

ENJOYMENT OF TRAILS:
A FLOW-BASED STUDY OF CONTIGUOUS SIGNAGE RECALL

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Enjoyment of Trails: A flow-based study of contiguous signage recall

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Abstract

Flow is a state that occurs when the challenge of an activity and the skill level of the participant are in unison. This term has also been called “optimum experience” or “being in the zone” (Csikszentmihalyi, 1997). However, even a slight increase in challenge past one’s skill level can produce greater levels of enjoyment in any certain activity in which we engage (Csikszentmihalyi, 1999; Pearce, Ainley & Howard, 2005). This study was an attempt to add a slight increase in challenge of trail users at Katy Trail State Park (KTSP).

Through contiguous signage, or the content of one sign leading to the next, placed along the side of the trail, users were asked to recall the content upon their return from their trail walk via on-site questionnaire. The challenge, though non-physical, was an attempt to increase enjoyment in comparison to trail users without this signage in place. These results were analyzed in comparison with a control group without the signage in place. While mostly the enjoyment levels were largely homogenous, a few results did show some significance. Some users were found to be more “engrossed” or felt it “meant a lot” for them to be on the trail that day. The exploratory nature of this study did net some results that could be useful in laying the foundation for future academic study in place attachment, enjoyment or motivation and provides some caveats for further study of enjoyment.

Chapter I: Introduction

By and large, parks and recreation departments nationwide focus their efforts on creating and maintaining recreational environments for which their community members and visitors can enjoy in a safe setting (Bell, 2008; Dorwat, Moore & Leung, 2007; Manning, 1999). Achieving the recommended 30 minutes of physical activity per day, five days per week is a common goal that is familiar in the field of parks, recreation and leisure (Giles-Corti & Donovan, 2002; Coon & Boddy, 2011; Pate, 1995). This study was an attempt to create an innovative method to encourage the engagement in physical activity through enjoyment by increasing the challenge of walking on a trail.

The study was set in the Katy Trail State Park (KTSP) adjacent to the town of Rocheport, MO. This state park is part of a “rails-to-trails” initiative that transforms out of use railroad lines into useable recreation areas. This provided an excellent setting for a trail available and accessible to all recreationists, regardless of skill or experience level. This setting, the introduction of a challenge, and the effect on enjoyment encompass the main concepts of this research.

The challenge, represented by contiguous signage as stated in the title, is the recall or recitation of the signage content evenly dispersed along the KTSP. This format was modeled after the Burma-Shave ad campaign that began in the 1920s (Chasar, 1998). Billboards, along America’s highways, advertised the Burma-Shave product and introduced a novel concept in advertising strategy. A set of contiguous billboards were laid out in a manner that lead the driver, passenger and potential consumer to read each subsequent billboard of the series to continue the unified message. This engaged travelers on the highways to follow along the continuing message and create a sense of

anticipation for the next awaiting sign. The advertising campaign was a huge success until the invention of television shifted product campaign focus elsewhere (Chasar, 1998). However, this model was borrowed and restructured for this study in an attempt to capture the attention of the trail users on the KTSP with a nature-based poem used as the contiguous signage content.

The following section will discuss the problem as it relates to this study and the hypotheses associated with it. Additionally, basic assumptions, delimitations and limitations in regards to the study will be introduced. Finally, the definitions of key terms and the significance of the study will conclude this introductory chapter.

Statement of Problem

Giles-Corti and Broomhall (2005) discovered that over 70% of the population here in the United States, as well as Australia, had visited a park within the calendar year. Empirical evidence shows that the existence of parks within communities does contribute to significant levels of physical activity (Bedimo-Rung, Mowen & Cohen, 2005; Sallis, Johnson, Calfas, Caparosa & Nichols 1997; Cohen et al., 2007). Additionally, it has been shown that the inclusion of trails (walking, jogging or biking) in parks' design also has had a significant positive effect on physical activity (Cohen et al., 2007).

While the increase of physical activity amongst community members is an important component to parks and recreation departments nationwide, ultimately this study focused on the enjoyment levels based on an issued challenge. Numerous studies have shown that increased levels of enjoyment can determine future participation in a given activity (Dishman et al., 2005; Sorenson, 2005; Hagberg, Lindahl, Nyberg, &

Hellenius, 2008). With an increase of enjoyment in the KTSP, future pursuit of recommended levels of physical activity could ultimately be the result.

It is the role of the parks and recreation manager to include and encourage this physical activity (Bell, 2008). There are now tested claims that support a concept that adding new innovative methods to entice visitors to participate in physical activity during a visit to a park or trail helps keep locations fresh and enticing (Gross, Zimmerman & Buchholz, 2006; Kaplan, Kaplan & Ryan, 1998; Shernoff, Csikszentmihalyi, Schneider & Shernoff, 2003; Keirle, 2002). A new interpretive sign layout, piece of playground equipment or walking trail all could be examples of new elements to persuade citizens to use their parks. Maintaining and improving park functions are a large part of managements' responsibility and can ultimately increase visitation (Kaplan, Kaplan & Ryan, 1998). By increasing the numbers of visitors to parks and trails, recreation administrators may find an increase in the number of people achieving their recommended daily amounts of physical activity of 30 minutes per day. (Brownson et al., 2000).

The goal of this study was not to create new environments to promote physical activity but an attempt to add a new element within an outdoor recreation setting to further encourage visitation through enjoyment by increasing the challenge level. Increased enjoyment can encourage repeat visitation while innovative and interpretive ideas can add to the novelty of visiting a park or walking on a trail thereby making a trip to a park or trail, overall, more appealing (Bell, 2008; Malone, 1981).

In order for more enjoyment to be found, empirical studies have shown that a slight increase of challenge can contribute to higher user satisfaction

(Csikszentmihalyi,1999; Pearce, Ainley & Howard, 2005). This concept is based on the theory of “flow” that claims while the challenge of any activity matches the exact skill level of a user the state of “flow” can be found (Csikszentmihalyi, 1997). However, too much or too little challenge can negatively affect the user by creating feelings of anxiety and boredom, respectively (Csikszentmihalyi,1999; Csikszentmihalyi,1997). A closer look at the challenge to be implemented in this study is a good way to begin to understand the problem.

Walking is the most frequent and common way to achieve the recommended levels of physical activity found in numerous studies. (Siegel, Brackbill, & Heath, 1995; Giles-Corti & Donovan, 2002). Therefore, this seemed like the most practical recreational activity to study. However, for sampling reasons running and jogging were added to the sample population to include more participants in the study. Trail users on foot, located in the KTSP were designated as the sample population for this research. The first 2.32 km (1.44 miles) heading south on the KTSP from the trail access adjacent to the town of Rocheport, MO was deliberately chosen for this study for three reasons.

First off, because the trail is a “rail trail”, or trail that has taken the place of railroad tracks, the elevation of the terrain remains flat throughout the study site. On a flat trail, the level of challenge remained constant for all participants. While some users may have been in better physical condition than others, any visitor that walks, runs or jogs this trail could find it absent of physical challenge. Second, this trail provided a setting that encourages foot traffic. The surface of the trail, while frequently used by bicyclists, was also designed for visitors who would prefer to be on foot. Finally, this stretch of the KTSP provided an excellent scenic opportunity for all trail users. The trail runs directly

between the Missouri River on the west side and rocky cliffs on the east side, providing scenic corridors for the entirety of the stretch of trail in focus for this study.

Along the west side of the trail a signage system was put in place. A total of six signs, each had one line of a poem relating to the surrounding environment, were placed ¼ mile apart from the main Rocheport trailhead to the I-70 bridge. The challenge of this study was, for the experimental group only, to recite or recall the content of the poem. Enjoyment levels were recorded across both the experimental group and the control group for statistical results.

Hypotheses

Research Question: Will the introduction of a new element and challenge encourage participants to enjoy their experience in the KTSP more than those without the challenge?

Secondary Research Question: Based on previous use of trail, age and distance travelled will levels of enjoyment be affected by the signage system.

The installation of the signs along KTSP provided a new element to this trail. The issuing of a challenge, in the experimental group, created an increase in enjoyment as it compared to the control group. Survey results, from the same instrument, were compared across both groups, experimental and control, to determine the significance of the signage challenge.

H₀1. *There will be no significant difference in enjoyment levels on the KTSP between the control group (walkers, runners and joggers without the signage in place) and the experimental group (walkers, runners and joggers with the signage in place).*

Previous visits to KTSP outside of Rocheport, has shown evidence of frequent use from many local visitors. With concepts from place attachment research, it has been

shown that those that live closer to an area of interest experience greater meaning in an activity. This hypothesis measures the relationship with meaning, or place identity, and levels of enjoyment. Results will be explored for the experimental group only.

H₀2 *There will be no significant difference in enjoyment levels between those that use the trail more frequently than those that use it less.*

It was assumed that those in a higher age bracket would achieve higher levels of enjoyment from the signage recall challenge than those in a lower age and middle age brackets based on past studies examining enjoyment differences in age (Blick & Howe, 1984; Garcia, Molina & Navarro, 2007). This hypothesis was posited to explore a link with past research to those in a higher age bracket experiencing greater levels of enjoyment than those in younger brackets. It simply provides a look into the results of the experimental group through a demographic scope.

H₀3. *There will be no significant difference of enjoyment between those that are in a higher age, middle age and lower age brackets.*

Finally, in terms of motivation, it was hypothesized that those with the signage in place (experimental group) would travel farther than those without the signage in place (control group). The contiguous manner of the signage would motivate the trail user to view the next sign in succession to receive the ultimate message.

H₀4. *There will be no significant difference in the distance travelled between the control group and the experimental group.*

Basic Assumptions

The primary assumption was that walking requires no particular skill level. It was assumed that if someone were able to walk, they would be able to walk on this stretch of

the trail without difficulty. The terrain of the trail was completely flat through the entire duration of the walk for this study and would not be a hindrance or create a challenge based on different levels of skill or trail-walking experience of the user. Therefore, it was assumed that all participants would possess the same skill level. The same assumption was made in regards to a person using a wheelchair.

It was important to note that the cornerstone of the study was the increase of a challenge that did not exist prior to the study in the experimental group. The introduction of the challenge, through the recall of the signage content, would provide the variable that created the desired data for the first, and primary, hypothesis.

Delimitations

Prior to this study, it was essential to note any potential weaknesses that were self-imposed by the researcher in order to narrow the scope of the findings. Four key delimitations were evident and focused on the external factors that would challenge the data-gathering methods. The location of the trail, the poem and its content, some sampling issues, and the location of the park and more specifically the trail within the park all were considered before fully comprehending the results of this study.

