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Letter from the Editors:

Welcome to the *Illuminare*!

We are pleased to introduce the 2016-2017 volume of the *Illuminare: A Student Journal in Recreation, Parks, and Tourism Studies*. As the result of our continued partnership with IU ScholarWorks, all involved feel this has been another successful venture. In the past seven years, the development of an online, open access journal has enhanced the submission, review, and editing process allowing for a more efficient publication process and improved communication system. Excluding this volume, 35 articles and research briefs have been published online since 2010, and have been viewed over 1,000 times by individuals around the world. The *Illuminare* continues to be internationally represented by way of reviewers and contributing authors, with participation from countries including the U.S., England, Canada, Australia, the Netherlands, Ireland, Iran, and Italy. The continued expansion of *Illuminare*’s reach around the world is attributed to the hard work and dedication of the previous editors, Susan Barnett and Allison Fletcher.

This year, we had a significant number of quality submissions. The Reviewers and Topic Editors worked hard to provide valuable feedback to all students, regardless of whether we were able to publish their work or not. We are truly grateful for this year’s editorial staffs dedication to quality.

The *Illuminare* Editorial Board is also thankful for the continued support of our Department Chair, Dr. Lynn Jamieson, and the faculty of the Department of Recreation, Park, and Tourism Studies in the School of Public Health-Bloomington at Indiana University. We look forward to working with incoming Department Chair, Dr. Rasul A. Mowatt, for the 2017-18 edition. Our hope is to see more students from around the world engage in this most valuable learning experience in future issues.

The *Illuminare* Editorial Board

Allison Fletcher, Editor  
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Originally established in 1992, the *Illuminare* is a refereed journal within the parks, recreation, tourism, and leisure fields, created and managed by students of the Indiana University’s Department of Recreation, Park, and Tourism Studies. *Illuminare* was the result of a collective vision of the students and founding advisor Dr. Ruth Russell, who saw a need to provide a platform for student publications in the field of leisure services in order to gain a sense of professionalism, share ideas, and promote student work.

The journal’s name, *Illuminare*, is derived from the Latin llūmin and means to light the way, illustrate, or inform. Aptly, it corresponds with the overall purpose of the journal:

*The Illuminare strives to light the way by reviewing, encouraging, and assisting students in efforts to publish and participate in the publishing process, and to inform by distributing and sharing student research in the field of parks, recreation, tourism, or leisure studies.*

The journal had nearly a decade of success as a hard-copy publication and during the 2010-2011 academic year transitioned into an online, open access student journal. The journal continues to be a peer-reviewed and publishes research in five core areas of leisure studies: Recreational Sport Administration, Park and Recreation Management, Outdoor Recreation, Therapeutic Recreation, and Tourism Management. Further information can be found at the journal’s website, http://scholarworks.iu.edu/journals/index.php/illuminare/inde.

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Social Learning Theory as a Framework for Recreational Therapy Intervention in Children with Neurodevelopmental Disorders

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Online Publication Date: June 13, 2017

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Social Learning Theory as a Framework for Recreational Therapy Intervention in Children with Neurodevelopmental Disorders

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Abstract

People with neurodevelopmental disorders demonstrate a higher incidence of obesity, emotional and mental health issues, and behavioral problems than the typically developing (TD) population. Based on the importance of early intervention for children with disabilities, research has been done regarding learning and development in children with neurodevelopmental disorders. However, limited research has been done tying a theory-based learning approach to recreational therapy (RT) intervention in the population. RT is a field that is inherently social and experiential, depending on interaction and activity to achieve desired outcomes. The Social Learning Theory (SLT) is a framework that focuses on learning from a social and experiential perspective, and is therefore uniquely compatible with RT methods. This paper will provide a starting point for a theory-based learning approach to RT by discussing the potential utility of SLT in RT for children with neurodevelopmental disorders. Suggestions for future research are discussed.

Keywords: recreation; recreational therapy; social learning; Social Learning Theory; modeling; imitation; neurodevelopmental disorder; Down syndrome; autism spectrum disorder
More than five million people in the U.S. have been diagnosed with a neurodevelopmental disorder, according to the 2010 U.S. Census (2012). Neurodevelopmental disorders are impairments of brain function, typically manifesting during the early developmental period, which produce mild to profound personal, social, cognitive, and occupational impairments (American Psychiatric Association, 2013). Along with these symptomatic characteristics, this population demonstrates a higher incidence of obesity, emotional and mental health issues, and behavioral problems than the typically developing (TD) population, where typical development means achieving developmental milestones within an average range when compared to same-age peers. (Dandashi et al., 2014; Foley et al., 2015; Sappok et al., 2013; Solomon & O’Brien, 2016).

The importance of early intervention for children with various disabilities has been well documented (Almsbhieen, 2016; Goode, Diefendorf, & Colgan, 2011; Guralnick, 1997). Based on the importance of early intervention, theoretical and empirical research has been done regarding learning and development in children with neurodevelopmental disorders (Alzyoudi, Sartawi, & Almuhiri, 2015; Bauer & Jones, 2015; Biederman, Stepaniuk, Davey, Raven, & Ahn, 1999; Bushwick, 2001; Cebula, Moore, & Wishart, 2010; Clore, 2006; Foti et al., 2014; Hahn, Fidler, Hepburn, & Rogers, 2013; Hudson, Nijboer, & Jellema, 2012; Jing & Fang, 2013; Parish-Morris, Hennon, Hirsh-Pasek, Golinkoff, & Tager-Flusberg, 2007). However, only limited research has been done tying these learning techniques to recreational therapy (RT) outcomes of independence, health, and wellness in the population (“What is RT/TR?” 2015; Wise, 2002). Because RT implementation is founded in leisure education and RT outcomes are achieved through learned behavioral changes, a learning-centered RT framework may prove useful – especially in a population where learning is often a perceived weakness in comparison to the TD population (Stumbo & Peterson, 1998). RT is social and experiential, depending on interaction and activity to achieve desired outcomes (“Definitions of recreational therapy”, n.d.). The Social Learning Theory (SLT) focuses on learning from a social and experiential perspective, and is therefore uniquely compatible with RT methods (Bandura, 1971). This paper will provide a starting point for a theory-based learning approach to RT by discussing the potential utility of SLT in RT contexts. The paper uses current literature on social learning and SLT in children with neurodevelopmental disorders, specifically using children with Down Syndrome (DS) and children with Autism Spectrum Disorder (ASD) as symptomatically different examples of the socio-emotional and functional range of neurodevelopmental disorders. The paper will conclude with suggestions for future research, to address potential strengths and weaknesses in the application of the SLT framework and to incorporate the theory into the evidence-based practice of RT.

