings coexist or interact with them in a virtual or imagined environment in real time (Lee, Park, & Song, 2005). The newly defined social presence is expanded to a more user-centered approach (vs. technology-centered approach) consistent with contemporary notions of presence as a psychological state (Lombard, 2000; Lee & Nass, 2004).

Media equation theory (Reeves & Nass, 1996) supports the concept of social presence defined by Lee (2002). The notion of the media equation is rooted in a study of social response to communication technologies based on interpersonal interaction studies that show how people interact with the real world. Media equation theory describes that "an individual's interactions with computers, television, or new media are fundamentally social and natural, just like interaction in real life" (p. 5). Media equation studies provide some empirical evidence that "all the rules applied to real life interaction apply equally well to media" (p. 5). Reeves and Nass (1996) argue that an understanding of the media equation is very important because it can enhance human feelings about interactions with media and information technologies as well as surroundings and environments. When media conform to social rules, people have a strong feeling toward social relationships and environments. In this sense, technology users do not notice when they are interacting with non-human technologies. Therefore, the more media and technologies are consistent with social rules, the more enjoyable the technology will be.

Effect of Information Technology on Social Presence

The amount of perceived social presence varies by type of medium (Short, et al., 1976; Walther, 1992). For example, while face-to-face communication yields a high level of social presence, computers have been found to have less social presence than other media due to the absence of nonverbal cues (Papacharissi & Rubin, 2000). Therefore, human-computer interaction tends to be less rich in social presence than non-mediated communication.

Research has shown, however, that there are many ways to enhance the degree of social presence with communication technologies. Technological advances have increasingly enabled computer-generated entities to mimic both the appearance and behavior of human beings by integrating voice, text, graphics and videos (Brent & Thompson, 1999). With mobile technologies, human entities rely on sound and voice because of screen size and mobility. Web sites can display increased social presence by adding a personal touch such as a personalized greeting or through pictures and texts that convey a personal presence in the same way as photographs and personal letters (Gefen & Straub, 2003). In other words, the availability of visual and personal-touch information may determine the level of social presence and hence affect consumers' perception of the information provider. Voices, as audio cues, can also be used to foster social presence. Accordingly, people have reported feelings of social presence in almost all mediated environments and have even responded socially to both human and human-like others as well as to computer interfaces (Nass & Moon, 2001; Reeves & Nass, 1996).

Based on this theory, this study proposes that tourists are likely to apply social rules to information technologies, when experiencing voices on podcast tours. As an example, tourists would perceive social interaction when they listen to information on a podcast tour through narration voice because the human voice can convey social cues. Thus, a tourist may perceive social presence when he or she listens to a podcast tour voice even though there is no actual human guide at the moment. Lombard and Ditton (1997) pointed out that as a social cue, voice enhances the illusion of interaction with a social entity. Voice is not merely a tool for communicating language; it also conveys a

very rich set of socially relevant information (Pittman, 1994). Listeners constantly and automatically extract relevant social information about a speaker through his/her voice (Nass & Gong, 2000; Truax, 2001). Therefore, this study assumes that voice, one of the components of soundcape, can enhance perceived social presence.

Mindfulness

Originating from the meditation field, mindfulness has been defined as a psychological process or outcome arising from events and experiences (Hayes & Feldman, 2004; Leary & Tate, 2007), or an individual trait or cognitive ability (Sternberg, 2000). In psychology, mindfulness is defined as an open and receptive attention to and awareness of present experiences (Brown & Ryan, 2003). Awareness is referred as to "the background radar of consciousness, continually monitoring the inner and outer environment and attention as a process of focusing conscious awareness, providing heightened sensitivity to a limited range of experiences" (Brown & Ryan, 2003, p. 822). Therefore, mindfulness is the sum of ongoing psychological experience processes and the quality of consciousness itself involving self-regulation of attention and present-focus (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Bishop, Lau, Shapiro, Carlson, Anderson, & Carmody, 2004).

A key characteristic of mindfulness is open or receptive awareness and attention which reflects sustained consciousness of ongoing events and experiences. Therefore, mindful people have a clear awareness of their inner and outer worlds, including thoughts, emotions, sensations, actions, and surroundings. Another key feature of

mindfulness is that a mindful mode of processing involves a voluntary, fluid regulation of attention and awareness states (Brown & Ryan, 2003). This concept explains that mindful people do not lose self-control to experience current events and hence increase recognition of the present moment which is an important component for enhancing tourism experiences.

Specially, mindfulness does not involve comparison, categorization, evaluation or introspection based on memory. In other words, mindfulness is not a type of cognitive or mental processing. Instead, mindfulness can be considered as a psychological state that can increase the readiness for cognitive processing, as attention and awareness are important antecedents of the conscious processing of information. Nevertheless, some scholars conceptualized mindfulness as a form of cognitive processing. For example, Langer and her colleagues (Langer, 1989, 1992; Bodner & Langer, 2001; Langer & Moldoveanu, 2000) conceptualized the dual concept of mindfulness and mindlessness. According to Langer (1992), mindfulness is "a state of conscious awareness in which the individual is implicitly aware of the context and content of information characterized by a state of openness to novelty in which the individual actively constructs categories and distinctions (p.89)". In contrast, mindlessness has been conceptualized as "a state of mind characterized by an overreliance on categories and distinctions drawn in the past aspects of the situation" (Lang, 2000, p89). As such, the dual concept focuses on an active cognitive operation that explains how people process perceptual inputs from the external environment to create new categories and seek multiple perspectives (Chatzisarantis & Hagger, 2007; Brown & Ryan, 2003). However, some scholars

emphasize the need to clearly distinguish the concept of mindfulness as an open and receptive attention to and awareness of current experience from cognitive processing models that require analytic modes of processing (Teasdale, 1999). This study adopts the notion of mindfulness as state of openness rather than as a mode of processing.

Differentiating Mindfulness from Other Concepts

There are several present-focus and attention concepts such as flow, immersion, and absorption. Proposed by Csikszentmihalyi (1975), flow is a state or a sensation that occurs when an individual is fully involved in an activity, and challenges and skills are optimally matched. The state is so satisfying that individuals are intrinsically motivated to continually repeat the activity (Csikszentmihalyi, 1988). Csikszentmihalyi (1988) outlined nine characteristics of flow: clear goal, immediate feedback, personal skills well suited to given challenges, merger of action and awareness, concentration on the task on hand, a sense of potential control, a loss of self consciousness, an altered sense of time, and experience.

Another attention-related construct is immersion. Studied mainly in virtual environments, immersion is "a psychological state characterized by perceiving oneself to be enveloped by, included in, and interacting with an environment that provides a continuous stream of stimuli and experiences" (Witmer & Singer, 1998, p. 227). Factors that encourage immersion include isolation from the physical environment, perception of self-inclusion in the virtual environment, natural modes of interaction and control, and perception of self-movement.

Finally, absorption is defined as "the experience of total attention involving a full commitment of available perceptual, inactive, and imaginative and ideational resources to a unified representation of the imaginable object" (Tellegen & Atkinson, 1974, p. 268). Accordingly, absorption means becoming focused on a narrow field of thought or imagery. An individual in an absorbed state is dissociated from the external environment and experiences an altered sense of reality and self.

The differences to mindfulness become apparent upon closer inspection of the concepts. First, in the flow, immersion, and absorption state, an individual's attention focuses on a certain activity or task or interaction between individuals and the activity to such an extent that he or she has little attention left to consider anything else. In contrast, as aforementioned, mindfulness has often been characterized by attention to the present-moment experience based on awareness of what is taking place in one's environment (Brown & Ryan, 2003). Mindful individuals do not narrow down their attention to only a certain activity and ignore everything else, but actively pay attention to the present moment through monitoring and observing (Brown, et al., 2007) the inner and outer environment. Consequently, the mindful state is inherently empirical in that it encourages individuals to seek the full facts and accurate knowledge of environments and phenomena (Brown, et al., 2007). As Marcel argued (as cited in Brown et al., 2007, p. 214), it is more akin "to participatory observation that involves awareness of experience while being immersed in it". This study considers mindfulness as an alert participation in the ongoing process of the experience. Accordingly, mindful individuals

are thus actively engaged, not passively resigned or dissociated from currently occurring experiences.

Second, in the state of flow, immersion, or absorption, it is easy for individuals to lose self-consciousness, in other words, self-attention, or self-regulation disappears (Csikszentmihalyi, 1975); individuals become isolated from inner and outer environments, leading to altered self-perceptions (Witmer & Singer, 1998; Tellegen & Atkinson, 1974). In contrast, in the state of mindfulness, individuals are very aware of and attentive to their inner states and their behaviors and hence are able to direct their subjective mental, emotional, and physical experience to self-regulation (Brown, et al, 2007; Bishop, et al., 2004). Mindfulness more clearly serves as a monitoring or observer function. According to Brown et al., (2007), "failing to bring sufficient attention to oneself tends to foster habitual, overlearned, or automatized reactions (e.g. flow) rather than self-endorsed and situationally appropriate reaction" (p. 216). Therefore, in the state of flow, immersion and absorption, individuals experience time distortion and their experience tends to become autotelic (Csikszentmihalyi, 1975), while this is not the case for mindfulness.

Different from those stated concepts, the first component of mindfulness involves the self-regulation of attention which is focused on immediate experience, thereby allowing for increased recognition of the present moment. The second component involves adopting a particular orientation toward the individual's experience in the present moment, an orientation that is characterized by curiosity, openness, and acceptance. (Bishop, et al., 2004).

Mindfulness in Tourism Research

Since the 1980's, Moscardo and her colleagues have studied the theory of mindfulness in tourism (Frauman & Norman, 2004; Winkle & Backman, 2009). This theory has been applied primarily to interpretation studies to understand how visitors respond to information or its presentation format (Pearce, 2005). Moscardo and other researchers have empirically examined mindfulness in different tourism communication and interpretation effectiveness contexts (Moscardo, 1999; Frauman & Norman, 2003, 2004; Winkle & Backman, 2009; Benckendorff, et al., 2006). These studies focused on finding not only the determinants of mindfulness in the form of communication factors (Moscardo, 1996) or interpersonal and situational factors (Frauman & Norman, 2004, 2003), but also the consequences of mindfulness such as enjoyment, satisfaction, and learning that is typical of tourist experiences (Moscardo, 1996).

Thus, mindfulness is considered to be an indicator of interpretation effectiveness. According to Moscardo's (1996) mindfulness model of visitor behavior and cognition (Figure 3), a variety of setting factors (e.g., varied/multisensory media, visitor control/interactive exhibits) and visitor factors (e.g., high interest in content, low levels of fatigue) lead to mindfulness or mindlessness that ultimately affects learning, satisfaction and understanding. In Moscardo's study, the mindful state is marked by active mental processing which involves the creation of new cognitive categories; the mindless state is characterized by mental passivity and behavior which involves little questioning or processing of new information. The core thesis of the model is that mindfulness as a cognitive state mediates the relationship between interpretation services

and tourist experiences (e.g., satisfaction, learning or understanding). The mindfulness model of cognitive processing emphasizes that mindfulness is a cognitive state where people are developing new routines, paying attention to the setting and its features and are open to learning (Moscardo & Pearce, 1986; Stewart, et al., 1998; Pearce, 2005).

However, it appears that the conceptualization of mindfulness proposed by Moscardo provides a limited perspective focused on a specific context such as the effectiveness of tourism interpretation. Although the concept of mindfulness developed by Moscardo is considered to be important to persuasive communication, it is conceptually similar to dual information processes such as the central and peripheral processing models studied by Petty and Cacioppo (1986) and used in attitude change literature (Pearce, 2005).

This study proposes that mindfulness does not involve cognitive operations involving evaluation, judgment, categorization, conceptualization, etc. Instead of considering mindfulness from an information processing perspective, this study argues, in accordance with Brown, et al. (2007), that mindfulness is a psychological state of "attention" to and "awareness" of "present-focused" tourism experiences that does not involve cognitive operations involving evaluation, judgment, categorization, and conceptualization but sets the stage for such processes to happen. Based on this conceptualization, this study includes four subdimensions of mindfulness: attention, present-focus, awareness, and non-judgment as depicted in Figure 4.
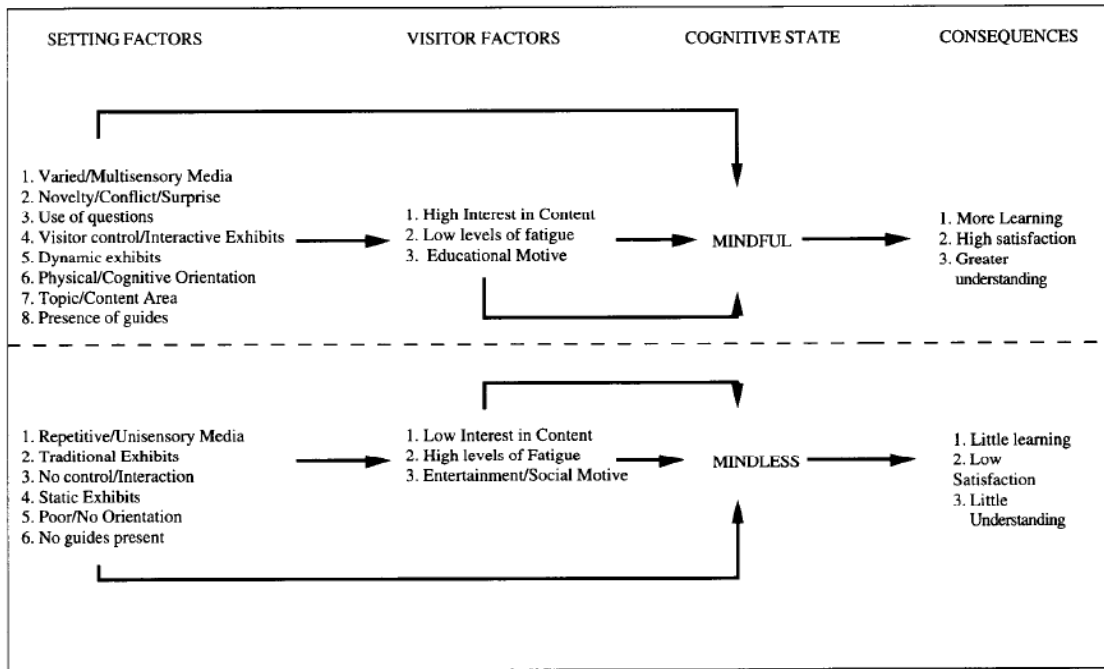
Fig. 3. Mindfulness model of visitor behavior and cognition proposed by Moscardo (1996).
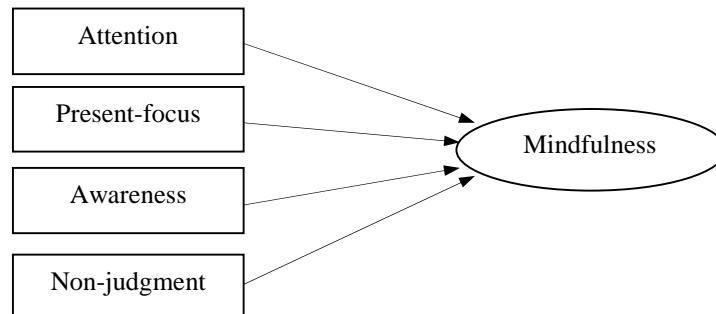
Fig. 4. Subdimensions of mindfulness.

With a review of the different ways in which mindfulness has been conceptualized and theorized, this study attempts to identify mindfulness as an important mediator between interpretation services provided by information technologies and tourist experiences that enhance stewardship.

Tourist Experience

Tourism marketers and managers have increasingly acknowledged the need to provide value-added experience and create a memorable experience (Goulding, 1999, 2000; Prentice, 2001; Prentice & Cunnell, 1997; Moscardo, 1996; Mossberg, 2007). More important, in the emerging experience economy (Pine & Gilmore, 1998), tourists have shown their desire to actively engage in creating experiences instead of passively seeing, watching, and/or learning about exhibits or artifacts. As a result, considering experience as the outcome or the product of tourism, contemporary tourism has increasingly offered travelers opportunities to enjoy experiences (Kesner, 2006). However, despite the growing attention to the changing tourism experience, definitions of the tourist experience are still controversial and unclear (Wang, 2000; Li, 1999; Quan & Wang, 2004; Uriely, 2004).

Review of Conceptualization of Tourist Experiences

Boorstin (1964) refers to tourist experiences as acts of consumption of mass tourism. McCannell (1976) argues that tourist experiences are an active response to modern life in search of authentic experience to overcome the difficulties of modern life.

In contrast, Urry (1990) maintains that the tourist experience is a "gaze" at what tourists encounter such as travel scenes, landscapes, or townscapes which are different from ordinary life. These approaches attempt to define the tourist experience as human activities or movement to escape from normal life or as a human gazing at something different from normal life.

Cohen (1979) argues that the tourist experience is not monolithic, proposing that tourist experiences mean different things to each individual. Based on this perspective, Cohen (1979) has developed a typology of five modes of tourist experiences that range from the quest for mere pleasure to the search for meaningful experience. According to Cohen (1979), the five modes of touristic experiences include recreation mode, diversionary mode, experiential mode, experimental mode, and existential mode. They are summarized as follows:

1) Travel as a recreational experience is a form of entertainment similar to other forms of entertainment such as movies, theater, TV. This type of tourist seeks enjoyable restoration and relief provided by various forms of mass entertainment to restore physical and mental powers and provide a general sense of well-being.

2) The diversionary tourists seek mere diversion. In this mode tourists engage in the pursuit of mere pleasure without any quest for meaningfulness.

3) Travel experience as experiential mode involves the modern notion of authenticity as something that exists elsewhere which can be experienced through traveling. This type of tourist enjoys observing the authentic life of others without any attempt to be converted or engaged in the other life.

4) Tourists in the experimental mode do not adhere to the spiritual center of their own society, but engage in an alternative in many different directions. Examples of experimental mode tourists are the younger, post-modern tourists: urban American, European or Australian youngsters who taste life in farming communities.

5) Existential mode travel experience is characteristic of the tourists who are fully committed to special experiences that are culturally and geographically external to their own society. Their travel to a remote place serves their desire to actualize and sustain their spiritual existence (Uriely, Yonay, & Simchai, 2002). In sum, tourists are diverse in terms of pursuing experiences.

According to Uriely et al. (2002), Cohen's work relates a variety of motivations and meanings to tourist experiences. However, Uriely, et al. (2002) argued that the typology ignores individuals who may be attached to more than one mode of tourist experiences and thus individuals might experience more than one mode across trips and even during a single trip. Therefore, since the 1990s several researchers have introduced the perspective of postmodern tourism and tourists (Wang, 2000; Franklin 2003; Uriely, 2004). In particular, Uriely (2004) identified four core conceptual frameworks in the study of the tourist experiences: "the tourist experience (1) turns from differentiation to de-differentiation of everyday life and touristic experiences; (2) shifts from generalizing to multi-conceptualizing; (3) transits from the toured object to the tourist subjective negotiation of meaning; and (4) moves from decisive statements to a relative and complementary interpretation (p. 199)".