The first delimitation was the location of the park and trail from which this study pursued participants. There were two directions that a participant could choose to travel, departing from the trailhead in the town of Rocheport, MO on the KTSP. Therefore, the population was potentially cut in half as this study only focused on users traveling southbound. There was an obvious trail head from which to draw participants however there is also another, smaller trail that links onto the KTSP from above the riverbed in the middle of the study site. This trail leads up to the Les Bourgeois Winery and is a popular

destination, especially on weekends, for trail users. The users of this smaller trail would have had no frame of reference as to what the purpose of the signs actually were and could have potentially contaminated the study site without knowing the study parameters. Additionally, if the winery was the destination of the trail user, there could have been a large amount of elapsed time in between the walk's onset and the return back to the starting point effecting recall results. Furthermore, this trailhead was located after just the third of six signs leaving all participants who make this a destination less likely to have viewed the entire signage system.

As previously discussed, walking is the most preferred mode of achieving levels of physical activity and walkers, runners and joggers on the trail will be the target population (Siegel et al., 1995; Giles-Corti & Donovan, 2002). However, because of the length of the KTSP, cyclists frequently use the trail and often just simply pass through the Rocheport area. Despite this, local knowledge and suggestions on trail users and the foot-traffic usage was enough to designate this location as a viable place to record data on walkers, runners and joggers. With the study only taking place on weekends and during the leaf-changing months, there was believed to be an increased visitation by both walkers and cyclists based on local knowledge of trail use.

The time of data-gathering was another factor that could certainly affect the internal validity of this study. This study was conducted during the weekends in October. An argument could be made that results would have been different if the data were gathered in other days of the week or months of the year. Participants' level of enjoyment could have changed with the time of day and day of the week. Those walking on Monday mornings at 9:00 am may have responded differently on Saturday at 9:00 am. To combat

this issue, both groups were tested at similar times on the same days. The testing of these groups created some additional delimitations based on the content of the test, or challenge, itself.

A poem was constructed in an attempt to fit the surrounding environment and appropriate audience. The content was subject to frequent revisions in order to find the most unbiased, concise and appropriate level of difficulty to most effectively blanket an entire population. There were ways in which users can find the signage unsatisfactory. Some may have thought the poem to be too long, others too short. Some may not have appreciated the content or found it intrusive. The interpretive nature of the poetic signs were part of the strength of this study, however, it was expected that the content, length or layout would detract from a few participants. This would result in the opposite effect desired but was a real possibility that needed to be taken into consideration.

Limitations

A few other factors that could have limited the study outside of the researcher's control also needed to be kept in mind. The outdoor environment could have presented challenges as well as the time of the year that the study took place. Numerous factors such as falling rocks or unpredictable fauna were all possibilities that could have directly affected the way a participant may have completed the questionnaire. For instance, one user may have come across a swarm of bees on the trail while another may have seen a bald eagle in sight for the duration of their walk. It could be assumed that their experience would have been directly affected in an enjoyment capacity and could have ultimately damaged the validity of their responses. While either of these events taking place represents a rather small likelihood, they needed to be accounted for all the same.

Because this data was being gathered outside, on a 1.44 mile stretch of trail, numerous unexpected variables could have arisen outside the awareness of the primary researcher waiting to administer the questionnaire.

The goal of this study was to provide exploratory data and results for future studies regarding enjoyment and challenge. No study is without limitations and this study was no exception to that rule. Further discussion and addition of limitations were made at the conclusion of the data-gathering.

Definition of Terms

Challenge is a keyword for this study. Like enjoyment, the operational definition of this word will help to initiate the relationship between enjoyment and challenge. Challenge is defined, in part, as “anything, as a demanding task, that calls for special effort or dedication” (Webster’s New World dictionary, 1988. p. 232).

Enjoyment is a word that requires very little explanation. However, because this concept is so prevalent throughout this study it will be necessary to understand the definition of “enjoyment” that will be used in this circumstance. Enjoyment is defined in part, as “the pleasurable experiencing of something” (Webster’s New World dictionary, 1988, p.451). For the purpose of this study, this will provide the operational definition.

Flow is a commonly found theory in the field of parks and recreation. It is based on the relationship of the challenge level to the skill level in any given activity. The theory describes a participant to be in the state of flow when the levels of each are exactly equal (Csikszentmihalyi, 1999). However, if the skill and challenge levels are not balanced, feelings of both anxiety and boredom can be felt based on the levels of challenge and

skill level in any given activity. (Csikszentmihalyi, 1999; Csikszentmihalyi, 1997; Pearce et al., 2005).

Katy Trail State Park is a 237-mile (386 km) trail that runs across the state of Missouri from Clinton, MO to Machens, MO and boasts America's longest "rail-to-trails" project. The KTSP provides a place ideal for walking, biking and riding horses while law prohibits the use of any motorized transportation (Ferster, 2006).

Physical Activity is an activity that is undertaken, by one's own personal choice and based on one's own personal needs and interests, to increase one's own total daily energy expenditure (Bouchard, Blair and Haskell, 2012). However, the idea that "physical activity is critically important for the health and well-being of people of all ages" pertains much more closely to this study (USDHHS, 2002).

Recall is a word that is commonly used in everyday life.. "To bring back to mind" or "ask to return" is the operational definition used for this study (Webster's New World dictionary, 1988, p. 1119). Therefore, participants will be asked to "recall" what they saw on the signage and "bring back to mind" what they can recollect from each of the six signs on the trail.

Significance of the Study

With attempts to provide more enjoyment through the reading, recalling and reflecting on the signage, the goal of increased visitation was the overall vision. By providing a more appealing setting to visit, more people were given the opportunity to enjoy their experience while achieving the recommended levels of physical activity on the trail.

The significance of this study may have provided management of parks, recreation and leisure a new concept to try and reach more American citizens. The installation of a series of contiguous signs could be relatively inexpensive and may be worth the effort to bring some innovation to a field that is consistently attempting to strive for visitors' satisfaction and ultimately, a healthier community (Bultena & Klessig, 1969; Bell, 2008; Dorwat, Moore & Leung 2007; Manning, 1999; Manning, 1986).

Additionally, the conclusions from this study will be added to the pre-existing base of knowledge and produce further interest in a variety of areas. Enjoyment and challenge are two constructs to which this study will contribute.

Chapter II: Review of the Literature

Overview

Experts in the field of parks, recreation and leisure place great importance on their communities' citizens maintaining an active lifestyle and promoting the necessity of achieving the recommended balance of thirty minutes a day, five days a week of physical activity on a consistent basis (Giles-Corti & Donovan, 2002; Coon et al., 2011; Pate et al., 1995). Giles-Corti and Donovan (2002) and Seigel et al. (1995) each found that among all demographics covered in a wide array of studies based on physical activity that walking was the most common way to be physically active. Each study found that over 75% of participants preferred this mode of physical activity to any other. Forty-five out of fifty states in the union were surveyed to gather this data making it generalizable to most everyone living in the United States as opposed to an isolated region (Siegel et al., 1995).

In order for park and recreation officials across the country to encourage physical activity, constant efforts are made to provide diverse and evolving methods to promote natural resources as a source for leisure, recreation and physical activity (Read, 1980; Marwijk, Elands & Lengkeek, 2007; Malone, 1981; Bell, 2008; Kaplan, Kaplan & Ryan, 1998). Based on the concept of "flow" (Csikszentmihalyi, 1997) that determines one's "optimal experience" when there is a perfect balance of challenge and ability in any given activity, this study will attempt to provide an innovative way to increase challenge and, in turn, increase enjoyment to participants (Ghani, Supnick & Rooney, 1991; Malone, 1981; Csikszentmihalyi, 1997). Studies have found that through an increase of enjoyment, participants have been found more likely to return and repeat an activity (Keirle, 2002;

Bultena and Klessig, 1969; Jubenville and Twight, 1993; Lu & Michael, 1994; Shernoff et al, 2003). This concept is featured in this study. By adding a challenge, albeit non-physical, to a task that requires very little skill, such as walking on a trail with little terrain change, a balance can be found on the flow continuum (Csikszentmihalyi, 1997). By slightly increasing the challenge, more enjoyment may be found.

The following will revisit past studies related to the relationship between an increased challenge and an increase in enjoyment. Additionally, the need for new innovative and interpretive ways to attract the general population to walking trails will be included. Finally, a brief recap of poetry recall will take the form of the challenge component in this study and conclude this chapter. First, a recap of past studies related to the flow theory will provide the foundation for the rest of the review of literature.

Flow

Flow occurs when an exact match between the skill of a user and the challenge of a particular activity in which they are engaged is found (Csikszentmihalyi, 1999; Csikszentmihalyi, 1997). Often times the term “optimal experience” will be used when the user will be consumed by the activity, lose track of time, be totally caught up in what they are engaged in and have no concept of future or past within this state of “flow” (Csikszentmihalyi, 1999; Csikszentmihalyi, 1997). “Optimal experience” is another way of describing when one is experiencing extremely high enjoyment levels.

Another key concept to understand is the review of factors when challenge and skill are not in total balance. With an activity that has a high level of challenge in relation to a low skill level, anxiety often becomes apparent. The contrary is also true. In an activity where the challenge level is low and the skill level is high, boredom can set in for

the user (Shernoff et al., 2003; Csikzentmihalyi, 1999; Jackson & Csikzentmihalyi, 1999). These occurrences happen on a daily basis.

Flow concepts can be found in a vast array of disciplines dealing with both physical and non-physical activities. Flow is commonly found in the sports domain with players and coaches. Athletes were found to be in the state of flow more increasingly when workouts and competition levels of skill and challenge are being pushed to an extreme (Jackson & Csikzentmihalyi, 1999). Additionally, one can find themselves in a state of flow despite a non-physical activity. Users of the worldwide web can frequently find themselves engaged to the point where flow, or optimal experience, can occur (Skadberg & Kimme, 2004; Steuer, 1992). Clarke and Haworth (1994) conducted a study on sixth form (16-18 years of age) students and their flow experiences. It was found that there was a direct association between those students that reported more frequent flow experiences and high levels of psychological well-being.

Numerous studies use the flow theoretical framework to create an argument. As listed above, all different activities, physical and non-physical alike, can produce equal balances of challenge and skill leading to an optimal experience or increased levels of enjoyment.

Challenge

Csikszentmihalyi (1997) and Ghani et al. (1991) each support the theory that too much challenge can cause anxiety and too little can cause boredom in any activity in which we participate. Urdan and Midgely (2001) and Schweinle, Turner and Meyer (2006) also conducted studies that strengthened the concept that too much of an increase in challenge can actually decrease an experience due to an increased nervousness or

anxiety regarding a particular activity. Typically, a user of a trail would have free will as to whether they desire to utilize the challenge given by the poem recall, or not. Further exploration shows numerous different vanes of our culture accept the challenge/skill theory.

By adding learning goals in the classroom, it was found that higher levels of sustained motivation and feelings of achievement were attained when goals were met (Grant & Dweck, 2003). Grant and Dweck (2003) conducted this study in the field of education, more specifically a challenging pre-med undergraduate class. Shernoff et al. (2003) had similar findings in anxiety and boredom levels with an overbearing challenge or lack of challenge in any given activity, respectively. The focus of their study was based on adolescent student engagement in the classroom. It was found that a slight change in challenge and opportunity to increase a skill can lead to better engagement of students in regards to the material taught to them. Furthermore, those that were willing to go slightly above ability level in leisure time were rarely bored and, additionally, became more aware of alternate leisure opportunities (Barnett, 2005). While these studies were confined to students in a classroom, further studies outside of a school setting were also found to strengthen this claim.