History of SLT

Introduced by Bandura in 1971, SLT is a cognitive and behavioral theory that explains human behavior through the interaction of personal (cognitive), environmental, and behavioral factors in a social setting. Bandura later updated his theory to incorporate an additional focus on the cognitive aspects of behavior and renamed the theory “social cognitive theory,” but for this paper’s focus on social learning, SLT will be used (Bandura, 1986). Contrasting behavioral change theories (such as operant conditioning) that focus on rewards and reinforcement, SLT describes the interaction and influence of personal, environmental, and behavioral factors on one another in a process called reciprocal determinism (Bandura, 1986; Rholetter, 2013). According to SLT, a person’s behavior is influenced by his or her environment as well as inherent personal traits, that person’s environment is influenced by the presence of and interaction with that person’s behaviors and traits, and personal traits are influenced by both behavior and the environment. While each of these three factors is considered to influence the other two within reciprocal determinism, the amount of contribution each factor makes in a specific behavior is variable, and so pursuing behavioral intervention using the theory involves determining the extent to which each factor should be addressed, as well as determining appropriate methods of address (Miller & Morris, 2016).

Within SLT, the interplay of cognition, environment, and behavior creates a social foundation for learning that begins with observation of behavioral models (Health Communication Capacity Collaborative [HC3], 2015). Behavioral models may be in-person or digital demonstrations of a desired behavior, such as smiling or completing a puzzle. According to HC3, observational learning comprises four distinct cognitive stages: attention, or actively observing the behavioral model; retention, or storing new information to be retrieved at a later time; reproduction, or recreating modeled behavior in order to practice it; and motivation, or feeling compelled to continue the behavior in the future. As will be later discussed, children with neurodevelopmental disorders may have impairments in
some of these cognitive functions, but not to an extent that would preclude use of SLT in adaptive RT intervention.

Social Skills and Learning in Children with Neurodevelopmental Disorders

SLT occurs within a social setting and using social tools, so it is important to first explore the social capacities of children with neurodevelopmental disorders. Though mild to profound social and cognitive impairments are characteristic of the population, foundational capacities may exist and be supported in an adaptively implemented SLT-focused RT intervention (Vanvuchelen, Feys, & De Weerdt, 2011; Wishart, 2007).

Children with DS

Characteristics of children with DS include an outgoing personality and elevated interaction (Cebula et al., 2010). While these characteristics are social strengths in some ways, it is important to note the ways in which the DS population exhibits unique needs in the processing of information in a social environment in order to produce RT programming that supports social and cognitive development.

A study by Wishart (2007) explored object concept, emotional recognition, and collaborative learning skills in children with DS using hiding tasks, distinguishing between six primary emotions, and sorting tasks alongside a peer, respectively. Results showed difficulties in all three areas, though results on the topic of emotional recognition were more relative and varied than those of the other topics. Most notably, while TD children have been shown to learn well from working collaboratively, Wishart found that children with DS showed no significant improvement after an activity with a peer partner, suggesting that the sociability characteristic to people with DS may not be a tool that is naturally used effectively in a social learning environment. Wishart’s findings provide qualitative and quantitative evidence that while children with DS display some social understanding and interaction, their socio-cognitive development is notably different from their TD counterparts. From an RT perspective, this difference in socio-cognitive development demonstrates a barrier to be overcome with intervention focused on inclusion in peer groups and socialization. However, when designing an RT program for children with DS, a motivation to engage socially may be considered a strength to be used to promote participation in recreational behavior.

A study by Fidler, Most, Booth-LaForce, and Kelly (2008) measured functional development in children with DS, finding that children with DS display relative weaknesses in development of motor skills and cognitive development when compared to children with other developmental disabilities. In fact, a slowing of cognitive development was measured over time. However, relative strengths in the areas of social orientation and social engagement (as compared to the areas of emotion regulation and motor skills) were found when children with DS were observed and rated on a developmental scale. More recently, Hahn et al. (2013) produced a study in which understanding of intention was determined through imitation of target condition as well as failed intention condition. Resulting evidence showed that while children with DS were more likely than those with other developmental disabilities to correctly perform the activity after the demonstrator failed, affect sharing and imitation of the failed intention produced a significant positive correlation. The combination of these two studies of social relating in DS children points to both the elevated social skills and the developmental difficulties in the population, where a child may display traits of relatability and engagement, but lack the social cognition required for increasingly complex social relationships. Within RT intervention, these social skills may be leveraged in the social learning of leisure and recreational behaviors, adding to the potential for meaningful wellness outcomes (Stumbo & Peterson, 1998).

Children with ASD

ASD is characterized by social impairments such as a lack of interest in other people, lack of participation in social reciprocity, challenges with symbolic communication, and difficulty interpreting verbal and nonverbal cues (Bushwick, 2001; Vaiooli, Grimmet, & Ruich, 2015). Indeed, an ASD condition is diagnosed by difficulties in social learning (Bushwick, 2001). According to Bushwick, these social impairments make it difficult for children with ASD to navigate the social environment and behave appropriately. While the extent to which these impairments manifest varies across the autistic spectrum, they inherently produce a difficulty in learning within a social context for the learner with ASD.

A study by Hudson et al. (2012) investigated the association of autistic traits with the perception of pro- and anti-social behavior through the facial expressions of others. The results of the study showed a negative correlation between implicit learning of social information and autistic
traits. Such a study provides some insight into the inherent implicit learning difficulties associated with ASD; subtler social cues that are not explicitly taught but come to be understood over time in the TD population are more difficult for children with ASD to grasp. In terms of RT programming, this information is significant, as it provides both guidance for implementation (using explicit social cues) and a potential treatment goal of increasing nuanced social understanding.

A four-experiment study by Parish-Morris et al. (2007) compared children with ASD to TD children in nonverbal enactment and word-learning tasks, finding that children with ASD pay attention to social cues and can use attentional social cues to learn words, but have some difficulty with understanding and learning intent. A more recent study by Jing and Fang (2013), focused on identifying toys with novel labels, supported the previous evidence that children with ASD exhibit more difficulty than TD children in learning new words through referential intentional information gathered in a social context. Findings in these two studies are notably similar to Hahn et al.’s (2013) study of understanding intent in children with DS, showing a possible similarity between the two populations with regard to picking up on subtler social cues and cognizing more complex social interaction. RT programming, therefore, must adapt implementation techniques to ensure comprehension within the practitioner-client social environment.