A number of researchers have developed different categorizations of the tourist experience (Kesner, 2006) in travel, museum, and recreation contexts:

- Object experiences, cognitive experience, introspective experience, and social experiences (Doering, 1999; Pekarik, Doering, & Karns, 1999)

- Social-cultural, cognitive, and psychological factors, and physical and environmental conditions, (Goulding, 2000)

- Excitement, playfulness, contemplation, and learning (Kotler & Kotler, 2000).

- Aesthetic (visual and sensory), recreational, sociable, learning, celebratory and enchanting experiences (Kotler & Kotler, 2000)

Introduced by Pine and Gilmore (1998), the conceptualization of experience is critical to explain the tourist experience. According to Pine and Gilmore (1998), experiences consist of two dimensions of participation and connection ranging from passive to active in terms of participation and from absorption to immersion in terms of connection. Mixing the two dimensions, they proposed four areas where different types of experiences could be placed: entertainment, education, escaping experience, and aesthetic experience.

Creative Tourist Experience

While the traditional notions of tourist experiences have suggested a variety of management strategies to provide quality tourist experiences, the traditional conceptualization of the tourist experience is no longer effective in a dynamic landscape of travel and tourism (Gretzel & Jamal, 2007). It is argued that postmodern tourists

create their tourism experiences by actively putting together travel-related resources in space and place and participating and engaging in a variety of activities (Prentice, 2001). Therefore, tourist experiences take shape in the minds of tourists (Anderson, 2007).

Developing and assessing tourism experiences for this creative tourist class is one of the emerging issues for a better understanding of tourist experiences (Kang, Gretzel, & Jamal, 2008). Gretzel and Jamal (2007) discussed a new type of tourism consumer called the "creative tourist" after Richard Florida's (2002) *Creative Class* (as cited in Gretzel & Jamal, 2007). They tried to re-conceptualize the newly emerged touristic consumers and their tourism experiences since the old categories and components do not apply. The core of the idea is that the new concept of creative tourist leads to "creative exploration of people, places, activities and things (p. 26)". According to Gretzel and Jamal (2007), new ways of thinking and making sense of the world redefine experience by believing the concept of creative tourist and creative experiences are beyond the boundaries of domains and categories. Based on this theory, they argue that urban tourist destinations and nature-based experiences are rich, participatory and creative. They also pointed out that play, aesthetics and empathy are characteristic of new creative experiences.

More important, new technologies have influenced the growing creative tourist class and creative tourism experience (Gretzel & Jamal, 2007). A variety of currently advanced information technologies helps creative tourists create their experiences even pre-, on- and post-trip. Tourists can create their pre-trip experience by searching information and communicating with other individuals online. They also bring their

mobile technologies to connect to the Internet any place and time to make their trips rich and hence create their on-trip experiences. In addition, they can reconstruct their trip experiences using technologies (e.g., making videos, editing digital pictures, sharing their experiences through social networking sites). These newly emerging tourist activities with technologies will be an important component to be considered in studying tourist experiences (Gretzel & Jamal, 2007).

Measuring the Tourism Experience

Tourist experiences broadly range from physical experiences to emotional experiences. This study defines the tourist experience as a constant flow of thoughts and feelings that occurs during moments of consciousness (Carlson, 1998) which occur through highly complex psychological, sociological, and cognitive interaction processes. Tourist experiences are socially and culturally created through a variety of sensescapes such as soundscapes, smellscapes, and tastescapes in addition to visual landscape or townscape (Urry, 1990).

Three facets of tourist experiences (learning, enjoyment, and escape) are considered here. First, learning experience is defined as an experience by which tourists obtain information about new things and acquire novel skills. Second, enjoyment experience refers to the extent to which the tourist experience is perceived to be enjoyable apart from the utilitarian value of the experience (Davis, Baggozzi, & Warshaw, 1992). Third, escape experience is defined as an experience by which tourists can be apart from the constraints of ordinary life.

Pearce (2005) and Ryan (1997) emphasized education and entertainment as important elements of the tourist experience, considering them as the consequence of interpretation efforts called "edutainment," a mixed concept of education and entertainment. Pearce (2005) stresses that the combination of education and entertainment is functionally equivalent to providing interpretation that is both informative and interesting. Education and entertainment therefore are connected to interpretation services.

This study uses the terms learning and enjoyment instead of education and entertainment as proposed by Pearce (2005) and Ryan (1997). While education and entertainment appear to center more on practices and programs designed and controlled by a travel organization, learning and enjoyment imply an experience approach that can be actively controlled by tourists. Learning experiences are different from education experiences. Individuals actively gain an understanding through self-discovery when they learn, while in education, individuals are passively instructed in skills and knowledge (Twiss-Garriety, 2000; Pine & Gilmore, 1999). Many tourists expect to learn new things or acquire novel skills about cultures, nature, and the environment (Pearce, 2005). Tourists actually can enhance their knowledge and skills through tourism experiences (Pine & Gilmore, 1998; Oh, Fiore, & Jeoung, 2007; Stamboulis & Skyannis, 2003).

Escape experience has also been identified as an important aspect of tourist experience. Even though post-modern tourism emphasizes de-differentiation between tourism and everyday life, escaping from ordinary life is still one of the most desired

motivations in contemporary tourism (Pearce, 2005). Many tourists want to escape from difficult and mundane everyday life events to see and experience the new and unusual (McCannell, 1976; Urry, 1990). Therefore, escape experience is considered as an important dimension of experience in this study.

Stewardship

Environmental stewardship has been considered as a land ethic in which humans are an integral part of the natural system, working in harmony with other species (Layard & Delbrouck, 1994). However, it has been pointed out that there have been difficulties in enhancing stewardship initiatives because of a poor understanding of the concept itself (Mitchell & Brown, 1998). Stewardship has been defined and interpreted in a variety of ways, meaning different things to different groups and people (Dombeck, 1997; Burger & Gochfeld, 2001; Hancock, 2007). Accordingly, the ways the general public understands stewardship have not been clearly investigated (Williams & Magsumbol, 2007).

However, a number of scholars have provided definitions for the concept. Phillips (1998) defined environmental stewardship as "recognizing and cultivating a sense of custodianship towards the environment on the part of communities and individuals who make direct use of natural resources" (Phillips, 1998, pp.v). Contemporary usage focuses on stewardship as "a protective restraint, a taking care of resources through nurturing and thrifty management of their use" (Leopold, 1979, p. 228). McCuddy and Pirie (2007) pointed out that stewardship aims to utilize natural

resources to the benefit of the current generation while preserving those resources and the environment necessary to meet the needs of future generations. At the heart of this philosophy is the idea that, with careful planning and protection of natural systems, future generations can still use these resources (Burger & Gochfeld, 2001; Brown, 1998). However, stewardship is more than the careful and responsible management of our natural resources –"it involves respect, preservation, and actions toward the betterment of our natural resources regardless of economic gain" (Hancock, 2007, p. 36). The following description and definition also provides concept basic understanding of stewardship (DeMoranville, 2002):

> *Stewardship is an individual belief in the connectedness of all things in the natural world. Its adherents seek continuously to improve their knowledge and understanding of this connectedness, in order that they may act to affect positive environmental and social change. Stewards are driven to do this by their love of the Earth and their sense of responsibility to preserve its wealth for future generations (p.3).*

The study of stewardship offers an enormous amount of potential for understanding socially responsible behavior (Hernandez, 2008). However, while a variety of education and information programs have been provided to increase environmental stewardship, the right environment for participation, partnerships, and legal frameworks has not been provided (Mitchell & Brown, 1998).

A number of studies found out that an individual's attitudinal stewardship and behavioral stewardship are related. Attitudes refer to an association with and evaluation of an object, incorporating beliefs, feeling, and inclinations to the object (Leiserowitz,

Kates, & Parris, 2006). Attitudes are positive, negative, or neutral views of the object, which may be a person, action, or event. Attitudes focus on something quite specific, such as connection to the place (Dietz, Fitzgerald, & Shwom, 2005). Behavioral stewardship refers to intentions to engage in stewardship behaviors and is defined as individuals' willingness to participate in a variety of activities (Hancock, 2007). In particular, intentions to engage in stewardship behavior describe the willingness to preserve natural resources by cooperating with environmental organizations (Hancock, 2007). A number of studies have shown that individuals who have attitudinal stewardship have concerns about their area and try to spend their time and effort engaging in various activities to protect and preserve the natural environment they appreciate and care for (Donald, 1997; Lerner 1986). In the context of this study, stewardship refers to care and concerns for a national park.

CHAPTER III

THEORETICAL FRAMEWORK AND HYPOTHESES

It is hypothesized that emerging technologies have the potential to increase perceived social presence and mindfulness through voice and that increased perceived social presence and mindfulness result in more positive tourist experiences and enhanced stewardship for national parks. Specially, this study proposes that the narration style used in podcasting is important in influencing the perception of social presence and mindfulness.

Effect of Multiple Sources

The source of messages is one of the most important variables in human communication research (DeBono & Harnish, 1988; Sundar & Nass, 2000). The source refers to the "who" which conveys the message or information. The concept of the message source has been studied most widely under the context of source effect studies (Wilson & Sherrell, 1993) which have manipulated communicator characteristics to assess audience biases with respect to communicators and acceptance of the messages they deliver (Sunder & Nass, 2000). To measure the source effect, the source of a message has been typically presented as credible or non-credible (credibility), attractive or unattractive (attractivity), and similar or dissimilar (similarity) (Wilson & Sherrell, 1993).

Another fundamental element of source effects is whether the source is comprised of a single individual or multiple individuals. Harkins and Petty (1981a,

1981b, and 1983) defined this effect as "multiple source effect" and showed that

multiple sources have a greater impact on persuasion than a single source (Raphel, 1997;

Harkins & Petty, 1981a, 1981b, 1983). A number of studies have shown that people who

were exposed to multiple sources tended to process the message more diligently than

people who were exposed to a single source. Even when individuals interact with

technologies, they equally apply all the rules applicable to real human interaction

(Reeves & Nass, 1996). In the information technology context, Lee (2002) showed that

people respond more socially to multiple voices from computers than a single voice. As

discussed in Chapter Two, voice conveys socially rich information. Listeners

automatically extract social information from information narrated by human voice

(Pittman, 1994; Nass & Brave, 2005). The more consistent with social and physical rules

technologies are, the stronger the bias toward social relationships with the technologies.

Therefore, humans appear to extract the social aspects of speech more from multiple

voices than single voice narration (Nass & Brave, 2005). Therefore, this study

hypothesizes the following:

Hypothesis 1a: Multiple voices included in a podcast tour will lead to greater perceived social presence than a single voice.

Information on podcast tours conveyed by human voice enhances mindfulness

that leads to enhanced tourist experiences. Orienting response theory explains why park

visitors respond to human voice by paying attention to the park environment or

interpretation information. The theory was first proposed by Pavlov (1927) to describe a

reflex that causes an immediate response and attention in organisms to a change in their

environment. Pavlov (1927) referred to the orienting response as the 'What-is-it?' or the 'investigating' reaction, in other words, an immediate response and attention to sudden change. This definition describes the first step of the mindful state because in the orienting response people are motivated to be aware of a current event or experience and then pay attention to it.

Modern experimental studies of attention in media psychology regard orienting response as "an attention reaction evoked by certain categories of stimuli, for which the resulting response is composed of an organized set of behavioral and physiological responses" (Lang, 2000, p. 55). The stimuli that have a potential to elicit an orienting response may be categorized as follows: novel, moving, meaningful, or surprising (Potter, 2000). Therefore, much of the research on orienting response to structural features of media has focused on visual stimuli such as video, animation, etc. In contrast, some research has found that changes in auditory stimuli can also elicit an orienting response (Potter, 2000).

Watt and Welch (1983) were among the first to suggest the orienting response as a mechanism that can explain why audio features of television attract attention back to the screen. They found that "changes in audio track over time produce higher levels of attention, possibly because of an orienting response that directs attention to novel or strange stimuli in the viewer's environment" (p. 94). Potter, Lang, and Bolls (1998) also found that radio programs having structural audio features elicited an orienting response in listeners and caused the listeners to pay attention to the program. The chosen structural audio features for investigation were sound effects, voice changes, gender

voice changes, funny voices, commercial onsets, jingle onsets, song onsets, silence, and channel changes. The results showed that listeners exhibited an orienting response to eight of the nine auditory structural features (except for channel changes) (Potter et al., 1998). This study theorizes that a voice change in a message may signal the beginning of new content or information and hence the novelty causes an orienting response.

The orienting response theory explains why multiple voice manipulations on podcast tours as new voices/voice changes create novelty and attract attention that may lead to mindfulness.

Hypothesis 1b: Multiple voices included in a podcast tour will lead to greater mindfulness than single voices.

Effect of Narration Style

Research in psychology has discovered that people react differently to situations that involve personal reference in narration and speech as well as text messages (Moreno & Mayer, 2000). Self reference effect (SRE) explains this phenomenon. Since Rogers, Kuiper, and Kirker (1977) introduced SRE, the term has been used to describe the process whereby an individual's reference to oneself leads to a better learning process (Czienskowski & Giljohann, 2002) because SRE facilitates information processing by relating it to one's personal aspects (Burnkrant & Unnava, 1995).

Based on the concept of SRE, Mayer, Fennell, Farmer, and Campbell (2004) divided narration style into two types: (1) conversational style (using first person or/and comments directed at the learner) and (2) formal style (using third person and no comments directed at the learner). Some researchers used high self-referencing and low

self-referencing in messages or speech (Burnkrant & Unnava, 1989, 1995). However, the different terms implicitly contained similar operational definitions.

SRE studies showed that personal conversation style (high self referencing) in narration is more effective in terms of learning than formal conversation style (low self-referencing) (Mayer, et al., 2004). Based on the concept of Mayer, et al., (2004), this study categorized narration style into two types: conversational narration style and formal narration style.

Self-reference information using "you," "yours", or comments targeted at a listener represents a social cue in communication that can influence perceptions of social presence. According to social agency theory (Mayer, Sobko, & Moutone, 2003), social cues in a multimedia message can prime the social conversation schema in learners. Graesser, Bowers, Olde, and Pomeroy (1999) observed that learners were more aware of the narrator when the narrator spoke in the first person rather than in the third person. More importantly, social agency theory (Mayer, et al., 2003) is based on the idea that the learner can interpret multimedia learning as either a case of information delivery or a case of social communication. If the learner receives a multimedia message with strong social cues (high self-referencing), the learner is more likely to interpret the episode as a case of social conversation. People automatically and unconsciously respond socially and naturally to media and automatically use social rules from real life to guide interactions with it (Reeves & Nass, 1996). Therefore, this study proposes that park visitors are more likely to perceive social presence when they listen to conversational

narration containing high self-referencing phrases or words rather than when they listen to formal narration without self-referencing.

Hypothesis 2a: Conversational narration included in a podcast tour will lead to greater perceived social presence than formal narration.

Burnkrant and Unnava (1989) argue that SRE occurs because self-referencing increases personal relevance to subjects and increased personal relevance motivates people to engage in greater elaboration of issue-relevant arguments. The central aspect of self-referencing indicates that when people experience information containing personal referencing word(s) or phrase(s), they tend to process information by relating it to self-structures and pay attention to the information (Rogers, et al., 1977).

In education, a number of experimental studies have revealed that self-referencing information influences learning effectiveness (Bellezza, 1984; d'Ailly, et al., 1997; Moreno & Mayer, 2000; Mayer, et al., 2004), and elaboration of processing (Bower & Gilligan, 1979; Kendzierski, 1980; Brown, Keenan, & Potts, 1986). In the field of marketing and consumer behavior, it has been found that self-referencing influences attitude change and brand evaluation (Burnkrant & Unnava, 1995; Bone & Ellen, 1992; Debevec & Lyer, 1988). Marketing information containing self-referencing words or phrases influences problem solving elaboration (Keller & Block, 1996), recall and recognition (Baumgartner, Sujan, & Bettman, 1992; Meyers-Levey & Peracchio, 1996; Sujan, Bettman, & Baumgartner, 1993), and social interaction (Mayer, et al., 2003; Sandelands & Calder, 1984).

Similarly, Bargh (1982) suggested that people develop an automatic attention response to self-relevant information. Moray's (1959) experiment showed that a subject's name was one of the self-references that can make subjects pay attention to a listening task in an experimental study. Geller and Shaver (1976) found that the time spent to name the color of a stimulus word was greater for self-referring information than for neutral words. Moran (2006) also found that self-relevant information is able to grab attention towards itself upon mere presentation.

Given this discussion, this study proposes that conversational narration including self-references will influence mindfulness, which is defined as an open and receptive attention to and awareness of the present experience. Audio tour listeners can be assumed to be more mindful when listening to conversational narration. Thus, this study suggests the following hypothesis.

Hypothesis 2b: Conversational narration included in a podcast tour will lead to greater mindfulness than formal narration of a podcast tour.

Effect of Mindfulness on Social Presence

Research regarding the effects of mindfulness on social relationships is a newly emerging area of investigation (Brown et al., 2007). Brown and Ryan (2003) supports that characterized by receptive attentiveness, mindfulness may facilitate a willingness to take interest in the partner's thoughts and emotions, and may also increase the ability to attend to the content of the partner's communication while being aware of the partner's affective tone and non-behavior (as cited in Brown & Ryan, 2003). The open, receptive and non-evaluative description of mindfulness may be important to predicting the

outcomes of relationships between people. Brown et al. (2007) also claim that mindfulness may promote interaction styles that enhance overall relationship quality, making people attentive to and aware of current interactions. Even though the study of the effects of mindfulness on social relationships has not yet shown much empirical evidence, it appears that enhanced mindfulness influences attention to and awareness of current relationships and connectedness and thus impacts the communication and social exchange quality. Therefore, this study hypothesizes the following.

Hypothesis 3: Mindfulness has a positive influence on perceptions of social presence.

Effect of Social Presence on Tourist Experiences

A number of empirical studies has shown the consequences of perceptions of social presence. For example, perceived social presence leads to increased emotional, and cognitive processing as well as changes in attitudes and behaviors (Lee, 2002). Further, social presence can influence users' arousal, involvement, social judgment, attention, social interaction and relationships, trust, persuasion, learning effect, enjoyment, satisfaction, positive emotion, improved task performance and skill training, etc. (Lombard & Ditton, 1997; Lee, 2002). These results provide a rationale for voice-induced social presence to enhance tourist experiences.

First, some empirical studies have highlighted that the perception of social presence induces information processing, particularly systematic processing. For example, Skalski (2004) posited that social presence heightens attention to the message argument, leading to message involvement. This involvement increases systematic

information processing with a positive effect on behavioral intention. Skalski (2004) argued that the findings expand the relationship between information media effect and information processing by adding the construct of social presence as a mediator. Social presence increases the motivation to process information and heightens involvement, thus resulting in increased systematic processing. The following hypothesis is investigated:

Hypothesis 4a: Greater perceived social presence leads to a greater learning experience.