Additionally, as found in other studies, the mastery of a goal is found to have a high correlation with levels of enjoyment in any particular activity (Dishman et al., 2005; Sorenson, 2005; Hagberg, Lindahl, Nyberg, & Hellenius, 2008; Merrill, Shields, Wood, & Beck 2004, 2004) . While goal orientation is important to understand in leisure practices it is also vital to note the fact that this theory has been studied in other cultural facets. For instance, workplace goals and challenges have been directly linked to job

satisfaction (Roberson, 1990). This fortifies the idea that not just adolescents are prone to flow states. Having goals and challenges to increase levels of satisfaction and enjoyment occur in all stages of the life-cycle.

In a recent study corroborating similar findings, Fulmer and Frijters (2011) found that even a moderate challenge can deepen the engagement and enjoyment of a task. This takes a closer look at including a challenge for which there is inherent interest. It can be assumed that those walking on a trail have been drawn there to fulfill an area of personal interest whether it be physical activity (Burroughs, 2006), social reasons (Kyle, Graefe, Manning & Bacon, 2004) or restorative aspects (Hartig, Mang & Evans, 1991).

Enjoyment

For the purpose of this study it is important to understand the relationship between challenge and enjoyment. While much of this was covered in the previous section, it is necessary to comprehend the value that enjoyment can bring to the field of parks, recreation and leisure in relation to physical activity.

Starting at an early age, enjoyment is a vital component in the continued pursuit of physical activity. An extensive study of adolescent African American and Caucasian girls showed that enjoyment was a key contributor to furthering interests of familiar activities in a leisure setting (Dishman et al., 2005). Further studies focused on the later stages in life and the results remained consistent. Research was done on middle-aged police officers in Finland that produced similar results concluding that enjoyment was highly important in ongoing engagement of physical activity (Sorenson, 2005). Similarly, Hagberg et al. (2008) found that as higher levels of enjoyment were achieved among the middle-aged population of both genders, higher levels of exercise are correlated. Finally,

among World Senior Games participants, enjoyment was the primary reason to train, compete and return to the games at future dates (Merrill et al., 2004). From adolescents to senior citizens, numerous studies found that enjoyment was a key contributor to engaging in physical activity at any age. (Allender, Cowburn, & Foster, 2006).

Understanding that the enjoyment of a leisure activity is crucial to further engagement in these actions, it is equally important to acknowledge what can create enjoyment in relationship to this study. In recent research, Lekies and Whitworth (2011) found that signs on trails can not only help make users feel more safe due to a man-made presence around, it can also alleviate theft and vandalism. However, it is important to note that, in some cases, it led to an overall higher enjoyment of the trail. Of course, it should be noted that signs are primarily in place to welcome users, highlight trail features and emphasize areas of interest (Lekies & Whitworth, 2011). An extensive review of literature, however, unturned no studies that correlated enjoyment to the challenge of reading and reciting signage on a nature trail.

Despite this, a recent study has shown that recitation has been known to not only be calming to the participant but enjoyable, as well (Meng-Yue, 2008). Others believe that recitation, or recall, is a way to enjoy speech without the need to create it for oneself or others. The reciting of poems, quotations or prose, primarily for adolescents, can create a way to better comprehend and analyze a previously written text (Cook, 1994).

Eisenberger et al. (2010) believes that the level of enjoyment in art, music and literature is directly associated with the level of description of the nature scene provided. The more detail included on the nature scene, the more one will enjoy the piece of art. This could be included with poetry, as well. The more one appreciates the detailed

descriptions of the language in literature, the more one can find enjoyment when it speaks to the surrounding nature.

Empirical evidence shows that if an activity is enjoyed, one is more likely to return to repeat the activity. Shernoff et al. (2003) discovered that a completion of a task, or challenge, one can experience greater enjoyment, as has been discussed previously. Furthermore, this enjoyment could lead to a return visit to the trail to repeat this action. Additionally, word of mouth can grow from this experience, expanding the exposure of this activity (Keirle, 2002). In fact, Morgan and Walker (2001), in a study regarding tours in a natural recreation setting, found that 35% of the respondents who gathered information on the site prior to their visit gained that information via word of mouth communication.

However, another study conducted by Garcia, Molina & Navarro (2007) addressed enjoyment levels among parents with children. It was found that parents engaging in leisure-time activities actually reported less enjoyment with their children present than those parents without their children.

Despite this, attempts for parks and recreation officials motivating the public to achieve thirty minutes of physical activity, five times per week, is consistently a struggle and yet a primary goal (Giles-Corti & Donovan, 2002; Coon et al., 2011; Pate et al., 1995). With new and repeat participants on the trails, more of the general population will be approaching these recommended levels of fitness. Providing new and innovative ways to allow communities' citizens to be more physically active and healthy is a goal that is shared universally among park and recreation departments nationwide (Manning, 1986;

Bultena & Klessig, 1969; Bell, 2008; Jubenville & Twight, 1993). Creating enjoyment can be a stepping stone to an increased level of involvement across all demographics.

Signage

Numerous studies have found signs to be a great motivator and predictor of enjoyment in physical activity. Ford and Torok (2008) and Grimstvedt et al. (2010) each conducted similar studies on college campuses attempting to motivate students, faculty, staff and visitors to use a set of stairs instead of nearby elevators. Different demographics were analyzed but positive results were found showing that signs motivating individuals to take stairs did increase stair use when placed near elevators. Bungum, Meachem and Truax (2007) conducted a study that posted motivational signs near elevators but were spread over a variety of different buildings in a neighborhood, not exclusive to a college campus. Again, it was found that these signs were significant predictors of stair use when in place and provided a more broad scope in which to view the results. A multitude of studies have been executed to encourage physical activity through stair use. While some provided motivational messages, another displayed the health benefits of taking the stairs relaying another way to motivate stair users (Andersen, Frankcowiak, Snyder, Bartlett & Fontaine, 1998). Again, positive results were found between the signs and increased stair use.

Since it has been well documented that signs can be a predictor of behavior, it is crucial to understand what signs can do. In most parks and recreation sites, signs are in place to guide, direct and inform (Bell, 2008; Kaplan et al., 1998; Gross, Zimmerman, & Buchholz 2006; Keirle, 2002). They highlight trail and park features, display useful information, and provide reassurance that the user of the trail is where they are meant to

be (Lekies & Whitworth, 2011). All in all, signs are in place to enhance an experience and/or fulfill peoples' needs (Rosegard, 2004). Any sign that is placed in the environment has a chance to create a sliver of an overall experience through perception and interpretation by each individual user (Marwijck, Elands & Lengkeek, 2007) and can, ultimately, aid in the overall enjoyment of an environment (Lekies & Whitworth, 2011). "What seems to be an unexciting, undifferentiated area, can, in time, become rich with memorable distinctness with the addition of special features." (Kaplan, Kaplan & Ryan, p. 15)

However, with signage in place, particularly in recreation settings, the content of each sign must come into question.

Poetry/Recall

The learning aspects of the previously-mentioned Burma-Shave ad campaign were not the primary goal of its initial movement. However, it was discovered that parents found it gave their children a great opportunity to learn to read and write more effectively. There were expectations to see the signs and feelings of anticipation grew when the next inevitable message approached. This ad campaign made poetry, in this format, more mainstream as it was on the road for everyone to see; not just available for those who chose to seek it out (Chasar, 1998).

Increased efforts can be found to reintroduce poetry and recitation in our educational system. Freeman (1994) discovered, teaching poetry at Westpoint Academy, that the importance of creativity was especially significant in a place of such regimented lifestyle. Through recall, while cloudy meanings of poetry can be difficult to fully comprehend initially, the reader is able to retain important messages that can be useful

for future and individual reference. In a study based on the use of poetry in healthcare, Foster and Freeman (2008) found that the study of rhyming stanzas had an effect on the development of emotional expression. Additionally, it was found that emotional empathy and self-discovery were also strengthened by the study of poetic works. It is believed that poetry is a way to see words and images another way and can begin to “plant seeds for growth in humanity” (Freeman, 1994, p. 45).

It has been shown that poetry for students is a strategy to explore their own experiences in relation to the written words. Reciting is a way to practice literature and oration without having to “drill” students (Sithamparam, 1991). By providing an avenue to decipher one’s own opinion on the content of a poem, higher levels of enjoyment can be found. In contrast, some teachers will prod students to find the “right” meaning of a poem, lessening the overall experience of poetry (Sturdevant, 1917). Poetry provides an opportunity to acknowledge good verse and an avenue for self-expression both in reading and writing practices. Each of these two factors has been known to increase the enjoyment of literature study in school (Paller, 1965). A poetic technique, such as rhyming, also can contribute to gaining the most out of an experience. (Lea, Rapp, Elfenbein, Mitchel & Romine, 2008) By gaining the most out of an experience, the highest levels of overall enjoyment can be attained.

In arts studies, greater amounts of enjoyment can be extracted from an experience that parallels an interest in the participant (Fulmer & Frijters, 2009). Alcock (1989) believes that poetry performance can produce higher levels of enjoyment but, most effectively, when the topic matter has a direct association with the reader. In this instance, the poem has a nature theme that directly corresponds to the surroundings of the

signs on which the poem is written. In essence, there is reason to believe that with the link between the nature content on the signs and the natural environment in which the participant has chosen to be, levels of enjoyment could be increased.

Meng-Yue (1998) believes poetry and recitation should be put back into school curriculum worldwide but also contends that poetry can be calming and enjoyable to people of all ages and should not be limited to the youth. While debates on whether poetry recitation should be reintroduced in the classroom are ongoing, it is clear that reciting and reading poetry can have positive affects on not only adolescents, but people of all ages. These incorporated challenges to increase enjoyment and promote increased use of trails are goals that are common among most outdoor recreation managers and can also contribute to an academic knowledge base on a paradigm called place attachment.

Place Attachment

The focus of this section is to better define how and why “places” hold such special meaning. The answer can be found in an exhaustively researched topic of “place attachment” in which certain locations represent certain meanings to an individual. The appropriate meaning for the term “place attachment” has been under much debate but for the purpose of this section it will be defined as the way individuals may respond to the value of a setting in specificity, functionality and satisfaction as well as the “goodness” for which to perform desired activities (Williams, Patterson, Roggenbuck & Watson, 1992).

One may find attachment to a place due to the activities for which a distinct place is associated (Mowen, Graefe & Verden, 1998). An example of this may be a skier attached to a mountain due to the preferential experience of skiing on this mountain. Two

other concepts of note are the proximity and frequency of visitation to any place in question (Bricker and Kerstetter 2000; Moore and Graefe 1994; Williams et al. 1992). In other words, studies have shown that the frequency in which we visit an individualized place can lead to attachment. Additionally, the proximity, or lack thereof, to one's dwelling can influence feelings of attachment to a place based on one's relative location to a given "place".