Research by Vaiouli et al. (2015) used a child-focused, improvisational music therapy intervention to study the effects of the therapy on face focus, response to joint attention, and initiation of joint attention (i.e., a shared focus by two people on one object) in children with ASD. Increased levels of engagement in all three areas of study point to the potential efficacy of interactive and relationship-based learning opportunities for children with ASD, despite the low levels of social engagement at baseline. This study is especially interesting in a discussion of social learning for RT implementation, as the interactive music therapy provides an example of modality that can be used in RT, and the result of social engagement reflects an RT outcome that would be desirable for the population (Bittman et al., 2004).

While all of the above studies describe social and cognitive impairments in children with DS and children with ASD, it is important to note strengths as well as examples of interventions that can be used to improve social and cognitive functioning. It is also significant that in most of the studies, the capacities of the children with DS/ASD were being measured against TD children or children with other developmental disorders. While this information is valuable in terms of understanding different ways of developing social and cognitive skills in different populations, intervention for these groups will focus on personal improvement from baseline. In other words, while the population shows difficulties in certain areas relating to SLT, it is still possible (and worth further study) that intervention using an SLT framework yields positive outcomes. Specifically, with respect to RT intervention, this information shows that social learning can be a useful tool in achieving outcomes such as social engagement, group participation, and learning of specific (health/leisure) behaviors (Vaiouli et al., 2015).

**SLT and Children with Neurodevelopmental Disorders**

In a discussion of SLT-based RT treatment for children with neurodevelopmental disorders, addressing proven strengths that have promoted SLT-based learning within the population is imperative. While few studies specifically cite SLT in exploring a learning program for children with neurodevelopmental disorders, many have included aspects of the theory, such as observational learning (learning through observing the behavior of others) and imitation (mirroring the observed behavior of others) in the population. Observation and imitation represent two foundational steps in the SLT learning process, and so exploring these behaviors in children with neurodevelopmental disorders will offer some insight into how SLT can be implemented in RT intervention for the population (HC3, 2015).

An early study by Biederman et al. (1999) focused on video modeling as an example of Bandura’s (1971) passive observation, and explored the effect of modeling speed on learning outcomes in children with DS as well as children with other developmental disabilities. Results supported the effectiveness of observational learning without verbal reinforcement in both groups, and suggested that observational learning may be more effective than standard classroom instruction for the population (Biederman et al., 1999). Passive observation was further supported in Biederman and Freedman’s (2007) literature analysis that touted the use of video instruction of life skills, signs, and lettering for children with DS, children with ASD, and
children with other developmental disabilities. Such evidence looks promising for application in recreation and leisure instruction, such as demonstrating an art project or putting on a life jacket for canoeing. Furthermore, modeling speed variation in Biederman et al.’s (1999) study indicated that a slower speed should be used based on individual observational information processing speeds, proving the adaptability of the modeling technique. A study by Corbett and Abdullah (2005) described how individuals with ASD benefit from visually cued instruction and process visual information more readily than verbal information. Based on these characteristics, as well as the ability to focus narrowly and for extended periods of time, the study suggests that video modeling is uniquely suitable to learning intervention for children with ASD through its support for attention, retention, production, and motivation in learned behavior. Additionally, a study by Alzyoudi et al. (2015) explored the use of video modeling as an application of SLT in the development of social skills in children with ASD. All participants achieved mastery of the social skills targeted in the study. The authors of the study suggest that its outcomes may be due to the motivation (a key factor of SLT) achieved through participation in an activity that is rewarding. The significance of these findings cannot be overstated, as social skills are a building block to learning within SLT, and the study provides evidence that SLT itself can be used to promote such skills. Such potential in the theory creates a social learning cycle wherein early intervention begets early development of basic skills that lay the foundation for continued learning and development over the course of an individual’s life. The idea of developing social skills (an RT outcome) through a rewarding activity (recreation) is one that suggests the usefulness of these techniques within an RT context. This warrants further exploration into more active and socially engaging activities that will likewise provide the motivation to achieve RT outcomes.

Following modeling and observation, the act of imitation is a behavior necessary for SLT-based behavior learning. A study by Vanvuchelen et al. (2011) used the Preschool Imitation and Praxis Scale to measure the motor imitation ability of children with DS and children with other intellectual disabilities. The study discovered an absolute strength in bodily and procedural imitation and absolute weakness in language for both groups. The strength of imitation, not only in children with DS but also in children with other intellectual disabilities, is of significance for this paper, as it indicates one foundational capacity required to follow an observational social learning process. Feeley, Jones, Blackburn, and Bauer (2011) performed a foundational study on the use of prompts, corrective feedback, and social reinforcement to elicit verbal imitation and requesting skills in young children with DS. Participants showed acquisition of imitation and requesting skills, and continued to display the skills in follow-up meetings. Further research by Bauer and Jones (2015) used social reinforcement and prompting to teach infants with DS to imitate increasingly complex verbalizations. Results indicated strong positive outcomes for intelligible verbal imitation over several intervention periods, dependent on each participant’s needs. The study further described generalized request-making and problem-solving skills resulting from increased verbal imitation abilities, showing the potential of early intervention in some basic skills to avoid a “cascade of negative consequences from these early impairments” (Bauer and Jones, 2015, p. 64). Instead, early intervention in these basic skills may provide the building blocks for continued development in verbalization and problem-solving, which lay a foundation for RT goals such as participation, cognitive functioning, and confidence. Furthermore, the common strategies and outcomes of the studies by Feeley et al. and Bauer and Jones suggest the benefit of using social reinforcement as a tool in pursuit of learning outcomes in children with DS, who are, in general, naturally inclined toward social engagement. In the RT setting, social reinforcement could be an especially useful and usable tool, as RT focuses on learning positive health and wellness behaviors within a social context.

Research by Foti et al. (2014) used video modeling to compare imitation abilities in learning a visuomotor sequence (in this case, observing and repeating a pattern on a computer touch screen) between children with ASD and TD children. Results showed marked similarities between the two groups, with the exception of the ASD group’s higher number of imitative errors, indicating a difficulty with “imitative inhibition” (Foti et al., 2014, p. 2444). A similar, earlier study by Nielsen, Slaughter, and Dissanayake (2012) used in-person modeling to compare overimitation and synchronic imitation between children with ASD and TD children. Results were somewhat different from Foti et al.’s in that there was no distinguishable difference in behavior between the two groups of children, in appropriate imitation of the actor or in overimitation and synchronic imitation. It is important to note the hypothesis that individuals with ASD are impaired in socially based imitation was not supported in...
the study, and that it suggests a potential for social motivation and understanding not frequently associated with the ASD population (Foti et al., 2014).