Enjoyment is another construct for evaluating the tourist experience. In this study, enjoyment refers to the extent to which a tourist experience is perceived to be enjoyable apart from the utilitarian value of the experience based on Davis, Baggozzi, and Warshaw (1992). Traditionally, human-computer interaction has been concerned with work and work systems, thus primarily focusing on efficiency and effectiveness in the design of technologies. However, enjoyment has become a major issue as information and communication technology has moved out of the office and into the living room (Blythe, Overbeeke, Monk, & Wright, 2003). Enjoyment is also one of the important aspects of tourist experiences. As discussed above, tourists actively pursue enjoyable experiences during a trip. Creating a positive affective response is critical for influencing consumers' information processing, judgment, attitudes and behaviors (Bagozzi, Gopinath, & Nyer, 1999).

Enjoyment is a subjective experience that might be understood in relation to the theories of motivation and social support (Brandtzeg, Folstad, & Heim, 2003). In

particular, Monk, Hassenzahl, Blythe, and Reed (2002) pointed out that supporting social interaction is important in designing systems that convey enjoyable experiences. Brandtzeg, et al., (2003) argued that co-activity (doing things together) and social cohesion (being part of or attracted to a community) increase feelings of reward, pleasantness, and enjoyment. They explained that the effect of co-activity on enjoyment could be supported by the social facilitation theory proposed by Zajonc (1965). According to social facilitation theory, it is easier, and more rewarding and motivating to do things in the presence of another, because the mere presence of others is arousing. Zajonc (1965) also maintained that social cohesion is related to affiliation that occurs because social contact is rewarding, and leads to emotional happiness.

This social connection might provide insight into how perceived social presence makes the tourist experience enjoyable and hence what should be considered when designing audio tours. Existing empirical research shows that providing multimedia elements that induce perceptions of social presence such as graphics, audio, and videos, is considered significant for increasing the level of enjoyment of a Web site (Lee, 2002; Lombard & Ditton, 1997). The impact of social presence on enjoyment has been conceptualized by several researchers (Lombard & Ditton, 1997) and empirically tested (Cyr, Hassanein, Head, & Ivanov, 2006). Therefore, the following hypothesis is tested:

Hypothesis 4b: Greater perceived social presence leads to a greater enjoyment experience.

Social presence appears to lead to escape by increasing the immersion state. Lombard and Ditton (2000) discussed the general "presence" concept by providing six

universal dimensions. They define presence as "the perceptual illusion of non-mediation." Accordingly, the term perceptual state is a phenomenon that involves "continuous responses of the human sensory, cognitive, and affective processing systems to objects and entities in a person's environment" (Lombard & Ditton, 2000 p. 1).

One of the conceptualizations of presence emphasizes the idea of perceptual and psychological immersion. According to Lombard and Ditton (2000), perceptual immersion is the degree to which a virtual environment submerges the perceptual system of the user; and psychological immersion occurs when users feel involved absorbed, engaged, and engrossed. In particular, this psychological immersion state is typically described as media users' sense of immersion, involvement, and engagement in the mediated environment (Lombard & Ditton, 2000).

Park visitors seem to be able to immerse, involve, and engage themselves in audio tours and park environments when they feel social presence. Such immersion should facilitate escape from ordinary life as it increases presence in the current environment. Actually, there is no empirical study to show the relationship between social presence and escape. Based on conceptualization and related empirical studies, this study hypothesizes that the more park visitors feel social presence that leads to perceptions of interaction with the park environment, the more they will be able to feel presence in the park environment and experience escape from home or ordinary life or work.

Hypothesis 4c: Greater perceived social presence leads to a greater escape experience.

Effect of Mindfulness on Tourist Experience

Empirical studies based on mindfulness theory have found that mindfulness has a positive effect on learning and creative thinking and cognitive commitment (Brown & Ryan, 2003; Brown, et al., 2007). Based on this conceptualization, this study proposes that mindfulness is an important factor enhancing tourist experiences such as learning. Mindfulness refers to a level of attention to and awareness of a particular current environment. Therefore, mindful individuals invoke multiple perspectives and recognize a particular environment or event (Langer, 1992). Therefore mindfulness appears to increase readiness for cognitive processing. Based on this conceptual argument, this study suggests that mindful visitors engage in active and fluid information processing which increases the sensitivity to context; allowing for multiple perspectives and abilities to draw novel distinctions (Burgoon, Berger, & Waldron, 2000). Therefore, the following hypothesis is tested.

Hypothesis 5a: Greater mindfulness leads to a greater learning experience.

Mindfulness is associated with wellbeing and happiness (Ryan & Deci, 2000; Martin & Erber 2005; Brown & Ryan, 2003). Therefore, mindfulness appears to lead to pleasurable experiences. Mindfulness is described as "a quality of consciousness that is characterized by clarity and vividness of current experience and functioning and thus stands in contrast to the mindless, less aware states of habitual or automatic functioning that may be chronic for many individuals" (Brown & Ryan, 2003, p. 823). Mindfulness is important for disengaging individuals from automatic thoughts, habits, and unhealthy

behavior patterns and hence plays a key role in facilitating informed and self-endorsed behavioral regulation which has been associated with enhancement of well-being (Ryan & Deci, 2000).

Brown and Ryan (2003) state that since open awareness and attention are conceptual dimensions of mindfulness that enable people to identify their needs and wants and filter out unwanted responses. Open awareness and attention may be especially valuable to facilitate the choice of behaviors that are consistent with needs, values, interest, and concerns by filtering out unnecessary background information. However, automatic processing (e.g., mindlessness) easily precludes considerations of options that would be more closely related to needs and values. In this sense, mindfulness may foster well-being through self-regulated activity and fulfillment of basic psychological needs (Brown & Ryan, 2003).

Lebel and Dube (2001) provided evidence that people whose attention was focused on the sensory experience of eating chocolate reported more pleasure than individuals engaged in a distracting task while they were eating chocolate. Other research found that activities that require engagement with and attention to what is occurring yield considerable enjoyment and a felt sense of vitality (Csikszentmihalyi, 1990; Deci & Ryan, 1985). In this sense, mindfulness defined as an open and receptive attention to and awareness of currently occurring experiences would enhance enjoyment. Therefore, this study suggests the following hypothesis:

Hypothesis 5b: Greater mindfulness leads to a greater enjoyment experience.

This study proposes that mindfulness can enhance the escape experiences of park visitors. Hayes, Strosahl, and Wilson (1999) pointed out that we do not simply live in the world; we live in the world as we view it, construct it, or interpret it, that is, we attend to foster cognitive operations on what we encounter. Unlike this cognitive processing, the mindful mode of processing is non-conceptual (Brown et al., 2007). "Mindfulness does not compare, categorize, evaluate, introspect, reflect upon events or experiences based on previously constructed memory structure" (Brown & Ryan, 2003, p. 213). Instead of conceptualizing the world in structured experiences, mindful people have a non-inference with experience by allowing inputs from current experiences to enter awareness by simply noticing what is taking place. Brown, et al. (2007) state that "thoughts including mental images, narratives, and other cognitive phenomena are less likely to be colored by beliefs, prejudices and other biases that are not supported by objective or experiential evidence" (p. 213).

These theoretical and conceptual reviews suggest that mindful tourists can focus on current experiences not accessing their memories of previous experiences. Therefore, the present study hypothesizes the following statement.

Hypothesis 5c: Greater mindfulness leads to a greater escape experience.

Effect of Tourist Experience on Stewardship Toward National Parks

Several scholars have studied the types of programs and processes that influence stewardship in a national park (Williams & Magsumbol, 2007; Stern, Powell, & Ardoin, 2008; Davis, 2005). For example, Stern, et al. (2008) investigated the influence of 3- and

5-day residential environmental education programs at the Great Smoky Mountains Institute at Tremont on participants' connections with nature, environmental stewardship, increasing interest in learning and discovery, and awareness of the Great Smoky Mountains National Park. They found significant short term positive effects of the programs on stewardship. Davis (2005) conducted an experiment to test the effect of visitors' experiences with ecological signs on increasing stewardship. Davis (2005) argued that knowledge of ecosystem structure and functioning is necessary to increase stewardship. In sum, environmental education increases knowledge, behaviors, values, attitudes, and/or beliefs related to stewardship (Chamberlin, 1997). Based on these empirical studies, this study proposes that as an interpretation service program, a podcast tour can influence learning experiences that, in turn, affect attitudinal stewardship for national parks.

Hirschman and Holbrook (1982) posit that the consumption experience can be intrinsically satisfying when the experience provides pleasure to the senses, fun, feelings, and fantasies. They consider these forms of pleasure as the experiential (hedonic) value of the consumption experience. According to Holbrook and Hirschman (1982), hedonic value is different from instrumental (utilitarian) value, which entails consumption efficiency based on logical assessment of products. In this study, enjoyment and escape are considered as hedonic (experiential) values derived from visitation experiences at a national park. Several studies (Daboholkar & Bagozzi, 2002; Davis, et al.,1992; Davis, Bagozzi, & Warshaw, 1989) have shown that the hedonic value derived from an experience influences attitudes. In particular, deriving positive hedonic value leads to

positive attitudes toward the object of consumption. Enjoyment and escape are therefore considered to influence park visitors' attitudes toward the park. The more park visitors enjoy the park and feel that they can escape from normal life, the more likely it is that they feel connected to the park or respect and appreciate its resources. In this sense, enjoyment and escape experiences are likely to positively influence attitudinal stewardship toward the park.

Based on the literature, this study proposes that, enhanced by social presence and mindfulness, learning, enjoyment, and escape experiences will positively increase attitudinal stewardship. Based on this discussion, the following hypotheses are tested:

Hypothesis 6a: Greater learning experience leads to greater attitudinal stewardship
Hypothesis 6b: Greater enjoyment experience leads to greater attitudinal stewardship.
Hypothesis 6c: Greater escaping experience leads to greater attitudinal stewardship.

Attitudinal research has suggested that attitudes have a strong, direct, and positive effect on behavioral intentions (Bobbitt & Daboholkar, 2001; Dabholkar & Bagozzi, 2002, p. 186). The link between attitudes and intentions is fundamental in attitudinal research and has been supported in a wide variety of domains research (Sheppard, Hartwick, & Warshaw, 1988; Dabholkar & Bagozzi, 2002). Based on the conceptualization and existing studies, the following hypothesis is suggested.

Hypothesis 7: Greater attitudinal stewardship leads to greater intentions to engage in stewardship behaviors.

Development of an Integrated Research Model

Based on the discussion above, an integrated research model was derived,

illustrating the hypothesized influences of narration style and source composition in

podcast tours on tourist experiences as relationships that are mediated by perceptions of

social presence and mindfulness (Figure 5). It further conceptualizes the influences of

enhanced tourist experiences on attitudinal stewardship and ultimately behavioral

stewardship.
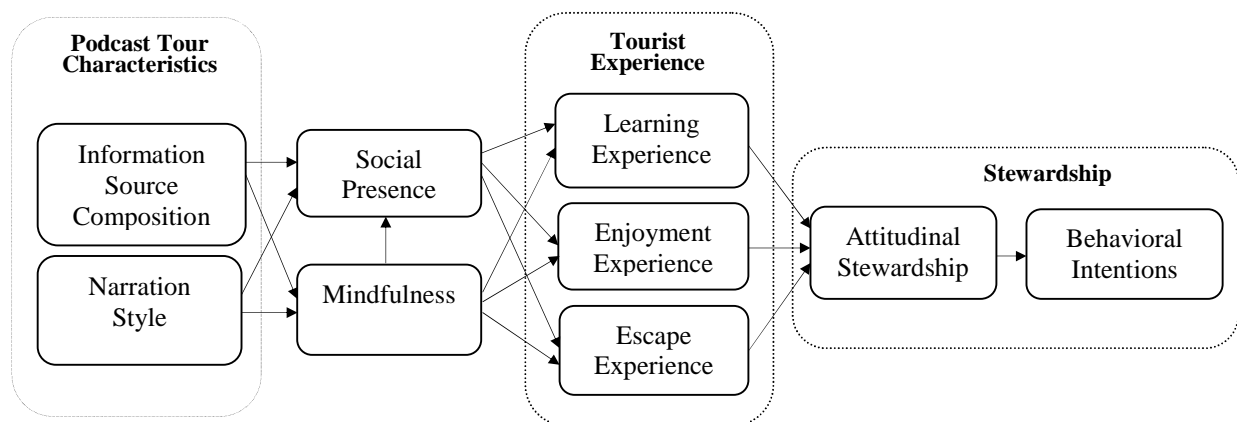
Fig. 5. Hypothesized research model.

CHAPTER IV

METHODOLOGY

Study Site

A field experiment was undertaken at Padre Island National Seashore (Corpus Christi, TX). Padre Island National Seashore (PAIS) encompasses 130,434 acres, and is about 65 miles long, which is the longest barrier island in the world. PAIS has protected rare coastal prairie, a complex, dynamic dune system, and the Laguna Madre, one of the few hyper-saline lagoon environments left in the world (PAIS, 2002) (Figure 6). PAIS provides important habitat for marine and terrestrial plants and animals and provides rare opportunities for beach recreation in an environment of isolation and solitude (PAIS, 2008) (Figure 6). However, the park also offers recreational fishing and boating opportunities in the Laguna Madre and on the Gulf of Mexico to attract visitors (PAIS, 2002). Figure 7 and 8 show the location of PAIS.
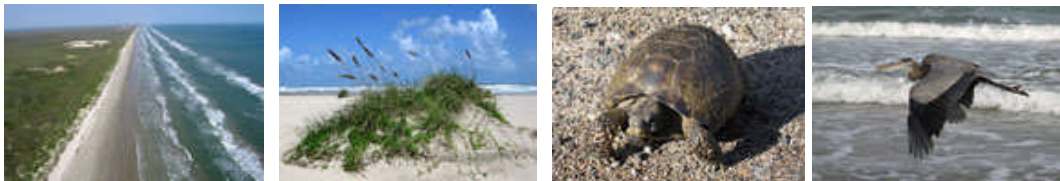
Fig. 6. Scenery of Padre Island National Seashore.

Fig. 7. South Texas and Padre Island National Seashore.

Fig. 8. Northern tip of Padre Island National Seashore.

Tables 1 and 2 show the recreational visitation of the park by year and month

(NPS, 2009). The number of recreational visitors decreased steadily from 2006

(730,994) to 2007 (658,317) to 2008 (635,925) (Table 1). The number of visitors in 2007

and 2008 was highest in June and July and lowest in January and December (Table 2).

Generally, the number of visitors tended to increase in the summer.

Table 1
The number of visitors by year

Year	No. of Visitors
2004	643,792
2005	666,580
2006	730,994
2007	658,317
2008	635,925

Source: NPS, 2009

Table 2
The number of visitors by month in 2007 & 2008

Month	No. of Visitors	
	2007	2008
January	29,520	18,114
February	38,312	34,126
March	69,421	71.921
April	53,432	48,612
May	66,680	68,378
June	90,365	85,132
July	92,460	68,915
August	73,511	69,235
September	44,249	31,974
October	40,072	39,837
November	40,215	75,733
December	23,324	24,668

Source: NPS, 2009

This park was selected for this study due to two reasons. First, it was identified that this park offers limited interpretation services and the park environment might make visitors isolated from the park interpretation services, including park ranger interpretation services. As a nature-based park, PAIS has limited information sources around the seashore and other sightseeing locations where park visitors primarily go. Even though there are interpretive programs provided by park rangers such as Beach Tour, Deck Tour, Birding Tour, Birding 101, and Junior Ranger Programs, the programs are offered only during park business hours (PAIS, 2008). For example, the Beach Tour provides for a 45 to 60 minute walk with a ranger in the morning; the Deck Tour only 30 to 45 minutes in the afternoon. The birding tour and Birding 101 are not provided every day. Therefore, park visitors have limited opportunities to get quality information from park rangers (PAIS, 2008). Since there is little exposure to other interpretative measures, this information-limited setting is appropriate for assessing the effectiveness of podcast tours. Participants consisted of mainly recreational users who did not seek out interpretive information. As such, they allowed for a field experiment without having toworry about the confounding effects of other information sources and interpretive services.

Experimental Conditions

The field experiment involved four experimental conditions: 2 narration source compositions (single narrator voice vs. multiple narrator voices) x 2 narrating styles (conversational style vs. formal style). Therefore, two factors were manipulated with two

levels per each factor when the scripts were developed and the conditions were tested with a between-subjects design.

To record the audio tours, three females were employed who speak standard American English and whose ages range between 22 and 25. This study chose female voices because they are perceived as more sensitive, emotionally responsive, people-oriented, understanding, cooperative, and kind (Nass, Moon, & Green, 1997); hence female voices are more likely to create social presence and mindfulness.

The single voice narration was recorded by a single female voice. For the multiple voice condition, three different female voices were recorded based on the result of Asch's conformity experiment study in the 1950's. Asch's conformity experiment identified that one person has virtually no influence and two people have only a small influence, but with three or more people the group influence is relatively stable (Asch, 1951). The conversational narration condition was designed by including high self-referencing phrases such as "you" or "yours" as well as comments related to a listener.

Development of Audio Tour Content

Six topics regarding podcast tours were selected for the audio tour content: introduction to PAIS, nature and ecosystem, sea turtle restoration project, bird migration and bird watch, oil and natural gas production, and seashore trash (APPENDIX A). The topics were developed based on information from PAIS brochures, interviews with the chief of interpretation and staff, and the PAIS Web site. The length of each topic ranged from 2 minutes and 20 seconds to 3 minutes 29 seconds; the number of words for each

topic ranged from 345 to 494 (Table 3). The scripts were first developed for formal

narration (APPENDIX A) and then revised for conversational narration (APPENDIX B).

While the audio tours differed in their narration format, the factual information included

was held constant across all conditions. To evaluate the revised audio tour contents, two

experts in interpretation reviewed the contents. To further revise the content, this study

conducted a pre-test with graduate students in the Department of Recreation, Park and

Tourism Sciences, at Texas A&M University. Based on comments from the pre-test

result, the contents were further revised.

Table 3
Description of narration scripts

Narration Style	Formal Narration Style			Conversational Narration Style		
Source Composition / Topics	No. of words	Length of Narration*		No. of words	Length of Narration*	
		Single	Multiple		Single	Multiple
Introduction to PAIS	390	2:24	2:48	460	2:42	2:52
Nature & Eco-system	436	2:20	3:18	538	3:34	3:29
Sea Turtle Restoration Project	395	2:54	2:54	494	3:05	3:06
Bird Migration/Birdwatching	382	2:47	2:39	396	2:31	2:36
Oil & Natural Gas Production	359	2:45	2:34	479	2:51	2:56
Shoreline Trash	345	2:56	2:43	480	2:59	3:00

* Length of Narration - Minutes: Seconds

After the script revision was completed, all the scripts were recorded in the

Laboratory for Intelligent Systems (LIST) in Tourism using Audacity, a free recording

and editing software. Sounds of birds and of the seashore were inserted at the beginning

of each audio tour. The recorded audio tours were downloaded into eight MP3 players (Sandisk: SDMX14R002GK-A70B SKU). Since the MP3 players can display titles, each audio tour segment could have a segment title.