Intensity of involvement in a place can affect attachment qualities, as well. Bricker and Kerstetter (2000) believe that one's feelings of attachment can stem from the intensity of an experience or activity involvement at a certain place. With increased intensity of involvement, increased levels of attachment have been found to be correlated.

The essence of place identity, the first of the two constructs to the place attachment paradigm, can be largely determined by the statement that 'who we are' is related to 'where we are' (Dixon & Durrheim, 2000). While a true definition of the term place identity has yet to be confirmed, numerous distinctions continually appear in literature related to this concept.

The work of Williams, Patterson, Roggenbuck & Watson (1992) best represents common threads in the place identity discourse for the purposes of this enjoyment study. They believe that place identity is a symbolic interaction between person and environment. This can, then, be viewed as an essential part of oneself. Furthermore, it creates a strong emotional attachment to one with an experience of an environment.

However, this construct of place attachment, place identity, can create a discussion that will become relevant later on this document. Place attachment is a concept that is prevalent in many ways for one in an outdoor recreation management role. While

it is not a direct construct analyzed in this study, aspects of place attachment, such as visitor frequency and return visitation, is expanded upon further and more specifically. Additionally, some closing thoughts on this study as a whole in Chapter V do directly tie into some place attachment themes.

Outdoor Recreation Management

The job of an outdoor recreation manager is in place to maintain the wellness of visitors as well as the environment itself. They explain natural phenomena and simply connect visitors with their surroundings (Bell, 2008; Dorwat et al., 2007; Manning, 1999). However, three primary purposes encompass their overall efforts. First, attempts are made to create a diverse experience with options for recreation that can create interest for all demographics (Read, 1980; Bell, 2008; Manning, 1986). Second, it is well documented that the most vital role of the outdoor recreation manager is to create visitors' satisfaction (Coon et al., 2011; Bultena & Klessig, 1969; Galloway, 2002). Finally, in creating visitor satisfaction the outdoor recreation manager has opened the door for repeat visitations to their outdoor locations of interest, developing an opportunity for word of mouth to spread and, in turn, creating more of their citizens' interest in physical activity to increase (Bell, 2008; Gross et al., 2006; Kaplan et al.; Shernoff et al., 2003; Keirle, 2002). Consistently, the concept of thirty minutes of physical activity per day, five days per week is a notion that permeates through a vast number of studies in this particular discipline (Giles-Corti & Donovan, 2002; Coon et al., 2011; Pate et al., 1995). Increasing repeat visitation by providing diverse and satisfying ways to enjoy the outdoors, will result in more members of any given community the opportunity to attain the goal of the recommended weekly levels of physical activity.

New, interpretive ideas are constantly being introduced in park and recreation departments nationwide in order to promote diverse activities within one venue. Every location needs to be updated, maintained with a constant influx of new ideas (Bell, 2008). However, these new ideas need to maintain the thought that potential users will include members of both sexes, all different ethnicities with differing mental/physical abilities as well as a wide range in age and socio-economic status (Manning, 1986). It is important to be novel and thought-provoking but not be incomprehensible (Malone, 1981). People are explorers by nature and seek to broaden their own horizons (Kaplan, Kaplan & Ryan, 1998). That said, interpreting the outdoors is entirely subjective. What may be exhilarating and exciting to one visitor may be boring and uninteresting to another, further exemplifying the need for innovative, diverse thinking in parks and recreation (Williams & Patterson, 1999). Read (1980) believes that everyone is looking for their own “REAL” experience in outdoor recreation. He feels that each experience should be (R)ewarding, (E)nriching, (A)dventuresome and provide an opportunity to (L)earn for each individual. The way that each individual classifies these experiences will also be truly unique to each participant.

All of these efforts by outdoor recreation managers are in place to increase visitors’ satisfaction of their overall experience. Widely documented are the positive benefits that a visitor can experience while participating in an outdoor recreation area. Increasing energy and restorative capabilities while decreasing anger, aggression and depression are among a long list of positive attributes of physical activity in the outdoors (Coon et al., 2011; Bell, 2008). An extensive search of the primary goal of an outdoor recreation manager fortified the notion that visitors’ satisfaction is the most important

facet of their job description (Bultena & Klessig, 1969; Bell, 2008; Dorwat et al., 2007; Manning, 1999; Manning, 1986). Through utilizing such methods as placing signs on trails to guide and inform, for instance, the manager is able to provide an opportunity to comprehend the environment in which visitors are recreating more clearly. With each sign that is interpreted and perceived, a contribution to the visitor's overall experience, or satisfaction, has been made (Marwijk, Elands & Lengkeek, 2007). The experience will then be internally reviewed upon the conclusion of a visitor's participation. Frequently, if the user found the recreation opportunities created satisfaction or enjoyment and fulfilled their needs, repeat visitation was likely (Keirle, 2002).

The idea of repeating an activity in which one found enjoyment or satisfaction is not a complex one. However, empirical studies do back up the strength of this claim. With studies covering such subjects as thrill-seeking park enthusiasts to intense pre-med undergraduate students, it has consistently been found that the enjoyment of any given activity lead to further pursuits of similar qualities and often times, in familiar settings (Galloway, 2002; Shernoff et al., 2003). Why is this important? It has been found that over 70% of the populations of the United States and Australia have visited a park within the last year (Giles-Corti et al., 2005). It is the efforts of outdoor recreation managers in both of these countries to continue to promote diversity among their available amenities, increase visitors' satisfaction and encourage repeat visitation in hopes of encouraging the meeting of weekly recommended goals of physical activity by those that have visited an outdoor setting seeking recreation.

Chapter III: Methods

Sample

This study was conducted on the KTSP with trail users on foot only, comprising the sample. It should be noted that visitors who used wheelchairs were also to be included in the study, however, none were present during the days of collection. The only trait that excluded an individual from contributing valuable data was age. The subject needed to be at least 18 years of age to participate; a restriction put in place in an attempt to gain consistent and unbiased data while not requiring special permission to study minors. Beyond this, the data given by anyone willing was valuable in an attempt to strive towards generalizable outcomes. The criteria for sampling had the primary researcher ask anyone that looked under the age of 21 if they were of age to participate. However, no such case arose in the data collection process.

The sample was comprised of trail users on the last two weekends of October the KTSP heading south from Rocheport, MO trailhead. Data collection began throughout the day on Sunday, October 15th, 2011. Initially, data collection was to begin a day earlier however an additional study was taking place on the same day. A request by the Missouri Department of Natural Resources to delay data collection a day caused the scheduling alteration. Data was collected the following weekend as scheduled to conclude the collection process.

Walkers, joggers and runners on the trail were informed that a study was underway. Each visitor was briefed on the parameters of the study and what would be asked of them if they should choose to participate. The explanation was based off a script to keep consistency in the contact among the potential sample population (see Appendix

A). The trail user was not required, at this time, to reveal their intentions of participating at the conclusion of their walk, run or jog. From here, the potential participants were free to enjoy their recreation, free of further interruption by the researcher. Only as the trail users returned from their walk, run or jog, were they further approached for participation in the study. Each participant was asked to, individually, fill out the questionnaire upon their return from their activity on the KTSP.

The primary researcher was located on the southeastern most point of the trailhead entrance in Rocheport, MO, just adjacent to the last parking lot. This location provided a clear contact point for all potential participants continuing their walk from the north, southbound. Additionally, it was an ideal place to contact people just arriving and departing the park as it was adjacent to the southern-most parking lot.

Two distinct sample populations were identified in this study. Data was gathered measuring the level of enjoyment for participants walking on the trail without the signage. The first group (control group) experienced nothing out of the ordinary from a normal walk along this stretch of the trail. Upon returning from their walk, regardless of the distance travelled, participants were asked to fill out a questionnaire based on specific demographics and level of enjoyment in regards to their experience on the trail that day.

The second of the two groups provided the data from which to compare with the control group. This group (experimental group) had data gathered in the same way, four hours directly before or directly after the control group data has been collected. A rotating schedule was implemented to ensure the weather would remain as consistent as possible for both groups. For instance, if control group data is gathered from 9:00am to 12:30pm, the experimental group data collection will begin at 1:00pm and go to 4:30pm.

These efforts were made to manage as many of the uncontrollable variables associated with outdoor data collection as possible and kept the weather conditions similar during collection of both groups.

Fifty respondents with signs in place and fifty respondents without the signs was the goal. The target of a total of 100 respondents provided an opportunity for all demographic categories to be represented and to accurately depict comparable enjoyment levels from both the experimental and control groups. The times set each day to collect data remained consistent among all three days of collection. Each time of was chosen in an attempt to maximize the number of trail visitors bearing in mind both weather and daylight. The goal was met by the end of the third day, Sunday, October, 22, 2011. While the target sample was reached, the primary researcher considered further data collection. Due to unforeseeable, declining weather conditions and consultation with advisors about the overall goals of this study, the decision to conclude the data collection was finalized.

Data Collection

The data collection required the primary researcher to begin recruitment of the sample at the onset of the KTSP leading south out of Rocheport, MO. The primary researcher was located at the survey site to make every effort of keeping an unbiased and valid study intact.

Potential participants were initially approached at the trailhead leading south out of Rocheport, MO. Every person leaving on foot was approached regarding the study removing the potential for researcher biases. In other words, there will be no random selection of users due to the smaller population of potential sampling relative to bike

users on this particular trail. They were explained, based from a scripted document, the nature of the study but were only be privy to information that was necessary at that time. Full details of the research were not divulged until after the questionnaire had been submitted into an envelope containing that day's results. These results were not examined in any way until all data collection was complete.

The researcher also offered bottles of water to willing participants upon the completion of the survey. It was the goal of the researcher to offer an award in an attempt to increase the response rate of potential survey-takers. The response rate was measured by simply tallying those who were not willing to participate and adding that number to the total number of questionnaires submitted. That total number will be divided by the total number of questionnaires submitted and the response rate will be revealed. The goal of a 75% response rate was achieved.

The survey site was located just beyond the final parking lot on the southeast end of the trailhead area in Rocheport, MO (see Image 1). The primary researcher was both recruiting a sample for those beginning their activity and dispersing clipboards to those willing to share their experience concluding their activity. Numerous participants were able to take the questionnaire at once, provided there was no synergizing of questionnaire responses.

Image 1: Rocheport, Missouri Map of Katy Trail State Park (KTSP)



(County Boundary, 2007)

After receiving the study parameters from the researcher, willing participants, in the experimental group only, made their way along the trail retaining all, none or some of the signage content upon their return to the survey site. Upon arrival back to the survey site from which they began, each participant was given a clipboard, a pen and a bottle of water. In the experimental group, each was also asked to recall the poem as precisely as possible. On the back side of the surveys included in the experimental group, was a box for written recall. After the completion of the questionnaire, the participants handed the clipboard back to the researcher. Immediately following this exchange, the results were placed in an envelope without any analysis by the researcher.