Because modeling, observation, and imitation are integral to effective social learning, strengths in these areas indicate the potential effectiveness of SLT-based learning. Based on the discussed studies, evidence of effective modeling, observation, and imitation of learned behaviors in children with neurodevelopmental disabilities, as well as the potential to adapt intervention to individual needs and environments, provides support for the use of the techniques in recreation and leisure behavior-learning intervention for the population.

**Practical Implications for SLT in RT**

The focus of RT intervention is achieving positive change in functioning and/or behavior in pursuit of physical and mental wellness for the client. At its core, RT intervention aims to teach certain beneficial behaviors through recreation and leisure activities. For children with neurodevelopmental disorders, these behaviors may include social interaction, motor and life skills, problem solving, teamwork, health participation, or any number of areas where there may be a deficit (Bushwick, 2001; Foley et al., 2015; Foti et al., 2014; Hudson et al., 2012; Jing & Fang, 2013; Parish-Morris et al., 2007; Sappok et al., 2013; Vaiouli et al., 2015). In pursuit of individual goal behaviors, SLT-based RT intervention can focus on two main areas: leisure education and specific skill instruction.

According to Dattilo (2015), leisure education stimulates self-awareness, promotes acquisition of leisure-related knowledge, and encourages skill development that enhances self-determination by meeting needs for autonomy, competence, and social connections. Stumbo and Peterson (1998) describe leisure education as one of the three main aspects of RT practice (the other two being treatment and recreation participation). They describe the aim of leisure education as providing skills and knowledge that allows independent, informed choice in leisure participation. For children with neurodevelopmental disorders, leisure education has the potential to support leisure participation by providing the motivation necessary to participate. Recall the four steps of SLT: attention, retention, reproduction, and motivation. Modeling, observation, and imitation focus on the first three steps, but in order to achieve meaningful, lasting behavioral change, the participant must be motivated to continue the behavior (HC3, 2015). Focusing leisure education on the possible goals and rewards that can be achieved will promote leisure participation (Hutzler, Oz, & Barak, 2013). Additionally, the existence of perceived choice promotes motivation (Elliott & Dillenburger, 2016). Therefore, leisure education intervention that includes social modeling of leisure activity and its results (e.g., enjoyment), as well as choice in participation, will aim to support motivation and therefore leisure participation.

Leisure participation, then, both supports and is supported by leisure education. Leisure education encourages participation in the ways described above, and the experience of participation and its results support the principles (the “how” and “why”) of leisure education. Leisure participation requires teaching the participant specific activity-related skills (e.g., how to plant seeds in gardening or how to slice onions in cooking). This process involves both behavior instruction, comprehension, and action, which can be achieved through the discussed SLT steps of modeling, observation, and imitation, respectively – steps that have been proven to promote learning in children with neurodevelopmental disorders in the discussed studies (Alzyoudi et al., 2015; Bauer & Jones, 2015; Biederman & Freedman, 2007; Biederman et al., 1999; Corbett & Abdullah, 2005; Feeley et al., 2011; Foti et al., 2014; Nielsen et al., 2012; Vanvuchelen et al., 2011). Thus, the process of modeling and observing, and ultimately imitating and seeing the results of leisure behavior provides the backbone for RT intervention based in SLT for the population.

Promoting the use of the SLT framework, a study by Dipnarine, Delisle, and Stopka (2012) showed evidence that an adaptive fitness intervention for children with intellectual disabilities, focused on modeling and motivation, produced significant increases in health participation, cardiorespiratory fitness, and endurance, as well as a decrease in body fat. As such, it demonstrates one way SLT can be effectively incorporated into an RT intervention for the population discussed in this paper. While the discussed leisure education and skill instruction focus on specific learned behaviors, the ultimate RT goals of mental, emotional, social, and physical wellness must be kept in mind during intervention planning and execution.

The social aspect of SLT is one that meshes well with the social nature of many RT interventions (e.g., camps, parks, play groups). Facilitators of RT programs may use modeling, observation, and imitation within a social context.
to support social learning and RT outcomes (Alzyoudi et al., 2015; Biederman & Freedman, 2001; Biederman et al., 1999; Corbett & Abdullah, 2000; Vanvuchelen et al., 2011). In this way, the SLT factor of the environment, over which the RT practitioner has the most influence compared to cognitive and behavioral factors, becomes an important aspect of implementation in an RT setting. Maintaining awareness of a client’s individual strengths, needs, and preferences allows the practitioner to shape the learning environment in order to achieve certain goals. For example, a client who is assessed as having low social engagement may not do well thrown into a dynamic group activity. Thus, engagement may become a goal in an individualized program that supports existing strengths. Because of variability of social interaction in learning and the environment in which learning occurs, social skills may become both an input and an output in SLT-based RT intervention for children with neurodevelopmental disorders, and social learning a tool used to achieve RT goals.

To operationalize the SLT framework within RT intervention, it is important to focus on the adaptable nature of the social learning process. Based on the unique needs of children with neurodevelopmental disorders, intervention facilitation may need to be slowed down or repeated as necessary to give the participant time to absorb observed information (Bauer & Jones, 2015; Biederman et al., 1999). Furthermore, social reinforcement, which should be readily available in an RT environment, may be used to support the behavioral learning and development pursued with intervention (Bauer & Jones, 2015; Feeley et al., 2011). Combining the client’s cognition (personal) and behavior factors; leisure education; specific skill instruction (participation); motivation; and modeling, observation, and imitation in a social learning environment involves a complex and cyclical process of continual improvement and environment manipulation. Below is a model of the interplay between the client, practitioner, and environment in an SLT-focused RT program.

(Figure 1. Model of SLT application in RT programming available in Appendix A)

As the reader can see, the process begins with input from both the client and the RT practitioner, creating a complex and inter-influential process of learning and skill development, with an output of RT outcomes (goals determined in the initial treatment plan). Important aspects are the interrelation between the client’s cognition and behavior and the learning environment, the interplay between specific skill instruction (participation) and leisure education, and the cyclical nature of health results influencing future RT programming. The model provides a process through which SLT can be implemented in an RT environment in general, with support for its use in children with neurodevelopmental disorders specifically provided in this paper.