Procedure

MP3 players and questionnaires were distributed and collected in the PAIS Malaquite Center. This location was selected because: (1) most park visitors drop in to get information or use the facilities; and (2) from there one can easily control the distribution and collection of MP3 players and questionnaires.

At the visitor center, a researcher asked randomly selected visitors whether they were willing to participate in a field experiment involving podcast tours, by listening to an audio tour on an MP3 player while taking a tour of the park and later fill out a self-reported quesionnaire. Vistors who agreed to participate in the research were randomly assigned an MP3 player containing one of four different podcast tours. In an experiment study, researchers should be careful to avoid self selection bias which occurs when participants decide the experiment condition in which they will participate (Shadish, Cook, & Campbell, 2002).The random assignment helped with avoiding such a bias.. To recollect distributed MP3 players, participants' driver's licenses were copied with the permission of PAIS. Participants received the copy of their driver licenses when they returned the MP3 player and filled-out the questionnaire.

Participants were given a short instruction on how to use MP3 players and select the recorded audio tours; then recommended them to listen to the audio tours on the

beach areas. Although participants were encouraged to listen to all the audio tour

segments, they were not required to do so. Before taking the audio tour, participants

filled out a pre-questionnaire (APPENDIX C). The post-questionnaire (Appendix D) was

answered after finishing the tour. Once they finished filling out the post-questionnaire,

participants were debriefed and thanked.

Participants

The field experiment for this study was conducted at the visitor center of PAIS

between 9 am and 5 pm from August 9 to August 16, 2008; all participants were

randomly approached at the visitor center. A total of 243 park visitors participated in the

field experiment and filled out the questionnaire. 22 questionnaires were not analyzed

because 17 of them had incomplete answers and five of them contained rated items with

the same answer for most items. Consequently, a total of 221 were included in the

analysis of this study. The single voice condition received 107 responses; multiple voice

condition 114; formal narration style 106; and conversational narration style 115 (Table

4).

Table 4
Sample size of experimental groups

Source Composition / Narration Style	Single Voice	Multiple Voice
Conversational Narration	55	60
Formal Narration	52	54

Table 5 provides the profile of participants. Over half of the respondents were

female (56.4%); most respondents were between 35 and 44 (25.5%) years of age. The

education level of most respondents included a graduate degree (25.5%), or a four year university (23.3%). Approximately 58.4% of respondents visited PAIS for the first time and 28.5% had visited twice. Over 40% of respondents made a decision to visit the PAIS earlier the same day or the day before while about 15.9% planned to visit one to five months earlier. Over 51% of respondents had no children in their travel party. 12.7% of respondents with children had children under five years old. Over 22% of respondents answered that they will stay overnight and a majority of respondents (45%) responded that they would stay 2 or less hours.

Table 6 shows the important factors in deciding to visit PAIS. Resting and relaxing and viewing scenery were the most highly rated as important factors in deciding to visit the park. Compared to those motivations, participants showed least interest in getting a better understanding about the park, learning about the park and Learning something new, even though over 75% of participants agreed those factors are important. Table 7 shows the results of activities respondents are willing to participate in during their visit. As shown, walking on the beach (93%) was an activity that a majority of respondents were interested in, followed by sightseeing and swimming (67% and 64%, respectably). Although over 75% of participants considered learning about the park or expanding their knowledge or understandings as important factors in deciding to visit to the park, only approximately 18% of participants answered that they are going to participate in educational/interpretative programs. These findings suggest that there is a potential need for more flexible interpretation services like podcast tours to help visitors learn about a park without having to participate in structured interpretational programs.

Approximately 58% of participants owned a MP3 player and nearly 62% of them had experience with listening to podcasts. Around one third of participants rated themselves as innovative.

Compared to overall PAIS visitors, there are more visitors who are between 18 and 24 years in the participant group (11.4%, 2.4%, respectively) while there are less visitors 65 years or older(8.6%, 25.0%, respectively) (Table 5). Regarding the comparison of education levels between the current participants and overall park visitors, the analysis shows that there are more graduate degree people in the sample compared to the overall visitors (33.2% and 25.8, respectively). Overall, 50% of participants and overall visitors had a university degree or more. There are more first-time visitors (58.9%) in the participant group than in the group of overall visitors (38.1%). Participants tended to stay overnight more than the overall visitor group. There is a difference among the two groups in terms of travel group structure. As Table 5 shows, while 47% of participants have four or more members in their travel group, only 12.9 % have four or more in the overall visitor group . However, 43% of the overall visitors came to the park with only one person.

Table 5
Profiles of study participants

Profile of Respondents	%	Profile of Overall Visitors to PAIS*	%
Gender		**Gender**	
Female	56.4	Female	42.5
Male	43.6	Male	57.5
Age		**Age**	
18-24	11.4	18-24	2.4
25-34	11.4	25-34	10.6
35-44	25.5	35-44	15.6
45-54	25.0	45-54	22.8
55-64	18.2	55-64	23.6
65 or older	8.6	65 or older	25.0
Education		**Education**	
High School	11.8	11th grade or lower	12.5
Less than 12 years	1.4	12th grade	2.1
Some college	21.4	1 to 3 years of college	27.2
A degree from a 2 yr college	9.1	4 year college	23.4
Graduate from 4 yr university	23.2	Post graduate	25.8
Some graduate school	7.7		
A graduate degree	25.5		
Children in Travel Group		**Children in Household**	
0-5 years	12.7	0-5 years	27.3
6-10 years	29.4	6-12 years	16.2
11-17 years	24.0	11-17 years	11.1
The number of people in travel group		**The number of people in travel group**	
One	2.3	One	
Two	35.4	Two	
Three	18.8	Three	
Four or more	43.9	Four or more	
Frequency of Visit		**Frequency of Visit**	
First time	58.9	First visit	38.1
2 – 3 times	28.5	Multiple (2 or more)	61.9
4 – 5 times	5.9		
6 times or more	7.2		
Time of Decision to Visit		**Time of Decision to Visit**	
Early today	24.5	Early today	
Yesterday	17.3	Yesterday	
Within past week	14.5	Within past week	N/A
1-3 weeks ago	20.5	1-3 weeks ago	
1-5 months ago	15.9	1-5 months ago	
More than 6 months ago	7.3	More than 6 months ago	

Table 5 Continued

Profiles of Respondents	%	Profiles of Overall Visitors to PAIS*	%

Length of Stay
  < 1 hours
  1 – 2 hours
  2 – 5 hours
  5 – 24 hours
  Overnight
	1.4
	12.3
	45.0
	19.1
	22.3
		Length of Stay
		  Day visitor
		  Overnight visitor
			65.2
			14.6

MP3 Ownership
  Yes
  No
	58.6
	41.3
		N/A	

Podcast Experience
(Previously Listened to)
  Yes
  No
	62.3
	37.7
		N/A	

Innovativeness - I know about new technology before other people - I am among the first in my circle of friends to buy a new technology - I use new technology a lot compared to my friends	38.5** 26.3 35.4	N/A	

Scott and Lai (2004)
***% of participants who answered "strongly agree" and "agree'*

Table 6
Important factors in deciding to visit PAIS

Motivation	%*	Motivation	%*
Resting & relaxing	96	Doing things with my companions	88
Viewing Scenery	93	Have fun	87
Doing something with Family/Friend	92	Strength with family/friend	82
Getting away from stress	91	Expanding my knowledge	81
Being close to nature	90	Feeling special atmosphere	80
Being with others who enjoy same thing	90	Being harmonious with nature	80
Giving my mind a rest	89	Learning something new	78
Being away from routine	89	Visit for personal interest	76
Getting better appreciation of nature	89	Learning about park	76
Experience different	88	Getting a better understanding about the park	76

% of participants who answered "very important" and "important'

Table 7
Activities that participants are willing to participate in when they visit PAIS

Activities	%*	Activities	%)
Walking on the beach	93	Playing active games	12
Sightseeing	67	Camping on the beach	9
Swimming	63	Fishing from shore	8
Collecting shells and things on the beach	47	Running	7
Sunbathing	43	Sail line fishing	2
Birdwatching	42	Organizing beach cleanups	2
Socializing	42	Windsurfing	2
Picnic on the beach	41	Fishing from a boat	1
Attending educational/interpretive program	18	Kayaking	1
Driving on the beach	17	Boating	1

% of participants who answered "Yes"

Measures

Based on various literature reviews, dependent measures were developed for measuring social presence, mindfulness, tourist experiences (learning, enjoyment, escape), and stewardship (attitudinal stewardship, behavioral stewardship). All the items were measured by a 5-point Likert scales and ranged from 1 (strongly disagree) and 5 (strongly agree) or from 1 (Not at all) to 5 (A lot).

Social Presence

Social presence was measured by six items (see Table 8). All these items were modified to be applicable to this study based on the studies of Lee (2002) and Gefen and Straub (2003). The instruments from the two studies were appropriate for this study since the construct should be measured based on the definition of social presence in human-computer interaction. The response scale ranged from 1 (Not at all) to 5 (A lot).

Table 8
Items of social presence

Social Presence	I felt as if the/each narrator was talking to me.
	I felt the narrator(s) conveyed feelings and emotions.
	I was able to mentally imagine the/each narrator.
	I felt cared for in the park even though there was no human guide.
	I felt involved with the narrator(s).
	I perceived the narrator(s)' messages as being personal

Mindfulness

Fourteen questions of mindfulness were included. The items were selected and modified from three scales developed by Brown and Ryan (2003), Feldman, Heyes, Kumar, Green, & Laurenceau (2007), and Baer, Smith, and Allen (2004). Mindfulness

consisted of four subdimensions: attention, present-focus, awareness and nonjudgment.

The reliability and validity of the measurement scale was established in a previous study

conducted in a museum (Kang, Gretzel, & Jamal, 2008). These questions were measured

on a 5-point Likert Scale (1=strongly disagree to 5=strongly agree).

Table 9
Subdimensions and items of mindfulness

Attention	I could pay attention to what I was doing.
	It was easy for me to concentrate on what I was doing.
	I was able to pay close attention to the environment.
Present-focus	I was open to the experience of the moment.
	I was able to focus on the moment.
	Part of my mind was occupied with other topics, such as what I will be doing later, or things I'd rather be doing.
Awareness	I noticed my surroundings when walking in the park.
	I was aware of smells and sounds and feelings such as the wind blowing in my face.
	I was attentive to my movements.
	I was aware of other people in the park.
	I could describe how I felt and thought at the moment.
Non-judgment	I tended to make judgments about whether my thoughts were good or bad.
	I made judgments about how worthwhile or worthless my experience was.
	I tended to evaluate whether my perceptions about the park were right or wrong.

Tourist Experience

Tourist experience was measured by ten questions for three sub-dimensions: four

items for learning experience, three items for escape experience, and three items for

enjoyment experience in that order (Table 10). The items were developed based on

previous studies (Pearce, 2005; Kotler & Kotler, 2000; Goulding, 2000). All the items

were modified for this study. The items were measured using a 5-point Likert Scale

(1=strongly disagree to 5=strongly agree).

Table 10.
Subdimensions and items of tourist experiences

Learning	I expanded my understanding of the park.
	I gained information and knowledge about the park.
	My curiosity about the park was enhanced.
	I learned many different things about the park.
Enjoyment	I had fun.
	I enjoyed being in the park.
	I derived a lot of pleasure from the tour.
Escape	I felt like I was in another world.
	I got away from it all.
	I got so involved that I forgot everything else.

Stewardship

The stewardship scale (8 items) was developed for this study. Three of eight items related to attitudinal stewardship and five to behavioral stewardship (Table 11) were developed based on the studies of Hancock (2007) and Stern et al. (2008); but had to be substantially modified and created additional items fitted to the current study context. These items were measured by a 5-point Likert Scale (1=strongly disagree to 5=strongly agree).

Table 11
Subdimensions and items of stewardship

Attitudinal Stewardship	I now have a greater appreciation of the resources the park offers.
	I feel more connected to the park.
	I have more respect for the work of the park employees.
Behavioral Stewardship	I feel more inclined to help this park.
	I am more likely to donate to the park.
	I am more willing to volunteer in this park.
	I feel more inclined to visit this park on a regular basis.
	I will more likely tell others about this park.

Other Items

The pre-questionnaire (Appendix 1) contained items that asked about the characteristics of the visit and visitors (5 items), motivation visit to PAIS (20 items), potential activities at PAIS (20 items), innovativeness (3 items), tendency toward stewardship (14 items), MP3 player ownership, experience with listening to podcasts, demographics (gender, age, and education) (5 items), and need for affiliation (personality measure) (5 items). Audio tour evaluation (10 items) and place attachment (9 items) scales were included in the post-questionnaire. To check manipulation effectiveness, the following questions were included: how many audio segments they listened to among the six audio topics; how many different speakers they could hear; and whether they felt the speaker(s) personally addressed the listener. These questions were included in the post-questionnaire.

Pretest

To check the effectiveness of the audio tour manipulations for the four factorial experiment conditions (2 narration source composition: single narrator voice vs. multiple narrator voices x 2 narrating styles: conversational style vs. formal style), pre-tests conducted using graduate students in the Department of Recreation, Park and Tourism Sciences at Texas A&M University. Participants indicated how many different narrators they could hear; whether they heard "you" or comments and descriptions related to visitors. They were also asked to complete and evaluate developed self-report questionnaire. An interview was used with a semi-structured questionnaire to identify

problems. Based on comments, an introduction was included in the first part of the

podcast tours, which was a description about overall audio tours about the content of

podcast tours with the sound effects of sea gulls and ocean waves.

Manipulation Checks

There was no difference in terms of the number of segments of audio tours that

participants among the four different experiment groups listened to (χ^2=2.12; p=0.55).

The majority (94.3%) of participants listened to four or more among the six segments of

the podcast tour. Regarding the question how many different voices did you hear when

you listened to the audio tour, the results showed there was a difference in terms of the

number of speakers between the single-voice and multiple-voice groups (χ^2=90.1;

p=.000). As expected, the majority of the single-voice condition group (68.4%) heard

one speaker and 93.3% of the multiple-voice condition subjects answered they heard 2

or more speakers (χ^2=90.18; p=.00). However, since not all participants correctly

identified the number of voices, this raises some concerns regarding the success of the

manipulation of the multiple voice condition.

This study checked the effectiveness of the self-referencing manipulation using

the question "Do you feel the speaker(s) personally addressed you?". The results

showed no difference between conversational and formal narration style groups (χ^2=2.49;

p=.12). This indicates that the self-referencing manipulation was not effective. However,

some subjects expressed concerns over the meaning of the question. Thus, the wording

of the question could also have been a problem. This study also asked participants about

their opinion of the audio tour. Most items (Table 12) were highly rated showing the

means of the items range from 4.53 to 3.95.

Table 12
Opinion about audio tours

Question Item	Mean
It was easy to understand how to use the audio tour device.	4.49
It was not difficult to select audio tour contents on the audio tour device.	4.38
The voice(s) on the audio tour were pleasant.	4.61
Information recorded in the audio tour was helpful.	4.51
Information provided in the audio tour was interesting.	4.53
The length of the audio segments was proper.	4.32
The amount of information presented was proper.	4.43
I was very satisfied with the audio tour.	4.41
The audio tour made me want to visit the park more often.	3.95
I will tell my family, relatives, or friends about the audio tour.	4.04

Data Analysis

Structural Equation Modeling (SEM)

LISREL 8.70 was used to construct a structural equation model (Jöreskog & Sörborm, 2002) to test the hypotheses in the research model. Structural equation modeling (SEM) tests various types of models to depict relationships among observed variables and latent constructs with the same basic goal of providing a quantitative test of a theoretical model hypothesized by research (Schumacker & Lomax, 2004). This means, SEM can test various theoretical models that hypothesize how sets of variables define constructs and how these constructs are related to each other. Unlike multiple-regression-based approaches to conducting structural path analysis, SEM provides an approach to test the measurement error in the indicators and simultaneously estimate a structural equation model (Bollen, 1989; James, Mulaik & Brett, 1982).

SEM for Experiment Studies

Many studies to date using SEM have been non-experimental survey studies (Bagozzi & Yi, 1988). However, the use of SEM for experimental data has been supported by numerous scholars (Alwin & Tessler, 1974; Bagozzi, 1977; Bray & Maxwell, 1982; Bagozzi & Yi, 1988; Russell, Kahn, Spoth, & Altmaier, 1998; MacKenzie 2001) since SEM has several advantages over traditional analyses of experimental studies (e.g., ANOVA, MANCOVA) (Bagozzi & Yi, 1988).

Bagozzi and Yi (1988) provided the rationale for the benefits. First, the SEM procedures for experimental studies do not involve the restrictive assumption of

homogeneity in variances and covariance of the dependent variables across groups. Second, the procedures provide a natural way to correct for random and correlated errors in the measures of variables and thus reduce the chances of making Type II errors, which occur when a false hypothesis is accepted. Third, SEM allows for a more complete modeling of theoretical relations, whereas traditional analyses are limited to associations among measures. Fourth, taking into account measurement error in the covariate that is related to the experimental effect, SEM increases the chance that valid experimental effects will be detected. As a consequence, SEM constitutes flexible and convenient procedures to permit more rigorous hypothesis tests of experimental studies and provides more accurate estimates of the effects of experimental interventions than traditional approaches.

Model Specification

The model-building procedure involves two conceptually distinct models: measurement model and structural model (Anderson & Gerbing, 1998). Measurement models depict the relationships between observed variables and their corresponding latent variables. Using LISREL formulation, a full measurement equation model can be stated as follows (Bollen, 1989). The measurement models are given in the equations for latent exogenous variables (1) and endogenous variables (2).

$$X = \Lambda_x \xi + \delta \text{ (1)}$$

$$Y = \Lambda_y \eta + \varepsilon \text{ (2)}$$

Where X is the $q * 1$ vector of observed variables; Y is the $p * 1$ vector of observed

responses; Λ_x is the $q * n$ matrix of regression coefficients of x on ξ; Λ_y is the $p * m$

matrix of coefficients of the regression y on η; ξ is an $n * 1$ random vector of latent

independent exogenous variables; η is an $m * 1$ random vector of latent dependent or

exogenous variables; and δ and ε and $q * 1$ and $p * 1$ vectors of measurement errors in x

and y, respectively (Bollen, 1989).

In the first research model, the exogenous variables include the two experiment

groups and the interaction term between two variables: *information source composition*

(ξ_1) and narration style (ξ_2), and interaction terms of two variables ($\xi_1 * \xi_2$)(ξ_3); seven

endogenous variables: *social presence (η_1), mindfulness (η_2), learning experience (η_3),*

enjoyment experience (η_4), escape experience (η_5), attitudinal stewardship (η_6), and

behavioral stewardship (η_7).