While the participants were under the impression that the results of their recitation held weight in this study, in actual fact only the questionnaire data on enjoyment was

compared with participants using the trail without the signs in place. Essentially, the “recall” data was not made a part of the data analysis making the validity of this data collection process less vital. This element was included to “deceive” the participants into thinking the study is based on memory. With the knowledge that experiential enjoyment was being tested, it is believed that subjects may alter their own way of looking at their experience to coincide with what the researcher is studying. This would negatively affect the data and ultimately, not provide the potential variance in enjoyment that this study seeks. Also, the recall provided the “challenge” variable that is paramount to the study and the eventual analysis between the two groups.

It is important to keep in mind that these measures only occurred in the experimental group. The control group had knowledge that their experience is being measured strictly from an enjoyment factor. The differing beliefs in the motivation for the study between the two groups are a concern but, ultimately, it is believed to be the most beneficial for positive results.

Questions were only answered by the primary researcher upon the completion of the questionnaire and submission into the envelope. Additionally, questions by participants were not answered while others are reciting the poem or filling out the questionnaire due to a potential bias that could occur with untimely and influential information. Incidentally, timing issues never arose, as the flow of foot traffic on the trail remained sparse for most of the data collection period.

The data collection began on the second weekend of October 2011 on Sunday morning at 9 am. The control group was the first to have data collected. After four hours of data collection, the primary researcher began to install the six signs at their

predetermined locations. A 30-minute break in the data collection occurred to allow for the installation and any other personal needs that were necessary. Once the signs were put in place, the primary researcher began data collection again. For the next four hours the questionnaires were administered to the experimental group. This collection format was utilized in attempts to keep the weather as constant for both groups on the same day as possible.

Instrumentation

In order to gather data for analysis, participants were asked to fill out a questionnaire largely constructed by the primary researcher to fit the proposed hypotheses. Brevity in the completion of this questionnaire was important due to the fact that many participants were concluding their activity for the day. For this reason, the survey was sixteen questions found on one page, front and back, of a standard-sized sheet of paper (8 ½ x 11). These specifications were designed to help increase the response rate.

The first section of the questionnaire questioned participants on some general information about themselves, their experience and any prior visits to the KTSP. These questions included frequency of trail visitation, typical activity upon visitation and distance travelled. (ie. How many times did you visit the Katy Trail State Park in the past 30 days?) The sole purpose of this line of questioning was to attain data to determine results of each of the four hypotheses.

Following this section, the enjoyment scale of a previous study was utilized (Lin, Gregor & Ewing, 2008). While this study and the one conducted by Lin, Gregor & Ewing (2008) have contrasting samples, the enjoyment objective of each remains constant.

Concepts such as satisfaction, happiness, gratification, stimulation and invigoration were all included to attain the best understanding of the enjoyment levels at the end of their walk, run or jog. Ten enjoyment components comprised the second section of the instrument to best determine enjoyment levels in both the control and experimental group. Each question was based on a 7-point Likert-scale ranging from “1/Entirely disagree” to “7/Entirely agree”. The 7-point scale was chosen over its 5-point counterpart to increase the opportunity for variance among the answer options and with a hope to increase the data distribution.

Finally, two questions comprised a demographic portion to better identify the sample population from which the data is being drawn. Fill in the blank age questions determine the age range of participants and a “check box” question determined the distribution of gender in this study. The reader will likely notice the absence of questioning on ethnicity in this study. Based on past studies conducted on the KTSP, the ethnicity was overwhelmingly white/Caucasian. While other ethnicities were represented, there was not enough to extract useful datasets from these populations. In an attempt to keep this survey concise, this question was removed for space and likelihood of ineffectual data and will be considered a further limitation for generalizability.

The Signs

A section on the signs themselves is significant to include in this chapter because they comprise the independent variable. Numerous options of signage were reviewed and critiqued. The size, color, shape and content were all factors that required exploration in order to fulfill the needs of this study.

The six (6) signs were constructed out of 2"x10"x24" untreated, pine timber. For further outdoor study or longer term use, treated timber would be the recommendation. The signs were attached to an iron bar that was appropriate for hammering into the rocky ground surrounding the KTSP. Each sign was made as visible as possible while avoiding an aesthetically obtrusive addition to the trail. For that reason, the top of each sign was no more than 24" off the ground. Additionally, each sign was put three feet from the defined edge of the trail in order to maintain the "outdoor" environment for non-participants.

The signs have been constructed in a rectangular shape. Because of the want to keep the signs visible but not bothersome, the rectangular shape was chosen to minimize the space necessary to fit one line of poetry on one side of each piece of wood.

Field research was done on the color of the signs. Paint swatches were taken on-site to determine the most appropriate shade of green to use and the color of the signs were ultimately matched with the flora along the side of the trail. The aim was to blend the signs with the scenery adjacent to the trail in an unobtrusive nature. It is well-understood that numerous users of the trail that day, or any other day, will not want their experience contaminated with unexpected, obtrusive signage.

The lettering of the signage were engraved into the green paint revealing the natural color of the pine to show. These efforts were made, again, to maintain the natural feeling of the surrounding environment and have the signs be seen as more of an addition, as opposed to detraction, on the trail.

Finally, the content was chosen after an exhaustive search for the "right" poem. It was decided that in order to appropriately fit the content with the research site, a poem would be produced for the purpose of this study. Through research, it was found that the

average reading ability for American citizens equates to an 8th grade student (Kirsch et al., 2009). Therefore, the poem's content was written with this in mind.

All efforts were made to make the signage visible yet unobtrusive. Active participants must be able to see the sign if prompted by the researcher or pass them without notice if not. Therefore, the size, color, shape are just as important as the content which reads as follows (see *Image 2*):

Sign #1: The rivers, the cliffs, the trees and stones ("1 of 6" in the lower right corner)

Sign #2: Will be here long after my skin and bones ("2 of 6" in the lower right corner)

Sign #3: Gazing gently upon us, our minds a blur ("3 of 6" in the lower right corner)

Sign #4: They seek out what ails us and offer a cure ("4 of 6" in the lower right corner)

Sign #5: They serenely comfort, though in fragments of time ("5 of 6" in the lower right corner)

Sign #6: Reminding us everything will be just fine ("6 of 6" written in the lower right corner)

Image 2: Signage Content Layout



The numbering included in the lower right hand corner is used as a guide and motivational tool. This simply informs that participant, trail-user, that there is a distinct end to the message. This inclusion was important in order to maintain the participants' interest and enable them to understand what lies ahead along the trail. Also, the "MU" (University of Missouri) logo was included to create cohesiveness to the united sign system and create some validity to the study as a whole.

Treatment of Data

The most vital piece of information for this research is to determine the difference, if one exists, between the enjoyment responses of participants that walked the trail with signs and those that walked the trail absent of signage. As discussed in the "Instrumentation" section above, the ten enjoyment components were measured on the 7-point scale. 10 components of enjoyment have been included to determine an overall enjoyment value for statistical purposes.

For H_01 , the researcher attempted to determine if a significant difference was found between the experimental and control group. In order to find this, Independent Samples T-Test was executed between the two groups. First, a test needed to be run to determine the normality of the data distribution. A Shapiro-Wilk test was implemented to determine normality. This test was chosen over its counterpart, the Kolmogorov-Smirnov test, due to the sample being fifty or smaller. Because this study is based on measuring enjoyment, the researcher was predicting that this data set would fail to meet the assumptions of normality. Because of this, a non-parametric study was needed and the Mann-Whitney (U) type test was implemented to test for equally large values for two independent samples. This produced a conclusion for H_01 .

The second hypothesis looks at the frequency of KTSP visitation and how it relates, through possible place identity, with the enjoyment levels within the experimental group. The data was divided into two comparable groups. The first group “less frequent” visitors was designated by participants who have travelled to KTSP less than two times in the thirty days prior to the data collection date. The second group, “more frequent” visitors, was designated by participants who have travelled to KTSP two or more times in the thirty days prior to the data collection date. Again, normality tests were required. However, for this test the sample sizes are uneven. Therefore, for the “less frequent” visitors, a Kolmogorov-Smirnov test was used due to a larger than 50 sample size. Again, the results rejected the null hypothesis of a normal distribution. Therefore, the Mann-Whitney U test was again implemented. Once the data was compared between the two groups, results were analyzed for significance.

Age brackets and their association with enjoyment levels were analyzed to provide significance for H₀₃ for both the experimental group as well as the control group. The sample was broken down into three different groups. Lower aged (18-40 years of age), middle-aged (41-60 years of age) and senior-aged (61+ year of age) encompassed all visitors in a relatively even distribution of sample age. These data were retrieved from a fill-in-the-blank question requesting the age of the participant. It is important to note that each participant had to be at least 18 years of age to participate. With the presence of three groups, an ANOVA test was conducted . Again, the Shapiro-Wilk test for normality was put into place to test enjoyment levels. Once a not normal distribution was discovered, the Kruskal-Wallace test was utilized. This test is the non-parametric version of the ANOVA analysis that provides results for a skewed dataset.

For the final hypothesis, statistical analysis determined the significance of distance travelled in relation to group with signage (experimental) and the group without signage (control). On the instrument, there is an image of the 1.44 mile section of KTSP where data is being collected. Seven boxes were provided, with landmarks, for each visitor to check in relation to the distance they travelled on that visit. Each box is equal distance from the last representing approximately .40 km (.25 miles) between each of the signs. One final box representing “Travelled further from the bridge” is located in the upper right hand corner for those visitors that travelled beyond the data collection site. The normality of the study was again determined. An Independent Samples T-Test was again used with the Mann-Whitney U test utilized as the non-parametric test for skewed dataset distribution. Results from this test determined the significance of the distance travelled between the experimental and the control groups.

While these research questions were the focus of the statistical analysis, other areas of the data were investigated such as: age and gender demographics as well as descriptive statistics across the ten enjoyment components all contributed to the overall frame of the statistical results. Each question on the instrument does not pertain precisely to a research question and therefore required further analysis after the data collection is completed. All statistical procedures were executed and used to compute this data into useable conclusions and tables through the Social Packages for the Social Sciences (SPSS) version 17.0.

The researcher also utilized frequency distributions to further analyze data on the population within the sample. The demographic portion of the questionnaire was put through measures of central tendency to better define the characteristics of who

comprised the sample. Continued analysis, not included in formal hypothetical statements, was pursued by the primary researcher based on any data that may be applicable to this or future studies. Results from these data will be included in the following chapter.

Chapter IV: Results

Purpose

The purpose of this section is to present the results of the study based on enjoyment and distance travelled among various demographics. The sample was comprised of two groups: visitors with the contiguous signage in place at the KTSP (experimental) and those without the signage in place (control). The primary purpose of the study is to determine the difference in enjoyment levels and distance travelled across both groups. Additionally, demographics for enjoyment were also recorded to provide a clearer picture of the sample.