Suggestions for Future Research

This paper serves as only a starting point for a theory-based learning approach to RT implementation, and significant additional research is required to test the hypothesis that SLT-based RT programming is an effective intervention for the reviewed populations in this paper. Additional research should focus on applying the elements of observation of behavioral models, retention, reproduction, and motivation within RT settings and qualitatively determining how RT outcomes from the theory-based intervention compare to those of current interventions. Researchers should use an understanding of the interaction between personal, environmental, and behavioral factors to guide research/program design.

Based on the wide range of symptoms and characteristics present within the population of children with neurodevelopmental disorders, as well as the limited representation of the population within the present paper, future research should focus on implementing SLT in RT intervention for narrow and specific groupings (e.g., children with specific learning disabilities, children with fetal alcohol spectrum disorder). Such focus guarantees greater utility of findings, and highlight differences between interventions for different groups.

While the literature reviewed in this paper focused largely on the capacities of children with neurodevelopmental disorders to participate productively in social learning interventions, additional research is needed to determine specific outcomes produced by SLT-focused RT intervention, as well as the efficacy with which outcomes are achieved. Research should also explore what adaptations are most necessary and most effective for specific populations. In addition, because children with neurodevelopmental disorders exhibit mild to profound personal, social, cognitive, and occupational impairments from an early age, investigating the extent to which early intervention aids future development and processing may help promote holistic wellness programming for the population.
Conclusion

There is a great deal more experimental research to be done in order to fully support the use of SLT in RT intervention for children with neurodevelopmental disorders, but based on preliminary studies relating to the observational learning and imitative capacities in the group, the outlook for use of the framework is promising. There is some literature that suggests the potential use of the Social Cognitive Theory in general RT application; however, it is relatively old and remains admittedly weak in its exploration of people with severe cognitive impairments (Wise, 2002). This paper focuses, then, on the qualities, opportunities, and difficulties specific to children with neurodevelopmental disorders. While children with neurodevelopmental disorders may have difficulties in socio-cognitive functioning, SLT may be implemented in a way that uses what capacities exist to beget socio-cognitive and other outcomes, making the process of social learning easier as intervention progresses. Based on the adaptability of social learning, the SLT framework may be tailored to RT intervention in a way that supports RT outcomes of independence, health, and wellness within a social context.

References


Appendix A

Figure 1. Model of SLT application in RT programming
The Transportation Recreation Opportunity Spectrum as a Spatial and Quantitative Metric: Results of a Preliminary Investigation at Yellowstone National Park

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The Transportation Recreation Opportunity Spectrum as a Spatial and Quantitative Metric: Results of a Preliminary Investigation at Yellowstone National Park

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Abstract

Transportation is both a means to access recreation and a form of recreation in itself. Because diverse audiences have differential transportation access and experiences, a spectrum of opportunities should be considered when planning for the provision of adequate, quality transportation options in park settings. In well visited parks with defined facilities, services, and roadways for motor vehicle traffic, use of the Transportation Recreation Opportunity Spectrum (T-ROS) should take into account a variety of indicators to set standards for the visitor experience, managerial contributions, and resource impacts. To explore the utility of the T-ROS framework, and specifically examine the use of three potential indicators (i.e., number of modes, view of scenery, and slope of rode) within a composite index, we used a geospatial analysis in Yellowstone National Park, USA. Results center on areas of differential T-ROS value and what this may mean for park management and extension of the framework. Strengths, limitations, and opportunities for further investigation are also detailed.

Keywords: accessibility; outdoor recreation; park management; transportation; Recreation Opportunity Spectrum
Transportation methods (e.g., private vehicle, public transit, bicycle) and access to them have tremendous impacts on the perceived qualities of park services to visitors (Pettengill, 2013). For example, New York City residents rated transportation accessibility, safety, and information as important facilitators (or, in their absence, hindrances) to their visitation of national park units within the local area (Perry et al., 2015). Visitors to national park units in urban, urban-adjacent, and rural areas across the country also rated similar transportation factors, as well as associated recreation-setting attributes, as important in the quality of their experience (Xiao et al., 2017). Transportation methods may be viewed not just as a means of access, but also as a range of transportation settings that offer diverse recreational opportunities (Xiao et al., 2017). To plan for transportation and to satisfy the diverse recreational demands of visitors in a park, park managers should first understand the spatial distribution of transportation systems (e.g., paved and unpaved roads, bicycle pathways, hiking trails). To do so, the transportation recreation opportunity spectrum (T-ROS) was developed (Pettengill & Manning, 2011). However, it has yet to be benefit from empirical testing. Therefore, the purpose of this project was to use geo-processing methods to analyze spatial distributions of the T-ROS and provide guidance for the siting of new transportation facilities within a specific park. Yellowstone National Park (hereafter, abbreviated as “Yellowstone” or “the park”) was chosen as the study site because it is an iconic and highly visited national park in America’s National Park Service System, hosting a diversity of transportation modes.

Literature Review

Recreation Opportunity Spectrum (ROS)

Public lands must serve a broad population base with diverse interests and desires for outdoor recreation (Manning, 2011). Demand for diverse recreation opportunities has led to development of several zoning and organizational frameworks designed to help guide park planning and management. Carhart (1961), for instance, developed a scale from "wildness" to "semi-urban" by identifying different recreation habitats that span the wilderness-civilized continuum so that wildland planning could be shaped in ways that reflect the range of settings, activities, and preferences necessary for a quality recreation experience on a large societal or geographic level. Also, the Outdoor Recreation Resources Review Commission proposed a six-fold framework for public lands that ranged from "primitive" to "high-density use" areas with similar intent of purpose (ORRRC, 1962). However, among all developed recreational classification systems, the most widely used and highly advanced framework is the Recreation Opportunity Spectrum (ROS).

The ROS framework is a tool used to support definition and management of diverse outdoor recreation opportunities in parks and public lands. The ROS can be defined by a series of indicators and associated standards, such as density of use, accessibility, and social interactions (Clark & Stankey, 1979). Management agencies such as the U.S. National Park Service and U.S. National Forest Service have incorporated ROS concepts and the framework itself into management considerations for intra and inter-site diversity. The ROS defines a range or spectrum of opportunities that the public or private sectors can provide to meet the diversity of visitor activities, settings, and experience preferences (Driver & Brown, 1975,
Several studies have explored the relationships between visitors’ motivations, activities, experiences, and environmental setting preferences (Virden & Knopf, 1989). Although the relationship between these four variables varies in different study cases, a diverse ROS enhanced the linkage among them. These studies tend to focus on the diversity of visitors (e.g., cluster analyses to examine subgroups, regression analyses to examine relationships among variables) in wilderness and public park settings (Brown & Ross, 1982, McLaughlin and Paradice, 1980, Vogelsong et al., 1998). Significant relationships have been found between setting attributes along the ROS continuum and visitors when visitors are grouped by activity type (Cavin et al., 2005; McLaughlin & Paradice, 1980) or by motivation (Floyd and Gramann, 1997; Vogelsong et al., 1998).