The mathematical formulation of the causal structural portion of the model is as

follows (3):

$\eta = B\eta + \Gamma\xi + \zeta$ *(3)*

where B represents an $m \times m$ regression matrix that relates the m endogenous factors (ηs)

to one another; Γ is the $m \times n$ matrix representing the regression of n exogenous

constructs (ξs) on m endogenous variable (ηs) (Bollen, 1989).

In this study, the structural model tested the relationships between three

exogenous and seven endogenous constructs.

Choosing an Indicator Structure

The choice of an indicator structure requires careful consideration regarding both the purpose of study and the conceptualization of the latent constructs (Hall, Snell, & Foust, 1999). Latent constructs with single indicators can be problematic since single indicators may make identification difficult (Bollen, 1989) and may be associated with a higher likelihood of an improper solution (Ding, Velicer, & Harlow, 1995). For these reasons, at least three or four indicators per latent construct are prepared to ensure identification, increase the chance of proper solution, and estimate latent errors (Bollen, 1989). This study included a sufficient number of indicators per factor: mindfulness (attention: 3 items; present-focus: 3 items; awareness: 5 items; non-judgment: 3 items), social presence (6 items), learning experience (4 items), enjoyment experience (3 items), escape experience (3 items), attitudinal stewardship (3 items), and behavioral intentions to engage in stewardship (5 items).

Item Aggregating in SEM

Based on Bagozzi and Heatherton (1994), this study used an approach to aggregation, called "levels of abstraction," for grouping items to form subsets. The approach to aggregation uses an attempt to perform an exploratory factor analysis to confirm whether the hypothesized items load on the appropriate factors and then form composites by summing items to form pairs of indicators for each component (Bagozzi & Heatherton, 1994).

The practice of item aggregating (combining individual items into small groups of items within scales and subscales) has received recent attention in the SEM literature (Bagozzi & Edwards, 1998; Holt, 2004). Researchers have noted the difficulty of developing SEM with analytic tools such as LISREL with a large number of items per latent variable (Hall et al., 1999; Bagozzi & Edwards, 1998), because the greater the number of indicators per factor, the more difficult it will probably be to parsimoniously represent the measurement structure underlying a set of observed variables and to find a model that fits the data well (Baumgartner & Homburg, 1996).

Bagozzi and Heatherton (1994) distinguished four different levels of aggregation approaches in modeling constructs: (1) total disaggregation, (2) total aggregation, (3) partial disaggregation, and (4) partial aggregation. In a total disaggregation model, individual item responses are used as separate indicators. The principle advantage of the total disaggregation model is that it gives the most detailed level. In a total aggregation model, indicators consist of aggregates of scale scores. The main advantage of this is the simplicity and ability to capture the essence of the underlying meaning of a scale. In a partial disaggregation model, indicators consist of composite subsets of items (summed or averaged). That means, a composite variable is created from the items of each separate dimension of the construct and these composite variables become the indicators of a single factor model. In a partial aggregation model, sums or averages of all items within a component are treated as indicators and factors which are represented at the facet level, global level, or both.

Researchers have noted that aggregating individual indicators may be preferred to using individual indicators in most cases because the measurement error is reduced with aggregated sets of items (Hall et al.,1999; Bagozzi & Heatherton, 1994; Bagozzi & Edwards, 1998; Anderson & Gerbing, 1984; Williams & Holahan, 1994). The majority of studies assessing the effectiveness of aggregating have shown item aggregated solutions have advantages over the disaggregated analysis without items aggregation (Bagozzi & Edwards, 1998). First of all, the composite-level indicators tend to be more reliable and normally distributed and have values that are more continuously distributed. Second, the aggregating approach helps increase the stability of the parameter estimates. The third reason is related to sample size requirements. When a larger number of indicators per latent construct are used, the model will typically have more free parameters. A rule of thumb for determining adequate sample size is based on the ratio of estimated parameters to the number of respondents, with higher ratios increasing the likelihood of a proper solution and producing more accurate parameter estimates. Aggregation improves the variable to sample size ratio and hence is a remedy for small sample size.

This study employed partial aggregation for the mindfulness construct. The partial aggregation method treats separate dimensions of a construct as indicators of a single latent variable. The partial disaggregation model reduces the number of parameters to be estimated and simultaneously tends to decrease measurement error (Baumgartner & Homberg, 1996). Thus, a smaller sample size is required and the model generally yields better fit (Bagozzi & Edwards, 1998). The construct of mindfulness is

measured by 14 items under the four subdimensions: attention (3 items), present-focus (3 items), awareness (5 items) and non-judgment (3 items). The averaged composite variables of the four subdimensions of mindfulness were used as indicators for the mindfulness construct.

Fitting the Model

This study used a two step approach (Anderson & Gerbing, 1998). After the acceptable fit of the measurement model has been achieved with a series of respecifications, the next step in the process is to assess a structural model with the accepted measurement model. Based on this approach, this study first conducted a confirmatory factor analysis using a series of procedures that respecified the measurement model to provide a final measurement model. The structural equation model was assessed with this final measurement model.

To generate adequate internal consistency and unidimensionality, loading values, composite reliability, convergent validity and discrimnant validity were estimated (Fornell & Larcker, 1981; Anderson & Gerbing, 1988). Factor loading value, ±0.30 are considered as a minimal level; loadings of ± 0.40 more important; and ± 0.50 or greater practically significant (Hair, Anderson, Tatham, & Black, 1998). A composite reliability over .70 was considered to indicate internal consistency of the indicators assessing a given factor. The average variance-extracted estimates (AVE) measured the amount of variance captured by the factors with the desirable level of variance captured being 50% or higher. In addition, in order to assess construct validity, convergent and discriminant validity were tested. Convergent validity was tested by analyzing the magnitude and t-

test of factor loading values and the squared multiple correlations (Anderson & Gerbing, 1988; Netemyer, Johnston, & Burton, 1990). Discrimination between the constructs was identified by investigating inter-factor correlations between the constructs (phi coefficient in LISREL) and AVE (Beraden, Netemeyer, & Richar, & Teel, 1989; Fornell & Larcker, 1981; Netemeyer et al., 1990). Discriminant validity is also achieved when AVE is greater than the squared correlation between the constructs (Fornell & Larcker, 1981; Netemeyer et al., 1990).

The dimensionality of the measurement model was assessed by inspecting overall model fit indices. Chi-square statistic is considered one of the most popular indices for assessing the overall goodness of fit of a model (Fornell & Larker, 1981). However, in practice, the chi-square test is sometimes of limited use because it is not robust to violations of underlying assumptions (particularly normality) and heavily influenced by sample size (Bentler & Chou, 1987; Anderson & Gerbing, 1988; Jöreskog & Sörborm, 1993). The chi-square is regarded more as a measure of fit than as a strict test statistic (Jöreskog & Sörborm, 1993). Therefore, other indices were investigated: root mean square error of approximation (RMSEA), comparative fit index (CFI), and normed fit index (NFI) to assess model fit to the sample data (Bagozzi & Yi, 1988; Byrne, 1997; Kline, 2005). Values of NFI and CFI close to 1.00 indicate a good fit and a value greater than 0.90 shows an acceptable fit. Values of RMSEA less than 0.05 indicate a good fit and values as high as 0.08 represent reasonable errors of approximation in the population. When measurement model includes more than 20 items and 6 constructs, it is difficult to reach good model fit (Bentler & Chou, 1987).

Therefore, a more parsimonious model was used to reduce the number of indicators

based on items deletion and aggregation (see "Item aggregating in SEM" in Chapter

Four).

Model Estimation and Testing Method of Theoretical Model on Empirical Data

The maximum likelihood estimation (MLE) technique was used to obtain

parameter estimates and test statistics – the most common and predominant approach to

parameter estimation in SEM in comparison with other estimators (i.e., a simpler weight

matrix), both conceptually and computationally (Cortina, Chen, & Dunlap, 2001).

Maximum likelihood estimation has advantages over other methods in terms of

minimum variance and unbiasedness (Schumacker & Lomax, 2004), Type I error rate,

and power (Jaccard & Wan, 1995). Empirical evidence has shown that MLE is robust

with regard to the violation of the multivariate normality assumption (Chou & Bentler,

1996).

The overall fit of the research model was assessed by evaluating chi-square,

RMSEA, NFI, and CFI based on Kline's (2005) recommendations. The same criteria as

for the measurement model assessment fit indices were applied to this assessment.

Sample Size

The sample size of this study (*N=221*) is adequate to provide sufficient statistical

power for data analysis. In SEM, sample size is important since one needs a reasonable

indication of whether a researcher's sample size is sufficient to estimate parameters and

determine model fit given the specific theoretical relationships among latent variables (Schumacker & Lomax, 2004). Researchers who have investigated the appropriate sample size in the literature agree that 100 to 150 subjects is the minimum satisfactory sample size (Ding, et al., 1995); Hoelter (1983) suggested that any number above 200 is sufficient to estimate model fit. Specifically, Anderson and Gerbing (1998) suggest that a sample size of 150 or more is typically needed to obtain parameter estimates that have standard errors small enough to be of practical use in a condition that the normality assumption was fully met.

Data Screening and Diagnosing Assumptions

A preliminary data screening is an important first step in SEM (Baumgartner & Homburg, 1996; Schumacker & Lomax, 2004). Prior to the analysis, PERLIS 2, a companion preprocessor program for LISREL, and SPSS 16 were used for data screening. The data was checked for any coding errors. Raw data was first entered into a SPSS file after one reversed question among mindfulness items (Part of my mind was occupied with other topics, such as what I will be doing later, or things I'd rather be doing) was recoded to match the other items. The data was screened to confirm that all were appropriately coded without errors using a frequency analysis.

The missing values (2.5%) were treated with a multiple imputation procedure provided by the PRELIS 2 application. Instead of filling in a single value for each missing value, multiple imputation procedure replaces each missing value with a set of plausible values that represent the uncertainty about the right value to impute (Rubin,

1987). The multiple-imputed data set was then analyzed by using standard procedures for complete data included in LISREL 8.70.

Input Matrix

This study used a variance-covariance matrix as a input matrix. The variance-covariance matrix is made up of variance terms on the diagonal and covariance terms on the off-diagonal. The covariance matrix implies that the model is comprised of three separate covariance matrices: the covariance matrix of the observed indicators of the latent endogenous variables, the covariances between the indicators of latent endogenous variables and indicators of latent exogenous variables, and the covariance matrix of the indicators of the latent exogenous variables (Cziráky, Sambt, Rovan, & Puljiz, 2005). SEM assumes normality of the latent endogenous variables, therefore, if the endogenous latent construct is dichotomous or ordered, a polychoric correlation matrix should be used as an input matrix; however, this is not necessary in the case that the exogenous variables are dichotomous (Muthén & Christofferson, 1981).

Testing Interaction Effects

The research tested the latent variable interaction effect in SEM between information source composition and narration style on social presence and mindfulness. Several procedures are proposed to test an interaction effects in SEM (e.g., Kenny & Judd, 1984; Jaccard & Wan, 1995; Jöreskog & Yang, 1996). This study used Ping's (1995, 1996) methods to test the interaction effect between source composition and

narrative style. Ping's approach suggests that the product of the summed relevant

indicators be used as the sole indicator of the latent product. For example, when two

latent variables X and Z, with indicators X1, X2 and Z1, Z2, respectively, are

hypothesized to interact on a third latent variable, Y, it is suggested that the computed

variable [(X1+X2) * (Z1+Z2)] be used as the indicator of the latent product (Figure 9).
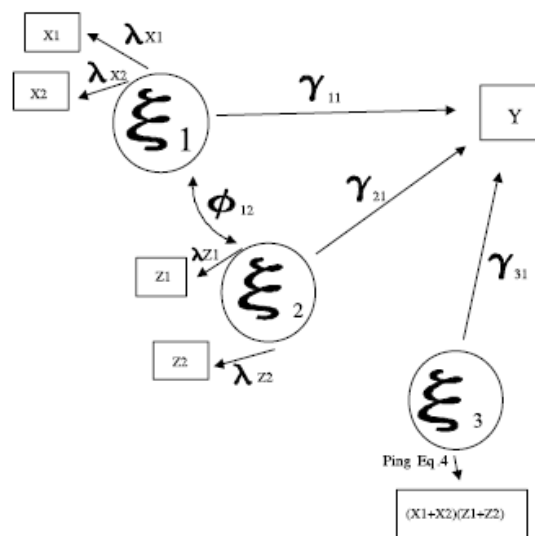
Fig. 9. Ping (1995) model.

Based on this approach, the product terms of the information source composition

and narration style were calculated. In particular, appropriately chosen dummy or effect

coding was required to permit experimental treatment effect analysis within a regression

framework for SEM (Hamilton, 1992). Dummy codes (0, 1) assigned to the first

experimental variable (information source composition) and different dummy codes (-1,

1) were used to the second experiment variable (narration style). In order to represent the

interaction effect, the dummy codes for each variable were multiplied to create the

interaction term.

CHAPTER V

RESULTS

Measurement Model

      This study measured seven constructs of social presence, mindfulness, learning, enjoyment, escape, attitudinal stewardship, and behavioral stewardship with a total of 38 indicators. Bentler and Chou (1987) have argued that for models with more than 20 items and six factors, it is necessary to be more parsimonious because it is very difficult to reach good fit indices. First, three of six social presence indicators were deleted. Based on theoretical consideration, the eliminated items were "I felt as if the/each narrator was talking to me," "I felt the narrator(s) conveyed feelings and emotions," and "I was able to mentally imagine the/each narrator." Second, originally measured with 14 items, the construct of mindfulness was partially disaggregated into four dimensions (attention, present-focus, awareness, and non-judgment) with its composite variables (averaged). In addition, one indicator of "I feel more inclined to help this park" of the five behavioral stewardship indicators was eliminated since the indicator measured the same aspect as one of the other stewardship items, "I am willing to volunteer in this park." Third, one of the four learning items (My curiosity about the park was enhanced) was eliminated to make the construct more focused on actual learning. While this item tends to describe curiosity about the park, the three other items more clearly present the learning process. Consequently, the initial test of the measurement model included only

24 indicators under seven constructs: Social presence, mindfulness, learning, enjoyment, escape, attitudinal stewardship, and behavioral intentions to engage in stewardship.

The first measurement model test suggested eliminating the composite variable of non-judgment, because of its low loading value (0.21) to the mindfulness construct. This study followed the threshold (0.5 or greater) that Hair, et al. (1998) recommended. The investigation of parameter MI also indicated that behavioral stewardship (I will more likely tell others about this park) cross-loaded with mindfulness, social presence, learning, enjoyment, and attitudinal stewardship. This indicator was deleted based on the recommendation of Byrne (1997).

The resulting CFA of the measurement model tested with seven constructs and its 21 indicators revealed that the fit of the overall confirmatory factor model was adequate. The model fits indicators were $\chi^2_{(df=168)} =369.93$ at p=0.00, RMSEA=0.072, NFI=0.95 and CFI=0.97. However, according to mediation values, two misfit parameters were identified between "attention and present-focus" and between "present-focus and awareness (mindfulness). Therefore, the misspecified parameters were set free to further test (Byrne, 1997). The χ^2 value of the final model test was 358.29 with df=166 at p=0.000. The change ($\Delta\chi^2 =11.64$, $\Delta df=2$, p=0.002) presented significant improvement over the previous model. Other model fit indices were RMSEA=0.70; NFI = 0.96 and CFI =0.98 which showed a good fit to the data.

The final measurement model (Table 12) exhibited adequate internal consistency and unidimentionality such as loading values and composite reliability; convergent, and discriminant validity were also examined. Composite reliability and AVE of each

construct were investigated to assess internal consistency of the construct in the proposed measurement model (Fornell & Larker, 1981). As discussed in the methodology section, a value of composite reliability over 0.70 indicates internal consistency of the indicators assessing a given factor. A desirable level of AVE estimates measuring the amount of variance captured by the factors is 50% or higher. As Table 13 shows, all the composite reliabilities ranged from 0.76 to 0.92 and the AVE of all the constructs also exceeded 0.51. Therefore, the internal consistency of the proposed measurement was established.

Convergent validity was tested by analyzing the squared multiple correlations (SMC) and testing the significance and magnitude of the indicator's estimate coefficient on its specified underlying construct (Anderson & Gerbing, 1998; Netemyer, et al., 1990). The SMC ranged from 0.43 to 0.83; loading values were ranged from 0.65 to 0.93 and the t-values showed convergent validity of the measurement model.

Discriminant validity was evaluated by investigating AVE and squared correlations between constructs. Discriminant validity is achieved when AVE is greater than the squared correlation between the constructs (Fornell & Larcker, 1981; Netemyer et al., 1990). In this study, the smallest AVE of the construct was 0.51 (Table 13) and the largest squared correlation between the construct between social presence and enjoyment was 0.44 (Table 14). Therefore, discriminant validity of constructs was established. After the CFA identified the adequacy of measurement of all seven latent constructs in the structural model, we proceeded with confidence to the structural equation modeling (SEM) analysis.

Table 13
Constructs and items in measurement model

Construct	Notation	Item
Social Presence	SP 1	I felt cared for in the park even though there was no human guide.
	SP 2	I felt involved with the narrator(s).
	SP 3	I perceived the narrator(s)' messages as being personal
Mindfulness	MF 1 (Attention)	I could pay attention to what I was doing.
		It was easy for me to concentrate on what I was doing.
		I was able to pay close attention to the environment.
	MF 2 (Present-Focus)	I was open to the experience of the moment.
		I was able to focus on the moment.
		Part of my mind was occupied with other topics such as what I will be doing later, or things I'd rather be doing.
	MF 3 (Awareness)	I noticed my surroundings when walking in the park.
		I was aware of smells and sounds and feelings such as the wind blowing in my face.
		I was attentive to my movements.
		I was aware of other people in the park.
		I could describe how I felt and thought at the moment.
Learning	LE 1	I expanded my understanding of the park.
	LE 2	I gained information and knowledge about the park.
	LE 3	I learned many different things about the park.
Enjoyment	EN 1	I had fun.
	EN 2	I enjoyed being in the park.
	EN 3	I derived a lot of pleasure from the tour.
Escape	ES 1	I felt like I was in another world.
	ES 2	I got away from it all.
	ES 3	I got so involved that I forgot everything else.
Attitudinal Stewardship	ATTI_ST 1	I now have a greater appreciation of the resources the park offers.
	ATTI_ST 2	I feel more connected to the park.
	ATTI_ST 3	I have more respect for the work of the park employees.
Behavioral Intentions	BEHA_ST 1	I am more likely to donate to the park.
	BEHA_ST 2	I am more willing to volunteer in this park.
	BEHA_ST 3	I feel more inclined to visit this park on a regular basis.