Response Rate

Due to the hands-on nature of the researcher at the survey site a goal of a 75% response rate was accomplished (N=100, P=75). Because every person on foot (walkers, joggers & runners) heading southbound on the KTSP was approached to participate, each trail user simply agreed or disagreed to be part of the study. Out of 120 trail visitors approached on the trail over the three days of data collection, 100 agreed to participate making a response rate of 83.33% (N=120, P=83.33).

However, there were six instances where walkers avoided contact by the researcher due to other participants filling out the questionnaire simultaneously. This did create an issue that is worth noting in the response rate discussion. While these trail visitors neither agreed nor disagreed to participate, their data was not collected and must be included as a refusal. Therefore, the sample population totaled 126 trail users during

data collection and a total of 100 participants agreed to provide data creating a response rate of 79.37% (N=126, P=79.37).

Included in the population of 26 to refuse participation was a family of nine (of age to participate) walking together as a group. All nine declined. It can be assumed that either all or none would have been willing to participate. While this is certainly recorded as a refusal to participate, without that group of nine the response rate exceeds 85%.

Further discrepancies can be found with walkers who were initially approached but did not return within the allotted data gathering time period. All efforts were made to complete recruitment with the goal to allow enough time for participants to return from their activity before the conclusion of that day's data collection. However, numerous walkers began their walk at KTSP to connect to the winery trailhead in the midst of the study site. Many of these walkers did not return within that day's allotted data collection time period and numerous spent several hours at this destination. While it is important to note this fact, because there was no refusal to participate and the initial approach was only to make potential participants aware of the study, these trail users were not accounted for in the response rate.

Demographic Description of Data

Of the 100 trail visitors surveyed, sixty-one (n=61) were female and thirty-nine were males (n=39). Sixteen were females between the ages of 18-40 (n=16, P=26.2) and twenty-six between the ages 41-60 (n=26, P=42.6). The remaining number of female visitors on the trail was above the age of 60 (n=19, P=31.1). Results were similar in the age brackets pertaining to male participants as well.

Like the females, the majority of trail users were over the age of forty (n=31, P=79.5). Only eight male trail users were between the ages of 18-40 (n= 8, P=20.5). The age bracket 41-60 years of age produced a near identical number of participants to the age of female participants. Fifteen male trail users in this age bracket participated in the study (n= 15, P=38.5). Finally, the highest percentage of males were over the age of 60 (n=16; P=41). Table 2 illustrates these findings below.

While the study was open to all trail users above the age of 18, 28-years-old was the youngest trail visitor to participate in the study, male or female. Additionally only five of the participants were under the age of 30 (n=5, P=5).

Table 1. Gender and Age Demographic Breakdown

	18-40 years		41-60 years		61+ years	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Male	8	28.5	15	38.5	16	41
Female	16	26.2	26	42.6	19	31.1

Enjoyment Scale

The assumption of an abnormal distribution, as suggested in Chapter III, was proven to be accurate. Based on the results, the distribution was negatively skewed. The mean of each of the ten enjoyment components reveals responses of either “5=Agree” or “6=Mostly Agree”. Table 3 shows evidence of the skewed nature of this dataset. Because of this, normality tests were necessary to determine the appropriate test for each of the posed hypotheses.

Table 2: Descriptive Statistics for Enjoyment Components over both Test Groups

		Engrossed	Concentrated	Worthwhile	Relaxed	Rewarding	Satisfied	Meaning	Focused	Absorbed	Happy
N	Valid	100	100	100	100	100	100	100	100	100	100
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		5.48	5.02	6.56	6.51	6.54	6.50	6.08	5.47	5.24	6.45
Median		5.50	5.00	7.00	7.00	7.00	7.00	6.00	6.00	5.00	7.00
Mode		5	5	7	7	7	7	7	6	6	7
Variance		1.242	1.434	.774	.778	.796	.838	1.206	1.322	1.639	.755

For each of the hypotheses, different normality tests were needed based on the sample size and the type of test conducted. This will be further explained as the hypotheses results are introduced.

The Shapiro-Wilk was the first test used to determine the normality significance. This test was used due to the presence of a sample size of fifty or less. In addition to this test, the Kolmogorov-Smirnov test, an equivalent test where the only difference is sample size, was utilized when the sample is over fifty. These tests measure the same content, normality distribution, and only differ by the population size within the sample being tested. This will be further approached in forthcoming hypotheses. Both of these are the non-parametric versions of t-tests that measure for normality of a dataset distribution.

For the first hypothesis, determining enjoyment levels of the experimental group and the control group, the null hypothesis of a normal distribution was rejected using the Shapiro-Wilk test of normality. A non-parametric version of the independent samples t-test was needed to proceed with the analysis, due to the skewed nature of the dataset. The Mann-Whitney U was implemented in this instance and produced data that displayed zero of the ten enjoyment components provided any significant difference between the two

groups, experimental and control. The Likert-scale data were ranked and reported. This two-tailed test of significance, or sums of rank test, revealed entirely homogenous results across both groups. As Table 4 will show below, none of the significance levels provided by this test reveal an adequate level of significance to further examine ($p < .05$). Because of this, the researcher is able to accept the null hypothesis that there will be no significant difference between the levels of enjoyment between the control and experimental groups. The significance levels found at the bottom of the table exceeds the figures necessary to reject the null hypothesis ($p < .05$).

Table 3: Significance Levels of Enjoyment across both Test Groups

Non-parametric Mann-Whitney Test Results										
	Engrossed	Concentrated	Worth-while	Relaxed	Rewarding	Satisfied	Meaning	Focused	Absorbed	Happy
Mann-Whitney U	1213.0	1160.0	1233.5	1187.0	1229.5	1232.5	1207.5	1158.5	1082.5	1212.
Significance (2-tailed)	.791	.521	.885	.601	.861	.882	.754	.512	.235	.759

Levels of $p < .05$ are necessary to deem significant

Frequency of Visitation

The second hypothesis was based on the frequency of previous visits to KTSP by participants in this study. It was hypothesized that there would be no significant difference between the levels of enjoyment between those that travel more frequently to the trail and those that frequent the trail less. These results were recorded for the experimental group only. “Less frequent” is defined as those who have visited the trail less than two times in the thirty days prior to the data collection period. “More frequent”

is defined as those that have visited the trail two or more times in the thirty days prior to data collection period. These guidelines were produced to designate between weekend or day-trippers and locals who frequent the trail.

Again, normality tests were conducted. However, due to differing sample sizes for this analysis, two different tests were implemented to determine the normality of distribution. The Kolmogorov-Smirnov test was conducted to test for the normality of the distribution for the “less frequent” group due to the group being larger than 50 ($n=66$). However, the Shapiro-Wilk test was again utilized for the “more frequent” group due to the sample size equating to less than 50 ($n=34$). In each case, the significance levels were cause to reject the null hypothesis of normal distributions. For this reason, the Mann-Whitney U test was again utilized to analyze the data for this hypothesis.

There was a significant difference between two of the ten enjoyment components across the two variables. “Engrossed in the trail” ($U(98)=848.00$, $p=.038$) and “It meant a lot to be on the trail” ($U(98)=743.00$, $p=.003$) in reference to visitors’ activity on the trail were significantly different between the two groups. Also, it should be noted that two more enjoyment components, “Rewarding” ($U(98)=921.00$, $p=.070$) and “Satisfied” ($U(98)=937.50$, $p=.100$), approached but did not achieve the levels deemed appropriate to display significance ($p<.05$). In each of these cases, trail users who had visited the KTSP more frequently found increased levels of enjoyment in these components. Across the other six enjoyment components, no significant difference was found with largely homogenous data when comparing the means. Therefore, there was partial support of the hypothesis.

There is an obvious omission of statistics for the control and experimental group across the different levels of frequency. The reason for this is that a test of this kind would have required a 2-factor ANOVA. Because the data did not conform to a normal distribution, a non-parametric test would be required for this. However, a non-parametric test for a 2-factor ANOVA does not exist. Therefore, these statistics are not available.

Table 4: Significance of Enjoyment based on Frequency of Trail Visitation

	Engrossed	Concentrated	Worthwhile	Relaxed	Rewarding	Satisfied	Meaning Focused	Absorbed	Happy	
Mann-Whitney U	848.0	1004.0	1038.5	1093.0	921.0	937.5	743.0	1009.5	1018.0	898.5
Significance (p) (2-tailed)	.038	.375	.441	.799	.070	.100	.003	.395	.437	.056

Levels of $p < .05$ are necessary to deem significant

Age

Three different age brackets were used to determine the sample age groupings for analysis. Lower age (18-40 years of age), middle age (41-60 years of age) and senior age (61+ years of age) represent these three brackets. While the “lower age” bracket looks to represent a higher number of eligible candidates, the frequency breakdown of actual participants show that this group is actually the least populated of the three brackets (n=21). “Middle age” (n=41) and “senior age” (n=33) complete the entire sample population. The Shapiro-Wilk test of normality showed a distribution that was not normal and again the null hypothesis of normality was rejected. With the addition of a third grouping for this analysis, the non-parametric counterpart to ANOVA, the Kruskal-

Wallace test, was utilized to attain the hypothesis result. The results were largely homogenous across the ten enjoyment components. However, “Engrossed in the trail” (H=4.924, p= .085) and “It meant a lot to be on the trail” (H=4.766, p=.092) showed moderate significance in the “senior age” bracket according to the non-parametric, Chi-Square significance test. Due to the findings not meeting the criteria for significance (p<.05), as seen below in Table 6, further investigation would be required to substantiate any of these findings.

Similarly to H₀₂, no tests were run to analyze the control and experimental groups on the three age groups. A 2-factor ANOVA test is needed to perform this analysis. However, like before, the non-parametric version of this test does not exist. The data set does not conform to the dataset making a need for a non-parametric test necessary. The test was run for the experimental group only.

Table 6: Kruskal-Wallace Test of Significance Levels of Enjoyment based on Ages

	Engrossed	Concentrated	Worth-while	Relaxed	Rewarding	Satisfied	Meaning	Focused	Absorbed	Happy
Chi-Square	4.924	1.371	.656	1.730	.706	.497	4.766	1.872	4.057	1.721
Significance (p)	.085	.504	.721	.421	.703	.780	.092	.392	.132	.423

Levels of p<.05 are necessary to deem significant

Distance Travelled

The final hypothesis shifts the focus of the study from enjoyment to the distance travelled based on the treatment variable. Each sign placed on the side of the trail, six in total, represented an approximate distance of .25 miles from each other. Participants were

asked to designate how far they had travelled by checking a box on a map provided as part of the instrument. In order to determine the significance level of the null hypothesis, normality tests were again implemented. To explore normality, the Shapiro-Wilk test of normality was used. It was determined that the test displayed a data distribution that was not normal. For that reason, the non-parametric version of the Independent Samples T-Test was again used.