In addition to facilitating these linkages, the ROS is a conceptual and organizational framework with many other potential applications. First, it provides an inventory to specify recreational opportunities provided by each public land area (Buist & Hoots, 1982). Second, the ROS helps managers to identify recreation opportunities and implement management strategies in terms of activities, environmental settings, and experiences that complement visitor preferences (Driver et al., 1987). Finally, ROS can help visitors to select desired settings and activities according to their preferred experiences along the recreational spectrum on each visit (Buist & Hoots, 1982).

**Extending the Opportunity Spectrum**

From this basis, ROS has been extended in several recreation related research areas, such as tourism, ecotourism, wilderness, water recreation, and highway experience. As for tourism, Butler and Waldbrook (2003) incorporated the theory of the life cycle of a tourism destination into the concept of ROS and developed a tourism opportunity spectrum (TOS). The framework of TOS consists of six indicators: type and level of access, other non-adventure uses, level of development of tourism infrastructure, social interaction between guests and hosts, acceptability of visitor impacts, and acceptability of visitor regimentation. Dawson (2001) used these developed indicators (see Butler & Waldbrook, 2003; Clark & Stankey, 1979) to compare the characteristics of five TOS settings in a variety of environments and refine setting attributes that may define nature-based tourism and ecotourism, subclasses of experience within the TOS constraints, and indicators of these experiences may be identified and monitored. Further work in combining the ROS and TOS structures included a study to develop an Ecotourism Opportunity Spectrum (ECOS) (Boyd & Butler, 1996). The ECOS ranges from eco specialist to eco generalist and the indicators consist of eight factors: 1) type and level of access, 2) relationships between other resource-related activities, 3) forms of attractions offered, 4) extent, complexity, visibility, number, and type of existing infrastructure, 5) social interaction between other eco-tourists and hosts/local populations, 6) level of knowledge and skill of eco-tourists, 7) acceptance of visitor impacts, and 8) acceptance of management regime.

Beyond land-based tourism considerations, management agencies have also recognized the importance of the ROS in water-based recreation settings. In particular, the U.S. Bureau of Reclamation recognized the importance of the diversity of water recreation demands and formulated a guidebook to describe the Water and Land Recreation Opportunity Spectrum (WLROS) and incorporate the WLROS into water recreation planning (U.S. Bureau of Reclamation, 2009). The WLROS is defined by indicators that include activities, setting...
attributes, and experiences. This fuller spectrum of water and land recreation was adapted from Brown's ROS framework (1978). The WLROS guidebook also provides steps and strategies to implement WLROS in regional water-based recreational planning.

Finally, another application of the ROS in recreation research is the development of a highway experience opportunity spectrum (Brown, 2003). In this research, a new and empirically-supported framework emerged indicating that highways could be viewed as corridors of human values, not just merely transportation pathways. The highway experience opportunity spectrum was defined by: 1) intrinsic scenic byway qualities, 2) capacity, 3) length, 4) remoteness, 5) connectivity, 6) speed, and 7) purpose. Brown’s research (2003) incorporated the ROS into a spectrum for transportation and built the basis of a Transportation Recreation Opportunity Spectrum, or T-ROS. The definition of these seven has provided grounds for investigating what indicators may be applicable in different transportation corridor-based recreation opportunities and settings.

GIS Applications in ROS Research

Recently, Geographic Information System (GIS) technology has been used as an advanced tool for ROS-related research. For example, Flanagan and Anderson (2008) utilized GIS tools to map the extent of visitors' wilderness perceptions in the San Juan National Forest. The visitors were divided into four groups based on the concept of purism (i.e., how they define “wilderness”). Maps were created for each group that represented perceived wilderness conditions and respondents compared these conditions with ROS zones. The result indicated that maps of perceived wilderness have potential functions to refine ROS zoning. In the previously mentioned highway experience recreation opportunity spectrum study (Brown, 2003), a map was created with GIS methods to indicate the density of scenic points of different locations on a highway, which reflected the perceived "best" and "worst" highway locations. Also, the WLROS guidebook used GIS to create maps as a WLROS inventory to depict the current type and location of recreation opportunities in the settings. Given the utility of geospatial analysis methods in park and recreation research generally, and ROS research specifically, this has been a noted direction and need for decades (Beeco & Brown, 2013; Nedovic-Budic et al., 1999).

Transportation Recreation Opportunity Spectrum (T-ROS)

Based on the ROS model and the close relationship between transportation and recreation in parks and public land, Pettengill (2013) developed a framework for T-ROS. Pettengill’s study incorporated survey data across a spectrum of recreation-oriented roads in northern New England and estimated the standard indicators for a density of use spectrum. The indicators of T-ROS consisted of 1) density of use, 2) landscape character, 3) facilities and service, 4) cost, 5) convenience, 6) corridor design, 7) mode of transport, and 8) trip purpose. Pettengill’s work also noted other indicators (e.g., condition of the road) that may be worth exploring and including. As one of the first works in this field of T-ROS, Pettengill’s research (2013) built the theoretical basis for a T-ROS framework and provided a solid basis for further quantification of T-ROS indicators. This framework and modes for empirical testing have been incorporated into Federal Lands Highway management considerations (Pettengill & Manning, 2011). It appears, however, that this theoretical basis is yet to be elaborated upon in subsequent studies. As the T-ROS may aid in public lands management to encompass a variety of settings and a variety of visitors, testing and
refining this framework is a crucial area for further research. This study, therefore, addresses this need by using GIS-based geospatial analysis to examine the utility of a suite of potential indicators of T-ROS in a well-visited public lands setting.