Table 14
The result of measurement model

Construct/Item	Loadings	t-Value [a]	Mean	R^2	Composite Reliability	AVE
Social Presence			3.95	0.57	0.87	0.68
SP1	0.76	-[b]	3.90			
SP2	0.90	13.14	3.58			
SP3	0.81	12.12	3.64			
Mindfulness			3.92	0.66	0.76	0.51
MF1	0.81	-[b]	3.97			
MF2	0.67	9.73	3.75			
MF3	0.65	8.01	4.03			
Learning Experience			4.50	0.83	0.92	0.80
LE1	0.91	-[b]	4.51			
LE2	0.93	21.45	4.60			
LE3	0.85	17.89	4.40			
Enjoyment Experience			4.17	0.75	0.86	0.67
EN1	0.81	-[b]	4.05			
EN2	0.87	11.97	4.48			
EN3	0.88	15.73	3.98			
Escaping Experience			3.01	0.65	0.89	0.72
ES1	0.87	-[b]	3.11			
ES2	0.71	14.51	3.25			
ES3	0.86	14.61	2.84			
Attitudinal Stewardship			4.27	0.70	0.82	0.60
ATTI_ST 1	0.83	-[b]	4.42			
ATTI_ST 1	0.77	12.26	3.99			
ATTI_ST 1	0.72	11.19	4.42			
Behavioral Intentions			3.55	0.55	0.82	0.60
BEHA_ST 1	0.74	-[b]	3.67			
BEHA_ST 2	0.78	10.19	3.26			
BEHA_ST 2	0.80	10.31	3.73			

Note: [a]. if t > 3.291, significant at p<0.001. [b] Reference indicator. CFA loading = Completely standardized estimate. Model fit indices: $\chi^2_{(166)}$ =358.29, p=0.000; RMSEA = 0.07, NFI = 0.96, CFI = 0.98. All items were scored from 1 "strongly disagree" to 5 "strongly agree" (n=221). Composite reliability and AVE is based on Fornell and Larcker's (1981) formula.

Table 15
Correlation matrix of constructs

	Social Presence	Mindfulness	Learning	Enjoyment	Escaping	Attitudinal Stewardship	Behavioral Stewardship
Social Presence	1.00						
Mindfulness	0.40 *(6.19)**	1.00					
Learning	0.31 *(5.52)*	0.42 *(5.25)*	1.00				
Enjoyment	0.66 *(6.67)*	0.44 *(6.75)*	0.29 *(4.81)*	1.00			
Escaping	0.56 *(5.59)*	0.34 *(5.93)*	0.46 *(6.67)*	0.49 *(7.13)*	1.00		
Attitudinal Stewardship	0.64 *(6.31)*	0.39 *(624)*	0.51 *(7.14)*	0.53 *(7.30)*	0.44 *(6.61)*	1.00	
Behavioral Stewardship	0.52 *(5.73)*	0.23 *(4.46)*	0.20 *(3.56)*	0.31 *(522)*	0.32 *(5.53)*	0.33 *(5.45)*	1.00

*t-value: if t > 3.291, significant at p<0.001.

Overall Fit of the Hypothesized Structural Model

Model Fit

The result of the initial estimate of the structural research model was

$\chi^2_{(df=233)}$=473.85 at p=0.00; RMSEA=0.067; NFI=0.94; and CFI=0.97. However, a large

modification index (MI=11.25) between escape experience and enjoyment experience

suggested specifying a path between enjoyment and escaping (Byrne,1997). Even

though the path was identified based on statistical criteria, the inclusion of the path is

meaningful since the more park visitor feel they are escaping from daily life, the more

they can enjoy their visit. The results from the estimation of the research model yielded

model fit indices of $\chi^2_{(df=232)}$=461.85 at p=0.00. However, the normalized chi-square

statistic is 2.00, which can be interpreted as reflecting an adequate fit (Gefen, Straub, &

Doudreau, 2000). The other model fit indices (Table 16) suggested that the model fits

the data well (RMSEA=0.066; NFI=0.94; and CFI=0.97). The change of χ^2 and df

showed significant model improvement ($\Delta\chi^2$ =12.00, Δdf=1, p=0.0005).

Table 16
Model fit statistics for research model

$\chi^2_{(df=232)}$=424.92 at p=0.00	χ^2/df=2.00	RMSEA=0.066	NFI=0.94	CFI=0.97

The squared multiple correlations (SMC) assess the extent to which the model

explains the variance in the data set. The model fairly well explains social presence

(SMC=0.51), learning (SMC=0.38), enjoyment (SMC=0.72), escape (SMC=0.40), and

attitudinal stewardship (SMC=0.70); reasonably well behavioral stewardship

(SMC=0.32); however the model does not explains mindfulness (SMC=0.01).

Parameter Estimates

Table 16 provides a summary of the parameter estimates and their test significance. Figure 10 depicts the path coefficients that were significant. First of all, information source composition manipulated by a single vs. multiple voices condition has a significant effect on social presence (path coefficient = 0.19 at t=2.20. p=0.028). This result supports H1a. This means, that multiple voices included in a podcast tour are more likely to lead to greater perceived social presence than a single voice.

The effect of narration style (formal vs. conversational narration style) on social presence was marginally significant (path coefficient = 0.07 at t=1.55, p=.12). . Given the constraints of field experiments, this study adopted a less conservative significance level for this analysis (p=0.12). It has been supported that the p-value (alpha level) can be chosen by a researcher based on statistical difficulties of detecting significance (Dineen, Lewicki & Tomlinson, 2006; McClelland & Judd, 1993) because "the typical level of alpha =0.05 is simply a custom started by Fisher (1943), a statistician who introduced a t-distribution" and more important "is not based on any statistical science theory or criteria other than conventional practice that has become the accepted standard" (as cited in Lavrakas, 2008, p.18). Therefore, a number of scholars has argued that it can be concluded that "if the p-value of a test is equal or less than the chosen level of alpha, it is deemed statistically significant" (Lavrakas, 2008, p. 1). Consequently, the result supports H2a and indicates that conversational narration included in a podcast tour is more likely to lead to greater social presence than formal narration in a podcast tour.

The effects of narration style and source composition on mindfulness were not significant; therefore, H1b and H2b were not statistically supported. This result indicates that there is no different effect between the two different narration style manipulations in enhancing mindfulness. There is not interaction effect of information source composition (single vs. multiple voices) and narration style (conversational vs. formal style) regarding social presence or mindfulness.

All the relationships between endogenous constructs were significant except for the relationship between social presence and learning. Mindfulness is positively related to social presence (path coefficient =0.71, t=6.77). Therefore, H3 was supported. As hypothesized, mindfulness is likely to influence perception of social presence.

Social presence influenced enjoyment (path coefficient =0.17, t=2.35), and escaping (path coefficient =0.30, t=2.72), but not learning. Therefore, H4b and H4c were supported; however H4a was not accepted. This means that greater social presence leads to greater enjoyment and escaping experience but not to a learning experience. Mindfulness has a positive influence on learning (path coefficient=0.56, t=4.30), enjoyment (path coefficient =0.47, t=4.02), and escape (path coefficient==0.38, t=3.09). Therefore, H5a, H5b, and H5c were supported. Experiencing escape positively influences enjoyment (path coefficient=0.33, t=4.39). All three park visitors' experience dimensions positively influenced attitudinal stewardship: learning (path coefficient =0.36, t=5.68), enjoyment (path coefficient=0.36, t=3.96), and escaping experience (path coefficient = 0.29, t=3.40). Therefore, H6a, H6b, and H6c were supported. Finally,

attitudinal stewardship has a positive impact on behavioral intentions to engage in

stewardship (path coefficient =0.56, t=6.73). Therefore H7 was supported.

Table 17
Parameter estimates for research model

Structural Path	Hypothesis	Standardized Path Coefficients	t-value (p-value)
Information Source Composition→ Social Presence	**H1a**	**0.19**	**2.20 (0.028)**
Information Source Composition → Mindfulness	H1b	-0.14	*n.s**
Narration Style→ Social Presence	**H2a**	**0.07**	**1.55 (0.12)**
Narration Style → Mindfulness	H2b	-0.08	*n.s.*
ISC x NS→ Social Presence		-0.08	*n.s.*
ISC x NS → Mindfulness		0.05	*n.s.*
Mindfulness → Social Presence	**H3**	**0.71**	**6.77**
Social Presence → Learning Experience	H4a	0.07	*n.s.*
Social Presence → Enjoyment Experience	**H4b**	**0.17**	**2.35**
Social Presence → Escaping Experience	**H4c**	**0.30**	**2.72**
Mindfulness → Learning Experience	**H5a**	**0.56**	**4.30**
Mindfulness → Enjoyment Experience	**H5b**	**0.47**	**4.02**
Mindfulness → Escaping Experience	**H5c**	**0.38**	**3.09**
Escaping Experience → Enjoyment Experience		**0.33**	**4.39**
Learning Experience → Attitudinal Stewardship	**H6a**	**0.36**	**5.68**
Enjoyment Experience → Attitudinal Stewardship	**H6b**	**0.36**	**3.96**
Escaping Experience → Attitudinal Stewardship	**H6c**	**0.29**	**3.40**
Attitudinal Stewardship → Behavioral Intentions	**H7**	**0.56**	**6.73**

n.s.: not significant

Social Characteristics of Soundcape (Voice on Podcast)

Social Presence & Mindfulness

Tourist Experience

Environmental Stewardship

Info.* Source Composition

Narration Style

ISC x NS**

Social Presence

Mindfulness

Learning Experience

Enjoyment Experience

Escape Experience

Attitudinal Stewardship

Behavioral Intentions

0.19

0.07

0.71

0.17

0.56

0.30

0.47

0.38

0.33

0.36

0.36

0.29

0.56

*Info.: Information
**ISC: Information source composition
  NS: Narration style

———————▶ Significant path (t value: see Table 17)

·············▶ Not significant path

Fig 10. Path coefficients of research model.

CHAPTER VI

DISCUSSION AND CONCLUSION

Based on the results of the experiment conducted for the present dissertation, the following five conclusions are discussed.

First, *the number of voices (information source composition) included in an interpretive podcast tour influences feelings of social presence.* The multiple voice condition yielded higher social presence than the single voice condition. That is, individuals responded more socially to multiple voices implemented in the podcast tour than a single voice. This result implies that voices play an important role in conveying social cues that lead to feelings of social presence.

Second, *the narration style of podcast tours (formal vs. conversational style) influences listeners' social response to narrators' voices.* Although the relationship was weak, the results confirmed that the conversational narration style is more effective in increasing social presence than the formal narration style. In other words, the more self-referenced information (e.g., you, yours or comments targeted to a listener) audio tours contain, the more social cues are conveyed to listeners (Rogers, et al, 1977; Mayer, et al., 2003). This result implies that when the listeners receive a media message containing strong social cues (high self-referencing); they interpret the experience as a social conversation and ignore the artificiality of the social entity communicated through information technologies.

Third, *the number of voices and the narration style used in a podcast tour do not have any impact on mindfulness*. This study predicted that multiple-voice podcast tours are more effective in eliciting an orienting response which stimulates mindfulness. It was also hypothesized that a conversational narration style manipulated by self-referencing words or phrases increases mindfulness. However, the effect of these characteristics of podcast tours on mindfulness was not supported in this study.

Fourth, *social responses to a narrator's voice on podcast tours leads to enhanced visitor experiences, in particular, enjoyment and escape, and increased mindfulness leads to enhanced enjoyment, escape and learning*. The results indicate that the influence of podcast tours is mediated by feelings of social presence and that mindfulness is indeed an important factor influencing tourist experiences.

Fifth, *park visitors' positive experiences lead to attitudinal stewardship, which in turn influences intentions to engage in stewardship behaviors.* This study showed that social presence and mindfulness positively influence learning, enjoyment and escape experiences and the enhanced visit experiences affect attitudinal stewardship. This result supports that both increased knowledge (learning experience) and hedonic value (enjoyment; escape) impact attitude formation, which in turn leads to behavioral intentions.

Theoretical Implications

Media Equation Theory

The current study has primary implications for media equation theory. First, this study supports the voice-based media equation experiment arguing that the use of voice

itself can easily mislead and make participants believe that they are interacting with a real human being through technologies or media. According to media equation theory, "media equals real life" (Reeves & Nass, 1996, p.5). Although mediated or simulated objects do not warrant the use of physical and social reasoning modules, interaction media or information technologies are basically social and natural, just like interaction in real life. The study manifested that a voice user interface has the potential to evoke perceptions of social presence in interactions with information technologies. Therefore, this study provided strong evidence in support of the media equation argument that individuals keep using learned social responses to interpret stimuli on the screen or to interact with information technologies assigning humanistic characteristics to information technologies in the same way as they would assign the characteristics to humans.

Second, the important contribution of the current study to media equation theory indicates the media equation is applicable to mobile and handheld technologies. A number of media equation studies have conducted to understand recently developed information and communication technologies such as computers. However, there are few mobile information technology studies relating to the media equation. It is apparent that handheld devices have some limitations to deliver socially or physically rich information due to their constraints. For example, a small screen would limit interaction between the users and devices; the keyboard of mobile devices might also limit the interactivity between users and the devices. Therefore, mobile devices function mainly based on voice. As shown in the current study, participants in the media equation experiment did

not notice the artificiality of their interaction and believed that they were interacting with humans rather than artificial technologies.

Multiple Source Effect

Several studies provided evidence that multiple sources have a greater impact on persuasion than a single source. This study showed that multiple prerecorded human voices manifest multiple human sources and thereby naturally induce the multiple source effect. The present study provided empirical evidence that the multiple source effect can be induced by human vocal cues. Past research showed the multiple source effect heavily relying on the manipulation of linguistic cues (e.g., textual message). This study expands the domain of modality (from text to audio) to which the multiple source effect applies. Another contribution of this study is to discover a key mediating role of social presence in information technologies. This study found that this is because individuals respond more socially to multiple voices on podcast tours than a single voice. The multiple source technique is one of the oldest persuasion strategies; in this study, it is identified it can be applied to new media such as podcast tours. In particular, this study provided empirical findings that even if human voices are conveyed through small mobile, handheld technologies, information presented by multiple sources is more effective in changing perceptions.

Self-referencing Effect

Another contribution of this study is to provide empirical evidence of the effect of self-referencing. As previously discussed, the self-referencing effect explains that a message containing self-referencing word(s) or phrase(s) conveys more social cues than a message without self-referencing. The findings empirically indentified that voice-induced social cues formulate a social conversation schema and individuals automatically respond to social cues and ignore the message conveyor's artificiality.

Social Presence Theory

This study contributed to social presence theory. The findings show that social responses to human voice contained in podcast tours are oriented toward imagined human actors such as park rangers. This conclusion supports that information technologies play a role as quasi-human actors when the technologies provide multiple voices. Specifically, this study showed that social responses to a technology can be induced even when social cues are only conveyed through voices. So a variety of modalities can be used to increase social responses toward interpretation contents. The current study further confirmed that perceived social presence enhanced by social components conveyed through information technology influences tourist experiences.

Mindfulness Theory

This study provides empirical support that mindfulness, as an ongoing psychological state, enhances visitors' experiences. The findings identified that open and

receptive attention to and awareness of current events and experiences, help people engage with their surroundings, which leads to enhanced positive visitor experiences. Distinguished from present-focus concepts such as flow, immersion, and absorption, mindfulness was identified as an important factor to increase national park stewardship, mediated by visitors' experiences.

Practical Implications

Voice User Interface Design

This study identified that podcast tours have a potential to enhance positive tourist experiences by increasing interpretation effectiveness. The result suggests that effective voice-interface design enhances experiences. In particular, the number of narrator voices in podcast tours influences social experiences. Compared to podcast tours recorded by single voice, podcast tours with multiple voices tend to increase social presence perceptions. Therefore, parks should consider recording podcast tours using multiple message sources.

Narration Style

Audio tours are often developed using general and formal descriptions of destination information without considering the effectiveness of their narration style. This study provided some evidence that the narration styles (conversational vs. formal style) of interpretation services have different impacts. More specifically, podcast tours tend to be more effective in increasing visitors' experiences just by including second

person words or phrases as well as contents related to the listeners. Therefore, developers of podcast tours should consider conversational narration to increase the effectiveness of the tour.

Enhanced Experiences

The findings of this study show that social presence and mindfulness are critical in enhancing visitor experiences. Thus, it is important for national parks to find ways through which social presence perceptions and mindfulness can be increased. While a link could be made between specific podcast tour characteristics and social presence perceptions, more research is needed to explore what podcast characteristics could influence mindfulness.

Stewardship

One significant finding of this study is that enhanced visitor experiences lead to greater stewardship toward the park. As identified in this study, information technologies as interpretation service tools can play a role in ultimately increasing stewardship if they enhance the visitor experience. Thus, enhancing visitor experiences should be the primary focus in efforts to increase stewardship.

Self-guided Tours by Mobile Technologies

Park ranger-based interpretation services have been one of the most effective and preferred interpretation services. However, park ranger interpretation services are limited

in terms of time and cost whereas podcast tours are not. The participants in this study had experience in using podcast tours and generally had a high opinion of the tour offered. This suggests that national parks should consider offering this kind of interpretation service.

Padre Island National Seashore

Since PAIS was the context of this study, the analysis was conducted based on data from real visitors to PAIS. This means the findings of this study are especially relevant to PAIS. The study developed successful podcast tours which can now be used by PAIS as interpretive materials to enhance visitor experiences in their park.

Limitations of the Current Study

The present study has some limitations. First, the experiment was conducted only during a 10 day period in August. Most of the participants were therefore recreational visitors. The results indicate that their openness to formal interpretation is rather low. This might have influenced the results. Therefore, the sample might weaken the generalizability of the current study. Second, although visitors to the park were randomly approached, self-selection biases might still exist as not everyone agreed to participate in the study. Since no incentives were provided, participation was dependent on the motivation of the participants to help with the study.

Third, this study did not test for the effects of personal characteristics such as demographics, personality, technology experiences, visit or travel characteristics, etc.

Future research should investigate whether certain personal characteristics or visit

characteristics facilitate the use of podcast tours and, consequently, their influence on

social presence perceptions and mindfulness.

Fourth, the study did not have a control group. A control group could have

allowed for a test of the overall influence of having access to a podcast tour. Since there

is very little interpretation in PAIS, just the fact of having a podcast tour available could

have been so influential that differences in the characteristics of the podcast tours could

have been masked. Unfortunately, due to the lack of a control group, this assumption

cannot be tested.

Fifth, one of the findings is that the relationship between the characteristics of the

audio tour and social presence/mindfulness is not strong. The path coefficient between

information source composition and social presence were 0.19 and narration style and

social presence was 0.07. Problems with the manipulation of the conditions could have

caused these weak relationships.

Suggestions for Future Research

This study can be applied to other contexts (e.g., museums) which are contexts

that are very different from national park environments. There is no doubt that it is

important to increase tourist or visitor experiences on-site in contemporary tourism. This

study identified social interaction experiences increased by podcast tours and

mindfulness as important determinants to increase tourists or visitors experiences.