The Mann-Whitney U test determined no significance between the two groups. There were a total of five missing datasets for this question however the control group (U(98)=50.05, n=48) actually travelled further than the experimental group (U(98)=45.90, n=47). However, there was no significance to these results. Upon closer analysis of Table 6 below, the data appeared largely homogenous. See Table 6. From these results, the null hypothesis was accepted, finding no significant difference in distance travelled between the groups with the signage and those without (p=.455).

Table 7: Distance Travel based on both Test Groups

Mann-Whitney Test					
	Experimental/Control	N	Mean	Rank	Significance
Distance_Traveled	Control	48	50.05		
	Experimental	47	45.90		
	Total	95			.455

Levels of $p < .05$ are necessary to deem significant

Summary of Findings

In analyzing the data set forth to gather information on the enjoyment levels of the experimental (with the signage in place) and the control (without the signage in place)

groups, no meaningful significance was found. The data show not only very little statistical significance but datasets remain remarkably homogenous between the experimental and control groups. The results were negatively skewed towards high scores on the Likert-type scale. There was one sample who chose “1 Entirely Disagree” for every question in the enjoyment scale. It is unclear whether this was intentional or not. Aside from this one sample, six of the ten questions had zero responses of 1, 2 or 3 on the Likert-scale (Entirely Disagree, Mostly Disagree or Disagree, respectively). In fact, five of the ten enjoyment components questioned were accompanied with a score of 5, 6 or 7 (Agree, Mostly Agree or Entirely Agree, respectively) over 98% of the time. This shows evidence of levels of enjoyment that were extreme regardless of the condition that was implemented for this study. Furthermore, six of the ten enjoyment components found the mode of the responses to be “7” or “Entirely Agree” based on the results of both groups. Between the two groups, enjoyment levels were extremely high and no significant difference was found based on the condition of the signage present on the side of the trail.

Frequency of trail use was also used as a variable to measure enjoyment. In this case, “engrossed on the trail” and “it meant a lot to be on the trail” each displayed levels of significance between users who had visited KTSP less frequently (0-1 visits in the past 30 days) compared to those who had visited more frequently (2-30 visits). Additionally, while the results showed very little statistical significance across all ten components, the mean of average for those who had visited more frequently actually did record higher levels of enjoyment in all ten enjoyment components. Despite this, only the two components listed above show actual statistical significance.

Significant findings among the three age brackets were also scarce. Lower age bracket (18-40 years of age), middle age bracket (41-60) and upper age bracket (61+) were designated after the data had been collected to determine evenly grouped numbers of the sample population. Interestingly, “engrossed on the trail” and “it meant a lot to be on the trail” each displayed minor levels of significance. Minor levels of significance would require further research to substantiate any findings in this study but did not achieve the desired p-value for significance ($p < .05$). However, the upper age bracket found greater enjoyment in these two components than the other two groups. Aside from these two levels of minor significance, the results remained largely homogenous. In fact, each of the age brackets, depending on the enjoyment component in question, represented both the greatest and least levels of enjoyment leaving greater evidence to little significance discovered. In all cases, including “engrossed” and “meaning”, the difference in results was not significant enough to draw any applicable conclusions. The fact that the same, and only, two components, “engrossed” and “meaning”, showed any level of significance but with different dependent variables may be cause to look into the instrumentation for lack of validity or reliability.

The last hypothesis tested the significance of the distance travelled between both the experimental and control groups. The data concluded no significant difference and, though not statistically significant, actually revealed the control group travelling farther on the trail than the experimental group.

Table 8: Hypotheses Summation

	Accept	Reject
H₀1-Enjoyment across both Groups	x	
H₀2-Enjoyment based Frequency		x
H₀3-Enjoyment based on Age	x	
H₀4-Distance Travelled	x	

Chapter V: Discussion

Summary of Procedures

The goal of this study was to implement a challenge by including a new signage system along the side of KTSP to be viewed by trail visitors and, in turn, measure changes in enjoyment levels. The sample population was comprised of all visitors on foot including walkers, joggers and runners heading southbound on the trail out of Rocheport, MO. The challenge, in the form of poem recitation on signage placed along the side of the trail, was in place to determine differences in enjoyment levels with the signage both absent and present. Each sign was placed approximately ¼ mile apart starting ¼ mile from the survey site. The signage contained a six line poem with the first sign, listing the first line of the poem, leading to the second. The I-70 bridge located 1.44 miles from the survey site marked the end of the study and the location of the sixth and final sign. All on-foot visitors returning from their trip north were recruited to complete the survey. However, the experimental group (with the signage in place) was asked to recite/recall as much of the poem as they could, for as far as they travelled. The challenge of the recitation was the treatment variable between the two groups. The results based on enjoyment were then compared with trail users who walked without the signs present to determine a difference in levels of enjoyment.

The instrumentation was taken directly from an alternate study done on enjoyment levels (Lin, Gregor & Ewing, 2008). Upon the conclusion of each on-foot visitors' activity, participation in the study was requested. The questionnaire was identical for both the control group (without the signage system in place) and the

experimental group (without the signage in place) barring one detail. Each member of the experimental group had a box on the back of their questionnaires to provide any content of the signage they could recall during their recreational activity. This provided the challenge variable to set apart the two groups and provide results for the primary hypothesis.

Fifty participants for each group completed the questionnaire for a grand total of one hundred participants. The data was coded and logged into Microsoft Excel before being transferred to IBM SPSS Version 19 for analysis.

Conclusions

Based on the findings, it can be concluded that this particular challenge located on this trail did not significantly change the enjoyment levels of trail visitors. Results showed that no significant difference could be found within any of the primary topics. Therefore no conclusions can be made about further site visitation or increased levels of physical activity as discussed in Chapter I based on past studies (Dishman et al., 2005; Sorenson, 2005; Hagberg, Lindahl, Nyberg, & Hellenius, 2008). However, four additional conclusions can be made based on the study and the results. The study of enjoyment, in and of itself, was a difficult undertaking that likely caused the homogenous results. Further insight on the study location will also be discussed in the coming sections.

A common theme in the field of parks, recreation and tourism is that the word “enjoyment” is a term that is often related to leisure-time activities (Sorenson, 2005; Hagberg et al., 2008; Merrill et al., 2004). Due to this fact, this study struggled to create a treatment that would cause significant effects in the analyzed results. It is likely that each

of the participants in this study sought enjoyment when entering KTSP to perform their leisure time activity. As stated above, individuals choose activities based on how they want to spend free time. Therefore, whether the signage was in place or not for each group, each participant partook in their activity of choice seeking enjoyment.

Additionally, as this study shows, a simple difference, or treatment, in a consistent environment will not positively or negatively affect the enjoyment levels. In other words, if one is seeking enjoyment in a familiar activity, they will probably find it. Therefore, this study does not support others based on enjoyment and increased site visitation or activity repetition (Dishman et al., 2005; Sorenson, 2005; Hagberg et al., 2008; Merrill et al., 2004).

However, this study did provide an abstract way of judging enjoyment. While the signage did not have positive effects on the sample tested, they did not have a negative effect either. Some may have viewed the signs as a deterrent or distraction to enjoyment while others may have found them to be a welcome addition, but overall they did not alter the outcome of enjoyment on the trail. This study did not deal with the negative effects of the signage. However, due to the results, it is unlikely that the signage had any affect: positive or negative. One can conclude that, despite the attempted treatment to alter enjoyment on that particular section of the trail during the weekends of study, overall high enjoyment levels were recorded regardless. However, the study site on the designated section of trail needs to be taken into account when concluding the findings of this study.

Initially, the goal of this study was to find a well-used portion of the trail from which to attract the greatest number of potential participants during the data collection

period. When the study began, research was done on frequently used sections of the trail that had a distinct starting point. Two local Rocheport residents recommended the section of trail heading south towards the I-70 bridge, due to its scenic nature and proximity to the parking lot (D. Vaught, personal communication, September 8, 2011; B. Dufur, personal communication; September 19, 2011). However, trail users beginning their recreation on the trail also have the option of travelling north which bypassed the study site and diminished the sample population. As the study unfolded, this proved to be true. However, when measuring enjoyment, determining one of the most “scenic” or “popular” sections of the trail, according to local opinion, from which to draw levels of enjoyment had its drawbacks.

This 1.44 mile section of the trail heading out of Rocheport, MO was a destination of many trail users which provided a solid population to attain a sound sample. However, each trail user had deliberately chosen to pursue physical activity at that particular spot for a reason. This section of the trail has a clear view of the Missouri River through the duration of the walk to the I-70 bridge in addition to some pleasant cliffs on one side of the trail. This provides an excellent corridor of visual attractiveness and multiple opportunities for one to find enjoyment based on most personal preferences. However, it does not, necessarily, create a useful lens to view a change in enjoyment levels within the parameters of a treatment (signage).

Due to these factors, enjoyment levels remained unchanged despite the treatment provided. Furthermore, it can not be expected that future visitation will increase with the inclusion of poetic signage, based on this study. While further investigation is necessary to determine the effectiveness of the signage, the challenge provided in this study did not

affect enjoyment. These flow-based determinants did not create an optimal experience as found in previous studies and therefore would not necessarily lead to greater visitation and in turn increased levels of physical activity (Csikszentmihalyi, 1999; Csikszentmihalyi, 1997; Jackson & Csikszentmihalyi, 1999).

Discussion and Implications

While this study netted few results of any great significance, a few implications can be contributed to the existing knowledge base. The primary implication, based on the results of this study, reflects back to park management practices and closely relates to the initial research question. Each subsequent implication based on the findings, contribute more to research methods and effectively lead into the final section regarding future studies.

Ultimately, the results showed that by adding an additional challenge to this pre-existing stretch of trail, enjoyment levels will not be affected. This, in most part, is due to the fact that enjoyment levels were already found to be extremely high on this section of the trail. In other words, whether the treatment was present or absent, trail users experienced high levels of enjoyment on the trail. This information can be useful to local park administrators.

These results tell administration that nothing needs altering in regards to this section of KTSP. Park officials are able to understand that enjoyment levels, among trail users on foot, of this mile and half stretch of trail remain high regardless of added signage. Therefore, additional efforts are not needed to improve enjoyment levels despite what past studies have shown (Bell, 2008; Gross, Zimmerman & Buchholz, 2006;

Kaplan, Kaplan & Ryan, 1998; Keirle, 2002). As these studies note, fresh and enticing features can increase enjoyment. However, for this section of the KTSP leading south out of Rocheport, MO, improvements are not needed to increase enjoyment of the trail users and simple upkeep maintenance will continue to provide a popular and enjoyable place to visit.

At the onset of the study, the goal was to create a much more clear view of enjoyment and potentially add a feature to parks that could further promote visitation and ultimately daily activity among community members. With little significant results netted, more benefits of this study appear in notations for research methods for further behavioral studies. Two of the three research implications relate to sampling while the final can contribute to another realm of behavioral research, place attachment. Each of these is an appropriate precursor to the final section based on recommendations for future studies.