**Research Objectives**

Building from this preliminary work on the T-ROS, the present study aimed to test the framework in a park setting with diverse transportation corridors. It primarily focused on 1) analyzing three of the nascent indicators of transportation recreation opportunities (i.e., number of transportation modes, density of points of interest, and condition of the road [steepness of slope]) and 2) summing values of these indicators in an overall metric that allows ranking of T-ROS considerations across different locations. The area of focus for this investigation was Yellowstone National Park (an iconic federally protected land in Wyoming, Montana, and Idaho, U.S.). Because this park provides a diversity of settings, facilitates recreation through a limited number of transportation modes in a bound system of roads and trails, and is highly visited, it was chosen as a complex area in which to test the T-ROS framework. The specific questions considered for this investigation were as follows:

1. What are values of T-ROS in different areas of Yellowstone National Park?
2. What areas have higher concentrations of a diversity of T-ROS values than others?
3. What areas are dominated by a single T-ROS value?
4. Where would be the most suitable spots (i.e., those with the highest T-ROS values) for new public transportation facilities/stops to be located to alleviate vehicle congestion in these areas?

5. If transportation stops were built in these areas, what would be a useful presentation format to visitors for them to determine if utilizing these transportation stops would facilitate or complement their experiences?

**Methods**

**Metadata**

Data were downloaded and manipulated from the Wyoming State Geological Survey website (www.wsgs.uwyo.edu/research/yellowstone/gis.aspx), an office hosted by the University of Wyoming (WSGS UWYO). This state agency has created specific geodatabases for Yellowstone National Park. Because these secondary data are readily available and standardized for geographic areas including U.S. national parks, their use did not warrant primary data collection. Data were manipulated by the authors to address the research questions. Digitized park and research features were created from the manipulated data and by map comparisons with the detailed park maps available on the Yellowstone official website (www.nps.gov/yell). All primary data layers utilized are detailed in Table 1 (see Appendix A).

**T-ROS Indicators**

There are a number of T-ROS indicators, but for the purposes of this project, we are focusing on the ones that are applicable to the Yellowstone study site and research purpose. These pertinent indicators are: 1) number of transportation modes, 2) view of the scenery, and 3) slope of the road. Before analyzing and computing the four indicators, we acquired data from the sources listed in Table 1 and confined (e.g., clipped) them to the Yellowstone boundary. Because this analysis is aimed for park managers, park-defined “Points of Interest” features (e.g., geysers, waterfalls, historic lodges, wildlife viewing areas) were used as the criterion of interest.
**Indicator 1: Number of Transportation Modes.** Yellowstone has three main delineated modes of transportation: roads (for all vehicle traffic, including snowmobiles), trails (for foot traffic and, in designated areas, stock and pack travel), and bicycle paths (for non-motorized vehicle traffic and foot traffic). First, we separated the bicycle paths from the trails layer by selecting all trail records where biking is allowed and separating these distinctions into two separate layers. Second, we dissolved each layer based on name, so that whole roads, trails, and paths could be examined instead of at a segment-by-segment level (numbering in the tens of thousands). Dissolving is a means to look at an entire feature instead of each discrete section (e.g., a whole trail instead of each section between its intersections with other trails). This resulted in nine roads, 452 hiking trails, and 13 bike paths. Third, we buffered trails (500 m), bicycle paths (500 m), and roads (1000 m) for a reasonable viewing distance from each. Buffering is a means of creating a corridor of consideration around a linear or shape feature and is useful when examining areas proximate to a road, for example, and not more distant areas. This was determined by using the Measurement tool to assess the distance of “Points of Interest” that are known to be visible from roads, trails, and bicycle paths, based on the researchers’ direct experience. Fourth, we examined areas where buffers for the three transportation modes intersected or were spatially distinct (through intersecting, joining tables, unioning, and selecting of locations) and created new layers of areas where there are one, two, or all three types of transportation surfaces. This resulted in a spatial depiction of areas where there are one, two, or all three surfaces present. Fifth, we dissolved each transportation surface categorization by name, added a “transportation surfaces” value field (1, 2, or 3), and then joined all three based on name and sum of attributes. This process allows for a categorization of the three types of transportation surfaces in a spatially explicit and spatially cognizant way. We then were able to calculate a value for the overall indicator for each named road, trail, or path by averaging how much of the surface area was in each transportation category and dividing by the total area, resulting in an indicator value from 1-3.

**Indicator 2: View of the Scenery.** Scenery was defined as the park-specified “Points of Interest” locations. First, we converted this vector layer of points to a raster data file using the Feature to Raster tool. This process allows for spatial metrics to be calculated across a landscape because it redefines features (points, lines, and polygons) into grid cells. Second, we looked at the Zonal Statistics as a table; statistics by zone is a means of finding integer values for a raster dataset based on a linked dataset (e.g., vector). Third, we joined the buffer polygon vector data for the three classes and then joined the zonal statistics table to it, allowing a summation of the number of points of interest per polygon. Fourth, we calculated a field for the number of features per polygon area, giving a density. In this manner, we were then able to visually depict the relative scenic value of the proportion of a particular named road, trail, or path, or the category as a whole. We used the Jenks Natural Breaks categorization (i.e., ArcGIS delineated categories, much like a cluster or factor analysis, rather than a researcher-imposed designation of values included/excluded from each category) of splitting the data into three levels of scenic view density (low [1], medium [2], and high [3]).

**Indicator 3: Slope of the Road.** A raster DEM (digital elevation model; the standard raster-based geospatial file format) at a 10 m distance was used to determine slope. Using the Slope Analysis tool, we determined slope for the Yellow-
stone landscape. Next, we used the Zonal Statistics as a Table, with the raster slope input and the vector polygon buffers for roads, trails, and paths, to determine the slope of each named transportation surface. Using this process, of examining data by its zonal attributes, we were then able to combine like slope categories. We joined these three resulting tables and were able to plot the average slope per polygon. Again using the Jenks Natural Breaks categorization, we divided the slope into three classes of relative steepness: steeper (1), moderate (2), and flatter (3).

**T-ROS Value.** A value of 3-9, representing the summed range of values for the three indicators detailed above, was created as a new calculated field for each named road, trail, and path. Values were divided by Jenks Natural Breaks into three classifications of T-ROS categories: low (3-5), medium (6-7), and high (8-9).