However, since the present study was only conducted in a national park environment, it

is not known whether the findings can be applied to other tourism contexts. As an example, in a museum, the effect of podcast tours might be different because museums provide a variety of exhibits or interpretation information through multimedia or information technologies, which attract museum visitors' attention. This means, the effectiveness of podcast tours in increasing museum visitors' experiences might be limited. A big national park such as Yellow Stone also might require different podcast tour designs. It is easily assumed that podcast tours might be more effective in such a setting because visitors would be more isolated from national park rangers and interpretation services than in small size parks. Therefore, in the future, it will be valuable to investigate the effect of podcast tours on tourist experiences in different tourism contexts.

It is expected that other podcast tour characteristics such as sound/music effects, gender of voice and length of the audio segments influence the relationships among the tested constructs in the research model. The present study tested only information source composition and narration style focusing on the effects of multiple voices and conversational narration style in increasing visitors' experiences. Other podcast tour elements should be considered in future research. For example, the gender of voices has different effects on persuasion. It has been argued that female voices are perceived as more sensitive, emotionally responsive, people-oriented, and kind (Nass et al., 1997). In contrast, male voices are more trustful depending on the context (Nass & Brave, 2005). Thus, such effects need to be tested in the context of podcast tours.

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APPENDIX A

LIST OF NATIONAL PARKS THAT PROVIDE PODCASTS AND VIRTUAL TOURS (LEWIN, 2008)

Parks	Links
Acadia National Park	http://www.nps.gov/acad/photosmultimedia/virtualtour.htm
Antietam National Battlefield	http://www.nps.gov/anti/planyourvisit/hiking.htm
Black Canyon of the Gunnison National Park	http://www.nps.gov/blca/photosmultimedia/parkcast_srtour.htm
Canyonlands National Park	http://www.nps.gov/cany/photosmultimedia/multimedia.htm
Clara Barton National Historic Site	http://www.nps.gov/clba/photosmultimedia/virtualtour.htm
Curecanti National Recreation Area	http://www.nps.gov/cure/photosmultimedia/parkcasts.htm
Everglades National Park	http://www.nps.gov/ever/photosmultimedia/podcast.htm
Gettysburg National Military Park	http://www.nps.gov/gett/historyculture/gettysburg-podcast-tours.htm
Glacier National Park	http://www.nps.gov/glac/photosmultimedia/index.htm
Grand Canyon National Park	http://www.nps.gov/grca/photosmultimedia/index.htm
Jefferson National Expansion Memorial	http://www.nps.gov/jeff/photosmultimedia/pastcast.htm
Katmai National Park and Preserve	http://www.nps.gov/katm/photosmultimedia/katmai-podcasts.htm
Mississippi National River & Rec. Area	http://www.nps.gov/miss/hrhy.htm
Petersburg National Battlefield	http://www.nps.gov/pete/photosmultimedia/virtualtour.htm
Richmond National Battlefield	http://www.nps.gov/rich/photosmultimedia/index.htm
Rock Creek Park	http://www.nps.gov/rocr/photosmultimedia/multimedia.htm
Yellowstone National Park	http://www.nps.gov/yell/photosmultimedia/multimedia.htm
Yosemite National Park	http://www.nps.gov/yose/photosmultimedia/index.htm

APPENDIX B

FORMAL SCRIPTS

Introduction (390 words)

Padre Island National Seashore is one of a chain of barrier islands that outline the coast of the United States from the top of Maine to the southern tip of Texas. The longest section of undeveloped barrier island in the world, Padre Island guards the Texas mainland coast from the direct attack of storms. The seashore stretches 65 and a half miles along the Texas coast, and contains a colorful history, dynamic ecosystem, and rich species diversity.

For many years, legends told of vast fortunes to be found of gold and silver, lost by the great Spanish sailing ships, rumored to be buried in the sands. Nomadic Native American tribes, Spanish troops, large cattle ranches, and even a navel bombing range have at one time called the seashore home. President John F. Kennedy signed a bill in 1962 that established Padre Island National Seashore. Because of the park's mission to preserve the land and seashore in its natural state, visiting the island is likened to stepping back into the past and seeing it as it has always been.

Mile after mile of wilderness beach create Padre Island, making it unlike any other federally managed beach around the country,. The undeveloped coastline is a sand and shell beach, with windswept dunes, wild landscapes of grasslands and tidal flats, and warm Gulf of Mexico offshore waves. Due to colder winters, the coral reefs often associated with barrier islands are not found here. During tropical storms or hurricanes, the waves can become a violent battering force upon the seashore.

The species diversity of Padre Island includes both terrestrial and marine wildlife. Birds such as the laughing gull and sandpiper can be seen along the beaches, coyotes and black-tailed jackrabbits inhabit locations farther inland, salt water fish such as sea trout and the saltwater catfish swim the waters, and five different species of sea turtles call the park home.

There are many ways to enjoy the park. Visitors are encouraged to drive or hike along the scenic roads and sandy beaches, in view of the grasslands and dunes. Sunbathing, swimming, bird watching, fishing, and strolling along the beach are also activities visitors may enjoy. Other ways to enjoy the water are boating, waterskiing, and windsurfing. While at Padre Island, please be courteous of other visitors, the landscape, and the wildlife so others may enjoy this beautiful park.

Nature and Eco-system (436 words)

If one word could describe the ecosystem of Padre Island National Seashore it would be change. There are many signs of change everywhere including the wind sculpting the sand, new seashells deposited by incoming and outgoing tides, and new channels cut into the island by the power of a great storm.

The barrier island itself is constantly evolving. Padre Island began forming as a submerged sandbar over 4,000 years ago. Factors such as sediment type and supply, sea-level changes, wave and current strength and direction, and tide magnitude all influenced the forming of the island. Currently, park scientists are documenting the slow expansion of the entire island toward the mainland as winds and storms deposit sand on the island's west side.

The plants and animals of Padre Island are well adapted to the ever-changing nature of their home. One such plant is the sea oat. This wild shore plant is able to move into an area of loose and blowing sand and take root where few other plants can. The growth and spreading of the sea oat's roots anchor the otherwise shifting sand, making it possible for other plants to take seed on the now growing dunes. These dunes may grow to heights of 30 or 40 feet. Only humans walking or driving on the grasses or a very powerful storm can destroy these stabilizing plants, thus leaving the wind free to carry away the sand of the built up dune. In all, the park has documented over 400 different species of plants!

Padre Island National Seashore is located on a major bird migratory route known as the Central Flyway. As a result, many birds come to the island to winter, breed, or make a brief stop to rest and feed in transit. The seashore is also home to resident, non-migratory species as well. The park has counted an astounding 350 plus species of birds within its boundaries. Depending on the time of year, visitors can see pelicans, sea gulls, egrets, plovers, ospreys, and hawks.

A delicately balanced food chain is in action on the island. Many species of rodents, including the south Texas pocket gopher, eat the native grasses. Coyotes and snakes eat these smaller rodents. The coyotes are the islands largest native mammal. Other mammals to look for are deer, raccoons, bats, and spotted ground squirrels.

The plants and wildlife at the park are not confined by park boundaries and many are temporary residents, like the sea turtles or the migratory birds. The research and work the park service staff accomplish on the island extends and has influence far beyond the park's established boundary.

Sea Turtles (395 words)

Five of the world's seven turtle species are found in the Gulf of Mexico: the loggerhead, leatherback, hawksbill, green, and Kemp's ridley. Each of these species is currently classified as either threatened or endangered. Human development on turtle nesting beaches, harvesting of eggs, slaughtering for food and consumer products, and incidental capturing by the fishing industry are to blame for the dwindling populations. The most endangered of the five species at the park is the Kemp's ridley turtle.

Sea turtles have never had it easy. They have always had a lot of predators that dig up and eat their eggs, predators that eat the hatchlings, and predators that eat them once they have made it into the surf and head out into the deep sea. The division of Sea Turtle Science and Recovery at Padre Island National Seashore conducts an active science, conservation, and public education program on behalf of all five sea turtle species. Other local, state, national, and international partnerships also contribute to the saving of these magnificent marine animals.

An extensive program to find nesting turtles is aided by island volunteers - as many as 140 a year! Patrols are made repeatedly of the island each day in search of nesting turtles and their eggs in an effort to protect them from various natural and human-related threats. The park has seen success with its efforts. In 2007, 128 Kemp's ridley nests were located in Texas, 73 of them at Padre Island. Nesting is more than doubling every 1-3 years and increases in nests are expected to continue.

When a nest is found, the eggs are removed and placed in incubators for protection, care, and monitoring. Other information collected is the date the nest was found and where the nest was found. A hatch date is also predicted. One or two days after hatching the young turtles are released back into the Gulf of Mexico. This is a grand event at the park, and the public is invited to watch the release. These happen sporadically during the summer and usually begin around 6:45am.

Visitors are also encouraged to do their part to help protect these endangered species. All tracks, or live or dead sea turtles spotted on the beach should be reported immediately to a Park Ranger. Do not detain nesting turtles or hatchlings on the beach, or force then back into the water.

Bird Migration/Birdwatching (382 words)

In 1998, Padre Island National Seashore was named a globally important bird area by the American Bird Conservancy. Because it lies on the central flyway, a major migratory route, over 350 different species of birds have been documented within the park. This is almost half of all documented bird species in North America!

In an arid region, Padre Island is able to provide both food and water to migrating and native species. Due to migration patterns and birds that winter in the park, best times to birdwatch are during the fall, winter, and early spring. Summer is also a time for watching many of the resident, non-migratory birds.

The Island is an important stop-over for many species of migratory birds. Some birds will follow the Gulf's coast line as they fly north or south. Some fly directly over the Gulf. For those who do the latter, many will stop on the island to rest, recover, and feed before continuing their journey.

There are three types of bird habitats within the park: beach, shore, and grassland. The laughing gull is the most common bird found on the beaches and the only gull species that is in the park year round. Quite a few of the migrants are shorebirds or wading birds, which feed on animal and insect life found in the wetlands. Other common birds along the gulf shore are the willet, black skimmer, great blue heron, and cormorant.

Some grassland birds pose more of a challenge for bird enthusiasts. Bobwhites, eastern meadowlarks, and Sprague's pipit tend to stay well hidden among the brush and can be difficult to find. The easiest birds to locate are the migratory or wintering raptors whose perch of choice is a fencepost, telephone pole or wire. These birds include the American kestrel, Osprey, and Harris's hawk.

The park is home to at least nine species of threatened or endangered birds, including the peregrine falcon, reddish egret, and Wilson's plover.

Padre Island National Seashore is unique in that almost all bird watching can be done from the car or on foot. Birdwatching from the car has been found to have distinct advantages because birds are less likely to take flight when a car approaches as opposed to a human approaching on foot.

Oil and Natural Gas Production at a National Park (359 words)

Padre Island National Seashore was established to preserve one of the last remaining stretches of undeveloped barrier island left in the country. This purpose corresponds with the National Park Service's mission to preserve and protect the special places in the country that collectively represent our heritage. However, oil and natural gas drilling are taking place in the park today.

When the land became the National Seashore in 1962, the previous owners retained the mineral rights. In the Act establishing the park, Congress did not authorize the purchase of the mineral claims that lie underneath the park lands or submerged lands. Instead, it left those rights in the hands of private and state entities. Backloaders, dump and water trucks can be seen hauling supplies and workers to drilling sites near Yarborough Pass.

The park works with the owners in the extraction of these minerals, while at the same time trying to maintain the integrity of the landscape and ecosystem. This is no small feat. In 2001, Padre Island completed a new gas and oil management plan in an effort to describe how best to care for this delicate balance. The plan includes very specific rules and regulations the energy companies must follow to decrease the impact of the gas wells on the seashore's delicate environment.

There is a long process drilling companies must go through before they can drill. A proposal to drill must first be submitted to the park for review. A document describing the impacts caused by drilling is prepared by the park. Items such as cultural resource protection, endangered and threatened species, and how the land will be returned to its prior state after the drilling ends are all areas taken into serious consideration. After the document is complete, the public is able to voice their concerns about drilling. Finally, based on the document and public comments, a decision is made as to whether or not to give the drilling company the green light.

If drilling is allowed, all drilling activities are closely monitored by the park in order to protect the values and purposes of the park set out by Congress when the seashore was established.

Shoreline Trash (345 words)

Walking along the beach at Padre Island National Seashore, visitors are often surprised by what they find. While the Gulf of Mexico currents deposit a fair amount of sand, seaweed, and driftwood onto the shores of Padre Island, anything man-made thrown into the Gulf, such as diapers, plastic bottles, and soda cans, also turn up on the beach. Tar and oil may also darken the sand. The amount and type of garbage sometimes surprises, or angers, visitors. It is out of place and contradictory to what the visitors expected to find at the park.

Starting in 1988, the park began to collect, catalogue, count, and inventory the types of non-natural debris found on the beaches. More recently, in 1994 the park began the Padre Island National Seashore Marine Debris Point Source Investigation. This study represents one of the first long-term comprehensive, marine debris research projects started in the United States.

Park staff and volunteers combed beaches and evaluated what they found. The project required daily cataloguing and removal of some 43 debris items from 16 miles of shoreline. There results showed the vast majority of the trash can be traced to the commercial shrimping industry that operates in the Gulf of Mexico. Another 14% comes from the offshore oil and gas industry. These items might be supplies that blow off drilling barges and platforms during a storm, or just due to worker carelessness. Of the oil and tar found on the beach, 94% can be traced to man-made sources such as oil spills, engine lube oil, and tanker washings.

Sometimes, the sources of the pollution start inland. People in cities and towns miles away from the Gulf may put hazardous waste such as used motor oil or other garbage into street drains of nearby waterways that eventually flow out into the Gulf, and are carried by the currents to the beaches of Padre Island.

Trying to keep 65 miles of shoreline clean is a staggering task. Park staffs do the best they can to keep the beaches as debris free as possible, but often rely on the assistance of volunteers. Visitors can help by disposing of waste in the proper receptacles while inland and at the beach.

APPENDIX C

CONVERSATIONAL SCRIPTS

Introduction (460)

Did you know the coast of the United States is ringed by barrier islands? Barrier islands help guard the mainland coast from the direct attack of storms. The park you are visiting, Padre Island National Seashore, is the longest section of undeveloped barrier island in the world. The seashore stretches 65 and a half miles along the south Texas coast, and contains a colorful history, dynamic ecosystem, and rich species diversity. Let me share a few tid-bits about the park with you.

You may be familiar with the famous Spanish sailing ships bringing treasure from the new world back to Spain, or of the great pirate battles on the high seas. Legends tell of vast fortunes of gold and silver lost at sea during those times, rumored to be buried in the sand of Padre Island. Had you lived here long ago, you would have come in contact with the nomadic Native American tribes, or Spanish troops, or been a part of the large cattle ranches that at one time called the seashore home. President John F. Kennedy signed a bill in 1962 that established Padre Island National Seashore as a place where the land and the seashore are to be preserved in its natural state. The island is undeveloped and during your visit you may feel like you've stepped back into the past.

If you have visited any of the other federal or state managed beaches in the United States, you will recognize that the miles of wilderness beaches at Padre Island differ greatly from all of them. If you explore the beach, you will find undeveloped coastline of sand and shell, windswept dunes, wild landscapes of grasslands and tidal flats, and feel the warm Gulf of Mexico waters. Don't let the mild nature of the waves fool you though; during tropical storms or hurricanes, the wave can become a violent battering force upon the shore.

The species diversity of Padre Island includes both terrestrial and marine wildlife. Walking along the beach you may see birds such as the laughing gull or the sandpiper. In the grasslands, keep your eyes open for coyotes and black-tailed jackrabbits. The park is also home to five of the world's seven species of sea turtles.

There are many ways you can enjoy the park. You are encouraged to drive and hike along the scenic roads and sandy beaches with views of grasslands and dunes. And of course, there's sunbathing, swimming, and fishing along the beach. You could also enjoy the water with boating, waterskiing, or windsurfing. We do remind you that while you're at Padre Island, please be courteous of the other visitors, the landscape, and the wildlife so everyone who visits, now and in the future, may enjoy this beautiful park.

Nature and Ecosystem (538)

If one word could describe the ecosystem of Padre Island National Seashore it would be *change*. If you look around you, there are many signs of change taking place even now. The wind is sculpting the sand, new seashells are being deposited on the beach by incoming and outgoing tides, and you may even stumble across a new channel cut into the island by the power of a great storm.

The barrier island itself is constantly evolving. Just like humans are born, grow, and eventually die, the island goes through similar stages. As an infant, Padre Island started as a submerged sandbar over 4000 years ago. Factors such as sediment type and supply, sea level changes, and wave and currents strengths all had a hand in creating the island you see now. Today, scientists are documenting the slow expansion of the entire island toward the mainland as wind and storms deposit sand on the island's west side.

Just as humans may adapt to the weather by wearing a jacket when it's cold or drinking more water when it's hot, the plants and animals of Padre Island adapt to the ever-changing nature of their home. One such plant you might see while you're here is the sea oat. This wild shore plant is able to move into an area of loose and blowing sand and take root, where few other plants can. The growth and spreading of the sea oat's roots anchor the otherwise shifting sand, making it possible for other plants to take root on the now growing dunes. These dunes may grow to heights of 30 to 40 feet. As you walk the grasslands area, look at the variety of plants growing on the dunes. Remember though, please do not climb on the dunes. Humans walking or driving on the grasses can destroy the plants, thus leaving the wind free to carry away the sand of the built up dune.

Did you know that Padre Island is located on a major bird migratory route known as the central flyway? A lot of birds come to the island for the winter, to breed, or for a brief rest and snack during their tiring migration. The seashore is also home to resident, non-migratory species as well. Did you know the park has counted an astounding 350 plus species of birds within its boundaries? Depending on when you visit, you may see pelicans, sea gulls, egrets, plovers, or hawks.

You may also get a glimpse of the island's food chain in action. Watch the ground in the grasslands carefully for rodents, such as the south Texas pocket gopher. The gophers eat the native grasses. Coyotes and snakes eat the gophers. The coyotes are the islands largest native mammal. Other mammals you can try to find are deer, raccoons, bats, and spotted ground squirrels.

Just as you are free to enter and leave the park, so can the plants and animals. They are not aware of boundary lines and many are not hindered by fences. The research and work the park service staff accomplish on the island extends and has influence far beyond the park's established boundary. In what ways might you have an influence on the park, even if you're not inside the gate?

Sea Turtles (494)

An old legend talks about cowboys coming down to the shores of south Texas, gathering up sea turtles, and herding them, like cattle, to larger cities up north. The story continues by saying the cowboys had to turn the turtles over on their shells every night to keep them from running away or stampeding. While you may be shaking your head, part of this story is true. Five of the world's seven sea turtle species call the shores of south Texas home. They are the loggerhead, leatherback, hawksbill, green, and Kemp's ridley. Have you seen a sea turtle yet?

While it may not have been cowboys collecting the turtles to sell them up north, human development on nesting beaches, harvesting turtle eggs, slaughtering them for food and consumer products, and incidental capturing by the fishing industry are to blame for the dwindling populations of sea turtles. Do you know which of the five species is the most endangered? It is the Kemp's ridley.