First, the location of the study should be analyzed. As mentioned previously, while this 1.44 mile stretch of KTSP provided a high volume of activity, this location was chosen by many for particular reasons. This section, in Rocheport, MO, provided amenities such as food, restrooms and convenient parking to trail users. Additionally, scenic vistas of rocky cliffs and the Missouri River were adjacent to the trail, as well. These factors coupled with the leaf-changing, autumn month of October to collect data, the trail was heavily used by not only cyclists but pedestrians, as well.

In one sense, it provided an ideal location to gather a sample population due to the high volume. While cyclists vastly outnumbered trail users on foot, there was still ample opportunity for the researcher to achieve the sample goal of 100. However, with such

ideal conditions for trail use, including perfect weather all three days of data collection, pre-existing levels of enjoyment existed. Due to the fact that enjoyment was assumed by all trail users, the existence of an unobtrusive treatment, such as poetic signage, made no difference to the level of enjoyment found among participants on those three days.

It is suggested for future behavioral studies on enjoyment, that researchers be aware that that a high volume of a sample population may be an indicator for pre-existing levels of enjoyment. A location with less stimulation would have provided a clearer indicator of the effects of the treatment on the sample population.

A second implication also relates to sampling issues within this study. This research was exploratory in nature. It was designed to unearth results that could lead to a refined study of larger scale; most importantly, by utilizing a larger sample. Due to the small sample size, statistical power was not adequate to formulate any certain conclusions. Future researchers will note that three times the number of participants (n=300) will be needed to provide any significance useful to this field for academics as well as practitioners in a study of this nature.

Finally, the idea that contributions to the field of study on place attachment stems from the frequency of visits and the overall enjoyment levels. Those that visited the KTSP on two or more occasions in the previous 30 days provided higher levels of enjoyment in all ten components of the enjoyment scale. One component in particular was significant; “it meant something to be on the trail”. Because the participants in the study who use the trail “more frequently” found meaning on the trail, this setting could be an ideal location for data-gathering in the place attachment construct for future research. Place attachment can be defined as the value of a setting in specificity, functionality and

satisfaction as well as the “goodness” for which to perform desired activities (Williams, Patterson, Roggenbuck & Watson, 1992). This section of the KTSP is heavily used by locals, as well as visitors, and would provide an excellent sample from which to draw data.

Due to the frequent nature of the visitors among those that visited “more frequently”, near proximity of residence to the trail could be assumed. Taken directly from previous studies, frequency can be a key contributor to place identity, a construct of place attachment (Bricker and Kerstetter, 2000; Moore and Graefe, 1994; Williams et. al, 1992). While this study did not focus on place attachment, some of these concepts align with place attachment, or place identity, research. Further investigation into place attachment at KTSP, along with the sample population’s proximity to the trail, could yield some interesting results to add to place attachment, or sense of place, literature.

Recommendations for Further Study

To increase the likelihood of seeing an impact from the signage challenge, a few elements should be closely examined and altered. Improvement of the data collection process could have produced more meaningful results. First off, the signs were too far apart. While discussions with Rocheport locals defined the I-70 bridge as a likely “turnaround” point, most of the sample were first time visitors and did not have lengthy amounts of time to walk a return-trip of almost three miles. For future studies, the signage would be spaced much closer to provide more of the trail visitors an opportunity to view greater proportions of the signage content-ideally the entirety. However, the sample provided some difficulties that were also worth review.

The sample was too small and did not provide enough power in terms of statistical analysis, to net any significant findings. After statistical trial and error, it was found that the sample size needed to be three times what it was for this study. This would have lengthened the study period to allow for more days of data collection and more potential weather changes that could have provided greater variance in enjoyment levels. The sample was not only too small but the days of data collection provided almost identical weather patterns for each of the days of collection, netting very similar results each day. Each day was clear and sunny with a slight breeze of 8-10 mph and a temperature between 60-65 degrees Fahrenheit. While the weather and sample likely played roles in the homogenous results across all conditions, the instrument itself should be analyzed, as well.

Throughout data collection and the statistical analysis process, numerous changes to the instrument could have aided in a more beneficial study for practical purposes. While the main scale was borrowed directly from an alternate study measuring enjoyment (Lin, Gregor & Ewing, 2008), the researcher provided a test through cohorts at the University of Missouri but did not pilot the test on the actual trail user population. Further study will include this measure to ensure reliability and validity.

While the scale did provide some analysis issues, some omissions to the instrument became decidedly evident, as well. A line of questioning regarding whom was in the traveling party could have been useful data. Three visitors with younger children or baby-strollers, mentioned their activity would have lasted longer with the absence of youth in their travelling party. Futhermore, a past study has shown that leisure time can be less satisfying with children present among spouses (Garcia, Molina & Navarro,

2007). Similar sentiments were shared with pets among trail users on the days of data collection. On two different occasions visitors mentioned that they didn't want to take their small dog on too long of an extended walk and too far from a water source. In some instances, it is believed the distance travelled could have been related to the physical fitness of the sample population themselves. An additional question could have been added as to the amount of physical activity typically exerted per week or month. Each of these variables could have been measured in relation to distance travelled. These relate directly with the first suggestion in this section to shorten the distance between the signage. This study provides an excellent platform to determine the distance most frequently travelled on the weekends by trail users on foot and the signage could be placed accordingly.

Ultimately, it is believed that these alterations to similar studies in the future could provide more applicable data. However, it is believed that the study of enjoyment, while visitors are mid-recreation, is a difficult measure to attain. Most visitors are enjoying their experience due to the recreation and surroundings alone. Therefore, it is extremely difficult to measure differences in enjoyment levels when the sample is likely already fully satisfied with their experience. The task becomes even more difficult when these attempts are made at the same, desired location with only a slight change in variables. The elements of this study could have been altered and should be considered for future studies measuring enjoyment based on an increase in challenge however the difficulties may have been more fundamental in nature.

In staying with the enjoyment paradigm, other ways of gathering this data could have provided more applicable data. As mentioned above, this study took place in one

area of KTSP. It was referred to the researcher due to the scenic properties that it holds. However, enjoyment could be at its highest where the scenery is at its best. Therefore, future studies may include the signage where there is little else to attract the attention of the user. For instance, if this signage system were installed as an attempt to break the monotony of a trail through ongoing grasslands or forest where the scenery remains constant, the results may differ.

Perhaps a better way to approach a study similar to this one would be to look at the signage as more of a motivational factor similar to other studies involving signage (Bungum, Meachem and Truax, 2007; Ford & Torok, 2008; Grimstvedt et al., 2010). These studies show that the people do read signs and can be motivated by their message. While not issued in the statistical findings, 4% (n=2) of those trail users with the signage in place walked farther than normal. No members of the control group walked farther than normal. While this is entirely too small a sample size to glean any relevant conclusions, future studies could focus more on the motivation behind completing the contiguous message on adjacent signage. As discussed previously, with the signage closer together one could hypothesize that more trail users will be motivated to walk farther than normal to complete a message system that has been put in place, especially if the next sign in the sequence was visible. This could increase the amount of physical activity exerted by an individual per visit to the park and could have significant implications for park management and physical activity research.

Finally, while an empirical study of enjoyment did provide some difficulty, a lot of data could have been recorded qualitatively to provide further insight. The study did not include any qualitative data but some was given by trail users, nonetheless.

Statements such as: “I loved the signs”, “I enjoyed your signs” or “How long will the signs be up?” leave evidence that some impact was made. By and large the sample response to the signs were positive, however the instrument did not provide a way to properly capture that sentiment. Future studies may look into a qualitative approach to analyzing the effects of contiguous signage on a trail.

For future studies, research should understand the difficulties with measuring enjoyment, particularly in areas where enjoyment is frequently found. Other studies may include a closer look at how a signage system, or another challenge-based element, may look at the motivation of the trail users. Alterations to the study location, the sample size and the instrument coupled with a refocused set of research questions could provide significant results relatable across numerous disciplines.

APPENDIX

A.

Sample Script of Recruitment

Enjoyment of Trails: A Flow-Based Study of Contiguous Signage Recall

Greeting.

My name is Alex Martin and I am a graduate student at the University of Missouri in the Parks, Recreation and Tourism Department gathering data on the enjoyment of the trail by pedestrian visitors for my thesis project.

EXPERIMENTAL GROUP:

“There are six signs located approximately ¼ mile apart for 1.44 miles, or the I-70 bridge. If you should choose to participate, I would simply ask you to retain and recall as much of the signage content as you are able. Go as far as you like. When you return, I’ll have you recite as much as you can remember and fill out a very brief questionnaire, that will take you less than 5 minutes to complete. You’re welcome to take your walk, run or jog to consider your participation then decide when you return”

“Free bottles of water will be given to all those willing to participate in my study”

“Thank you.”

CONTROL GROUP:

“I have a brief questionnaire that will take less than 5 minutes of your time to complete upon your return. You’re welcome to take your walk, run or jog and consider your participation then decide when you return.”

“Free bottles of water will be given to all those willing to participate in my study”

“Thank you”

B.

Katy Trail State Park Survey

University of Missouri--Department of Parks, Recreation and Tourism

First, a few questions about past and present Katy Trail State Park visits:

1. How many times did you visit the Katy Trail State Park in the past 30 days?

_____ visits to this trail in the past 30 days

2. How did the distance traveled today at Katy Trail State Park compare to a typical visit? (Please select **one** option)

More distance than typical About the distance as typical Less distance than typical
This is my first visit

3. Which of the boxes in the image below best represent your destination before returning to the survey site?

(Please check **one** box)



4. What is your typical activity while visiting the Katy Trail State Park?

Walking Jogging Running Bicycling Other (Please explain: _____)

Next, please describe your experience on the trail today:

5. Please indicate to what extent you “Agree” or “Disagree” with each of the following statements
(Please circle **one** option for each):

	Entirely Disagree	Mostly Disagree	Disagree	Neither	Agree	Mostly Agree	Entirely Agree
a. I was deeply engrossed on the trail:	1	2	3	4	5	6	7
b. I concentrated fully on the trail:	1	2	3	4	5	6	7
c. It was worthwhile to be on the trail:	1	2	3	4	5	6	7
d. I felt relaxed on the trail:	1	2	3	4	5	6	7
e. It was rewarding to be on the trail:	1	2	3	4	5	6	7
f. I felt satisfied on the trail:	1	2	3	4	5	6	7
g. It meant a lot to me to be on the trail:	1	2	3	4	5	6	7
h. My attention was focused on the trail:	1	2	3	4	5	6	7
i. I was absorbed intently on the trail:	1	2	3	4	5	6	7
j. I felt happy on the trail:	1	2	3	4	5	6	7

Finally, please provide some information about yourself:

6. Age: _____ years old

7. Gender: (Please check **one** option) Male Female

You’re all finished! Thank you for participating in this study. Your responses will be put to good use.

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