Sea turtles have never had it easy. They have always had a lot of predators that dig up and eat their eggs, predators that eat the hatchlings, and predators that eat them once they have made it into the surf and head out into deep seas. The park has a division of Sea Turtle Science and Recovery that conducts an active science and conservation project to protect the sea turtles. They are helped by as many as 140 volunteers a year.

Why do you think the park needs that much help? Remember, the beach is over 65 miles long. That's a lot of beach. The volunteers help patrol the long stretch of beach each day, looking for nesting turtles and their eggs to help protect both from various natural and human-related threats. But what do they do if they find turtles or eggs? When a nest is found, the eggs are carefully collected and placed in an incubator for protection, care, and monitoring. One or two days after hatching, the young sea turtles are released back into the Gulf of Mexico. This is an event you can get involved in. You are invited to come watch the turtles make their way down the beach to the waters of the Gulf. These events happen sporadically during the summer and usually begin around 6:45 in the morning. If you are interested in seeing this, ask a park ranger for details.

You can do your part to help protect these endangered sea turtles. If you are walking along the beach and see turtle tracks, or see a live or dead turtle, let a ranger know immediately. Mark the area so you can remember where it is if you need to leave to find a ranger. Try and keep other people away from the turtle. Please do not try to prevent a turtle from going into the water, or keep a turtle in the water that is trying to come up onto the beach. The turtle knows when it needs to dig a nest hole or return to sea for food, water and relief from the heat.

Bird Migration/Birdwatching (396)

Did you know that over 350 different species of birds have been documented within Padre Island National Seashore? This is almost half of all documented bird species in North America! In 1998, the seashore was named a globally important bird area by the American Bird Conservancy. This is because the island lies on the central flyway, a major migratory route between the tropics and central North America.

Padre Island lies in an arid region. What do you think of when you hear the word arid? You might picture a desert with scarce food and water. However, the island is able to provide both food and water for migrating and native species of birds. The best time for you to see birds is in the fall, winter, and early spring. Summer is also a time for you to watch the many native, non-migratory birds.

Just like you're stopping at the island, many migratory birds stop here before continuing their journeys. Some birds fly directly over the Gulf. This is a very long flight and very tiring. For those species that choose this flight pattern, it is necessary for them to stop on the island to rest, recover, and eat before they start the next part of their trip.

The region of the park you visit will determine the types of birds you will see. The laughing gull is the most common bird you will find on the beaches and the only gull species that stays in the park year round. Other common birds you might see along the beaches and shores are willets, black skimmers, great blue herons, and cormorants.

If you travel farther inland into the grassland area, you're going to see different birds. Some of the grassland birds may pose a challenge if you're not used to looking for them. The bobwhites, eastern meadowlarks, and Sprague's pipits tend to stay well hidden among the brush and can be difficult to find. The easier birds for you to spot are the migratory or wintering raptors whose perch of choice is a fencepost , telephone pole or wire. These birds include the American kestrel, osprey, and Harris' hawk.

Padre Island National Seashore is unique in that almost all bird watching can be done from your car. Birdwatching from your car has a distinct advantage because birds are less likely to take flight when a car approaches as opposed to a human approaching on foot.

Oil and Natural Gas Production in a National Park (479)

Have you seen the backloaders, dump and water trucks traveling through the park? They are hauling supplies and workers to oil and gas drilling areas in the park. Is drilling allowed in the park though? Padre Island National Seashore was established to preserve one of the last remaining stretches of undeveloped barrier island left in the country. This purpose corresponds with the National Park Service's mission to preserve and protect the special places in the country that collectively represent our heritage. If this is true, then why is there drilling in the park?

When the land became the National Seashore in 1962, the previous owners retained the mineral rights. In the Act establishing the park, Congress did not authorize the purchase of the mineral claims that lie underneath the park lands or submerged lands. Instead, it left those rights in the hands of private and state entities. If you live in a house, the building and your yard belong to you. However, the sidewalk and all the pipes that run underneath the ground still belong to the city. It is much the same with Padre Island.

The park works very hard with the mineral right owners in the extraction of the oil and natural gas, while at the same time trying to maintain the integrity of the landscape and ecosystem to protect wildlife and so that you may enjoy the seashore when you visit. This is no easy task. In 2001, Padre Island completed a new gas and oil management plan in an effort to describe how best to care for this delicate balance. Their plan includes very specific rules and regulations the energy companies must follow to decrease the impact of the gas wells on the seashore's delicate environment.

In this plan, there is a time and place for you to get involved in the project. After a drilling company proposes to drill, a document describing the impacts caused by the drilling is created. Items such as cultural resource protection, endangered and threatened species, and a plan of how the land will be returned to its prior state after the drilling ends are all taken into serious consideration. Next is the part where you come in. When the document is complete, it is released to the public. This is a time when you can voice your opinions and concerns about the drilling project. Finally, based on the document and the public comment, a decision is made as to whether of not to give the drilling company the green light.

If drilling is allowed, all drilling activities are closely monitored by the park in order to protect the values and purposes of the park set out by Congress. If you have any more questions about this process of public comment, or are curious as to where drilling might be taking place currently in the park, please ask a ranger.

Shoreline Trash (480)

As you walk along the beach, you may start to notice trash. Where does is all come from? Why isn't the park trying to take better care of the beach? While the Gulf of Mexico currents deposit a fair amount of sand, seaweed, and driftwood onto the shores of Padre Island National Seashore, anything man-made thrown into the Gulf, such as diapers, plastic bottles, and soda cans, also turn up on the beach. What is that dark, slimy stuff on the bottom of your foot? Tar and oil may also darken the sand. You may feel the garbage is out of place and contradictory to what you were expecting to find at the park.

Don't worry, the park is doing something about this. Starting in 1988, Padre Island began to collect, catalogue, count, and inventory the types of non-natural debris found on the beaches. More recently, in 1994 the park began the Padre Island National Seashore Marine Debris Point Source Investigation. This study represents one of the first long-term comprehensive, marine debris research projects started in the United States.

So what exactly did the park do? Staff and volunteers combed beaches and evaluated what they found. The project required daily cataloguing and removal of some 43 different debris items from 16 miles of shoreline. That's a lot of beach! Their results showed the vast majority of the trash can be traced to the commercial shrimping industry that operates in the Gulf of Mexico. On a clear day, you may be able to see the shrimp boatsway out in the water, with their nets hanging off the sides of the boat like large curtains.

Other trash was found to come from the offshore oil and gas industry. These items might be supplies that blow off the drilling barges and platforms during a storm, or just due to worker carelessness. Of the oil and tar found on the beach, 94% can be traced to man-made sources such as oil spills, engine lube oil, and tanker washings.

Sometimes, the sources of the pollution start inland. Have you ever seen trash along the sides of the road, or people pouring used motor oil or other chemicals into the storm drains on your street? When people in cities and towns miles away from the Gulf do this, the items eventually flow out into the Gulf, and are carried by the currents to the beaches of Padre Island.

Trying to keep 65 miles of shoreline clean is a staggering task. Park staff does the best they can to keep the beaches as debris free as possible, but often rely on the assistance of volunteers. You can help too. Please put all your own trash items in the proper receptacles both at home and on the beach. You can also volunteer to help on Beach Clean up Days. Ask a Ranger about the next clean-up event.

APPENDIX D

QUESTIONNAIRE BEFORE EXPERIMENT

PODCAST TOUR STUDY

Please read each question carefully before answering to the best of your ability. Your answers will be kept strictly confidential.

1. How many times have you visited the Padre Island National Seashore in the past 3 years (including this visit)? *Please ✓one of the choices below.*
   - ❑ This is my first visit   ❑ 2-3 times   ❑ 4-5 times   ❑ 6 times or more

2. When did you make the decision to visit this park? *Please ✓one of the choices below.*
   - ❑ Earlier today   ❑ Within past week   ❑ 1 ~ 5 months ago
   - ❑ Yesterday   ❑ 1 ~ 3 weeks ago   ❑ More than 6 month ago

3. How many people (total adults and children) are in your group including you? *Please ✓one of the choices below.*
   - ❑ One   ❑ Two   ❑ Three   ❑ Four   ❑ Five or more

4. How many children are in your group? *Please fill in a number or 0 if you do not have children of that age in the group.*

   _____Number of children under 5 years
   _____Number of children between 6~12 years
   _____Number of children between 13 ~ 17 years

5. Approximately, how many hours or days will you stay at the park this time? *Please ✓one of the choices below.*
   - ❑ Less than 1 hr   ❑ 1 hr ~ Less than 2 hrs   ❑ 2 hrs ~ less than 5 hrs   ❑ 5 hrs ~ less than 24 hrs
   - ❑ 1 ~ 2 days   ❑ 3 ~ 4 days   ❑ 5 ~ 6 days   ❑ 7 days or more

6. Please indicate how important the following factors were in deciding to visit this park.

	Not important at all				Very important
Having fun	1	2	3	4	5
Experiencing something different	1	2	3	4	5
Feeling the special atmosphere of the park	1	2	3	4	5
Visiting a place related to my personal interests	1	2	3	4	5
Being away from daily routine	1	2	3	4	5
Giving my mind a rest	1	2	3	4	5
Getting away from everyday stress/pressure	1	2	3	4	5
Resting and relaxing	1	2	3	4	5
Strengthening relationships with my family/friend(s)	1	2	3	4	5
Doing something with my family/ friend(s)	1	2	3	4	5
Being with others who enjoy the same things as I do	1	2	3	4	5
Doing things with my companion(s)	1	2	3	4	5
Viewing the scenery	1	2	3	4	5
Being close to nature	1	2	3	4	5
Getting a better appreciation of nature	1	2	3	4	5
Being harmonious with nature	1	2	3	4	5
Learning about the park	1	2	3	4	5
Learning something new	1	2	3	4	5
Expanding my knowledge	1	2	3	4	5
Gaining a better understanding of the park	1	2	3	4	5

7. In which activities are you going to be participate during this visit? *Please check ✓all that apply.*
   - ❑ Walking on the beach   ❑ Camping on the beach   ❑ Picnicking on the beach   ❑ Driving on the beach
   - ❑ Sightseeing   ❑ Birdwatching   ❑ Fishing from shore   ❑ Fishing from a boat
   - ❑ Sail line fishing   ❑ Sunbathing   ❑ Socializing   ❑ Boating
   - ❑ Swimming   ❑ Wind surfing   ❑ Running   ❑ Kayaking
   - ❑ Playing active games   ❑ Organized beach cleanups
   - ❑ Attending educational/interpretive programs   ❑ Collecting shells and things on the beach

This final section of the survey asks for information about you.

8. Do you own an MP3 player (iPod, etc) or cell phone which can store and play audio files? *Please ✓one.*
   ❑ Yes   ❑ No

9. Have you ever listened to podcasts (music, audio information) before?   ❑ Yes   ❑ No

10. What is your relationship to new technologies? *Please circle a response that best fits your answer to each statement.*

	Strongly Disagree				Strongly Agree
I know about new technologies before most other people in my circle do.	1	2	3	4	5
In general, I am among the first in my circle of friends to buy a new technology.	1	2	3	4	5
Compared to my friends, I use new technologies a lot.	1	2	3	4	5

11. Please indicate how strongly you agree or disagree with each statement about your relationships with others by circling the number that best fits how you feel.

	Strongly Disagree				Strongly Agree
I think being close to others, listening to them, and relating to them is one of my favorite and most satisfying pastimes.	1	2	3	4	5
I would find it very satisfying to be able to form new friendships with whomever I liked.	1	2	3	4	5
Just being around others and finding out about them is one of the most interesting things.	1	2	3	4	5
If I feel unhappy or kind of depressed, I usually try to be around other people to make me feel better.	1	2	3	4	5
I usually have the greatest need to have other people around me when I feel upset about something.	1	2	3	4	5

12. Please indicate how strongly you agree or disagree with each statement.

	Strongly Disagree				Strongly Agree
I believe national parks are important.	1	2	3	4	5
I deeply care for the national park system.	1	2	3	4	5
I think that national parks should be supported.	1	2	3	4	5
I have an emotional connection to national parks.	1	2	3	4	5
It is important that I take actions to preserve our natural and cultural resources so that they remain available for future generations.	1	2	3	4	5
It is important that I take actions to help manage our natural and cultural resources responsibly so that their conditions improve.	1	2	3	4	5
It is important that I take actions showing that I respect national parks.	1	2	3	4	5

13. Please indicate how likely you are to engage in the following activities.

	Not at all likely				Very likely
Donating money to the national park system	1	2	3	4	5
Volunteering in a national park	1	2	3	4	5
Joining a park membership organization	1	2	3	4	5
Visiting national parks on a regular basis	1	2	3	4	5
Encouraging others to visit national parks	1	2	3	4	5
Lobbying for the cause of national parks	1	2	3	4	5
Sharing my knowledge of national parks with others	1	2	3	4	5

14. I am . . . *Please ✓one.*   ❑ Male   ❑ Female

15. My age is . . . *Please ✓one.*
   ❑ 18-24 years   ❑ 25-34 years   ❑ 35-44 years   ❑ 45-54 years   ❑ 55-64 years   ❑ 65 years or older

16. What is the highest level of formal education you have completed? *Please ✓one.*
   ❑ Sixth grade or less   ❑ Less than 12 years   ❑ A degree from a 2-year college   ❑ Some graduate school
   ❑ High school graduate   ❑ Some college   ❑ Graduated from 4 year college or uni.   ❑ A graduate degree

THANK YOU FOR YOUR PARTICIPATION!!!!
Please return the completed questionnaire to the research assistant in order to continue with the audio tour.

APPENDIX E

QUESTIONNARE AFTER EXPERIMENT

PODCAST TOUR STUDY
Please read each question carefully before answering to the best of your ability. Your answers will be kept stri
confidential. What you have to tell us is important and we thank you for your help.

1. To how many audio segments did you listen among the six possible audio segments. *Please ✓ one of the choices below*
   ❑ None   ❑ 1 segment only   ❑ 2-3 segments   ❑ 4 or more segments

2. How many different speakers did you hear? *Please ✓ one of the choices below.*
   ❑ 1   ❑ 2   ❑ 3   ❑ 4 or more segments

3. Do you feel the speaker(s) personally addressed you? *Please ✓ one of the choices below.*   ❑ Yes   ❑ No

4. Please indicate how strongly you agree or disagree with each of the following statements by circling the answer that be
   fits your answer.

Opinion of audio tour….	Strongly Disagree				Strongly Agree
It was easy to understand how to use the audio tour device.	1	2	3	4	5
It was not difficult to select audio tour contents on the audio tour device.	1	2	3	4	5
The voice(s) on the audio tour were pleasant.	1	2	3	4	5
Information recorded in the audio tour was helpful.	1	2	3	4	5
Information provided in the audio tour was interesting.	1	2	3	4	5
The length of the audio segments was proper.	1	2	3	4	5
The amount of information presented was proper.	1	2	3	4	5
I was very satisfied with the audio tour.	1	2	3	4	5
The audio tour made me want to visit the park more often.	1	2	3	4	5
I will tell my family, relatives, or friends about the audio tour.	1	2	3	4	5

5. Please indicate your level of agreement or disagreement with the following statements:

When I listened to the audio information….	Not at all				A lot
I felt as if the/each narrator was talking to me.	1	2	3	4	5
I felt the narrator(s) conveyed feelings and emotions.	1	2	3	4	5
I was able to mentally imagine the/each narrator.	1	2	3	4	5
I felt cared for in the park even though there was no human guide.	1	2	3	4	5
I felt involved with the narrator(s).	1	2	3	4	5
I perceived the narrator(s)' messages as being personal	1	2	3	4	5

6. Please indicate how strongly you agree or disagree with each statement regarding your park experience.

While taking the audio tour,	Strongly Disagree				Strongly Agree
I could pay attention to what I was doing.	1	2	3	4	5
It was easy for me to concentrate on what I was doing.	1	2	3	4	5
I was able to pay close attention to the environment.	1	2	3	4	5
I was open to the experience of the moment.	1	2	3	4	5
I was able to focus on the moment.	1	2	3	4	5
Part of my mind was occupied with other topics, such as what I will be doing later, or things I'd rather be doing.	1	2	3	4	5
I noticed my surroundings when walking in the park.	1	2	3	4	5
I was aware of smells and sounds and feelings such as the wind blowing in my face.	1	2	3	4	5
I was attentive to my movements.	1	2	3	4	5
I was aware of other people in the park.	1	2	3	4	5
I could describe how I felt and thought at the moment.	1	2	3	4	5
I tended to make judgments about whether my thoughts were good or bad.	1	2	3	4	5
I made judgments about how worthwhile or worthless my experience was.	1	2	3	4	5
I tended to evaluate whether my perceptions about the park were right or wrong.	1	2	3	4	5

7. Please indicate how strongly you agree or disagree with each statement regarding your park experience.

While taking the audio tour,	Strongly Disagree				Strongly Agree
I expanded my understanding of the park.	1	2	3	4	5
I gained information and knowledge about the park.	1	2	3	4	5
My curiosity about the park was enhanced.	1	2	3	4	5
I learned many different things about the park.	1	2	3	4	5
I felt like I was in another world.	1	2	3	4	5
I got away from it all.	1	2	3	4	5
I got so involved that I forgot everything else.	1	2	3	4	5
I had fun.	1	2	3	4	5
I enjoyed being in the park.	1	2	3	4	5
I derived a lot of pleasure from the tour.	1	2	3	4	5

8. Did any of following happen because of the audio tour?

	Strongly Disagree				Strongly Agree
I now have a greater appreciation of the resources the park offers.	1	2	3	4	5
I feel more connected to the park.	1	2	3	4	5
I have more respect for the work of the park employees.	1	2	3	4	5
I feel more inclined to help this park.	1	2	3	4	5
I will more likely encourage others to visit this park.	1	2	3	4	5
I am more likely to donate to the park.	1	2	3	4	5
I am more willing to volunteer in this park.	1	2	3	4	5
I feel more inclined to visit this park on a regular basis.	1	2	3	4	5
I will more likely tell others about this park.	1	2	3	4	5

9 Please indicate how strongly you agree or disagree with each statement regarding your feelings about the park.

	Strongly Disagree				Strongly Agree
The Padre Island National Seashore is the best place for the activities that I enjoy.	1	2	3	4	5
I cannot imagine a better place for what I like to do.	1	2	3	4	5
For doing things that I enjoy most, no other place can compare to the Padre Island National Seashore.	1	2	3	4	5
The Padre Island National Seashore is my favorite place to be.	1	2	3	4	5
I have a strong emotional bond to the Padre Island National Seashore.	1	2	3	4	5
I feel attached to the Padre Island National Seashore.	1	2	3	4	5
I feel I belong in this park.	1	2	3	4	5
The Padre Island National Seashore means a lot to me.	1	2	3	4	5
What happens in this park is important to me.	1	2	3	4	5

THANK YOU FOR YOUR PARTICIPATION!!!!

Please return the completed questionnaire to the research assistant.

VITA

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