**Network Analysis: Potential Transit Stop Locations**

The researchers limited the park facilities for this investigation to park visitor and information centers. No publicly accessible files for this information are available online. Therefore, we created a new layer with the 16 visitor centers and entrance stations. First, we created a new feature class in ArcCatalog in our geodatabase for visitor and information centers, using the same coordinate system as the rest of the data. Second, we used the Editor extension to create points for the 16 centers. This was done by carefully comparing a detailed PDF map of the park and its visitor center locations to the roads layer already in our dataset. We added the points where each visitor center is and then added attribute data for the name of each center. Third, we built a network database using the roads (but not trails or paths) data. Fourth, we created a point feature class layer of seven points on the main road that have high T-ROS values in that location or leading onto trails and paths from that location. We selected these particular points because if management were to put in a transit system, these spots may be key features for visitors to see and also may be priority areas to alleviate traffic congestion at (without constructing additional facilities like larger parking lots). Fifth, we used the Network Analyst tool to examine a network dataset of the most efficient bus routes from visitor centers to the potential transit stops, using a cut-off service area distance of 20 km. Finally, we looked at the service areas of the seven transit stops within 1, 5, 10, and 20 km radii. This resulting map depicts what features are within certain distances from each bus stop. Therefore, a visitor would be better able to judge whether it is more practical to take the bus and walk to features s/he wants to see or whether these features are too far or too scattered throughout an area and therefore taking a personal vehicle and parking closer to these features would be more efficient.

**Results**

**T-ROS Indicators and Composite Index**

In completing the spatial analysis of the three T-ROS values, a composite index of the total T-ROS was created and areas of higher and lower values were ascertained. Figure 1 (see Appendix B) depicts the first T-ROS indicator, illustrating travel corridors that are accessible by one, two, or three modes of transportation. Although pedestrians and bicycles are allowed on roads with vehicles, and pedestrians are allowed on bicycle paths with bicycles, we considered the most conservative interpretation of the allowed modes of transportation in this analysis. As Figure 1 shows, areas with all three transportation modes are spread throughout the park’s travel infrastructure, with areas of two transportation modes also found across the
park landscape and areas of one mode only concentrated on roads without path and trail intersections and remote trails. Figure 2 (see Appendix C) depicts the density of points of interest along each travel corridor. Not surprisingly, many of the roads and trails have been constructed in or near areas of high concentrations of points of interest. One area in particular, in the west-southwest, has a high concentration of points of interest for the length of the travel corridor. As the final component of the T-ROS investigation, Figure 3 (see Appendix D) depicts the third indicator, steepness of slope, for Yellowstone’s travel corridors. As this scale was reversed, with the lower slopes having the higher T-ROS value for ease of movement, Figure 3 illustrates that most of the park’s travel corridors are, on average, of relatively lower incline. As this is a comparative measure, it is important to note that what is an average incline or decline for a trail, bicycle path, or road may not be low, medium, or high when compared to corresponding corridors outside of the park. However, Figure 3 does correspond to the topography of the area, with the less steep corridors on the Yellowstone Caldera Plateau and the steeper corridors on the northern edge of the plateau, transitioning to lower elevations beyond the Supervolcano’s visible boundaries.

Each of these figures, 1-3, show the areas of relatively higher and lower values of the individual T-ROS indicators.

When mapped together as a composite index on a summed scale with a maximum of 9, the total T-ROS value of travel corridors within Yellowstone becomes clearer. Figure 4 (see Appendix E) depicts this composite mapping of the total T-ROS indicators. As illustrated, most of the lengths of travel corridors in the park have a medium T-ROS value. Few of the corridors have a low or a high value. Those with the highest T-ROS values (8 or 9) are also seen to be the ones that have the greatest number of transportation modes, the highest density of points of interest, and the lowest slopes in Figures 1, 2, and 3, respectively.

Together, these four maps address our first three research questions. They not only depict what the total T-ROS value is for each location within Yellowstone (research question 1) but also examine the three individual indicators and illustrate how each may be a different value for a particular place and each thus influence the overall value of a particular place. Inherently, in examining these differences in the three indicators and in the composite index, these maps also help illustrate which areas have concentrations of higher T-ROS values (research question 2) and potentially more transportation diversity and which areas have lower concentrations of higher T-ROS values, indicating areas that are potentially dominated by a single indicator or no indicators (research question 3). Figure 4 provides the overarching T-ROS metric, which can be of use when examining what areas have different T-ROS values throughout Yellowstone National Park (research question 1), where there are higher T-ROS values (research question 2), and where there are lower T-ROS values (research question 3). Figures 1-3 offer a more comprehensive look into how each indicator contributes to this overall metric. Therefore, these four maps provide two levels of detail to the first three research questions.

**Transit Stop Suitability Assessment and Public Interpretation**

Results from the second portion of the analysis center on the suitability for transit stops on park roads at the high T-ROS value locations (research questions 4 and 5). These are the most suitable spots for public transportation stops and perhaps the start of a networked system of stops in the park, providing information in relation to re-
search question four. As Figure 5 (see Appendix F) depicts, a transit stop at each of the high T-ROS value locations would be able to be serviced by a bus route from a visitor center within a 20-kilometer radius. This means that visitors would be able to park their cars at a certain visitor center and take a shuttle bus to a high T-ROS value location within a 20-kilometer distance, alleviating vehicle congestion at these locations. Thus, Figure 5 depicts spots suitable for new public transportation facilities/stops that may be of most use to a diversity of visitors (research question 4).

To illustrate what this means for visitors and how they might plan their experience using or not using this proposed system of transit stops, Figure 6 (see Appendix G) depicts what points of interest are within a 1, 5, 10, and 20 kilometer radius of the transit stops at high T-ROS value locations (research question 5). From a map such as this, visitors may assess what scenic spots they want to see, how far these spots are from a certain transit location, assess their time and fitness constraints, and plan accordingly. For example, a family with small children may only want to take the public transit option if all of the sights they want to see are within a 1-kilometer distance of that stop. Similarly, a backpacker who would want to start at a trailhead that is beyond a certain distance from a transit stop may not want to utilize the public transportation option and have to add additional distance to his or her hike. Figure 6 presents a general map for visitors to determine if utilizing these transportation stops would facilitate or complement their experiences and thus adds knowledge to answering research question five.

Implications

This research has relevance for both research and management. As a preliminary examination of some of the aspects identified as components of a T-ROS metric, and tested in a well-known and well-visited national park, this project identified spatially explicit areas in which a higher or lower T-ROS value for its components (i.e., indicators) and overall could be mapped. This work extends past efforts that identified these indicators but did not map their locations within a given park. In identifying areas with higher and lower T-ROS values, this work allows for more detailed investigations and stratifications of park use by T-ROS value. It provides a quantified, spatially explicit foundation for further investigations into how the spectrum of transportation recreation opportunities may be a limiting or enhancing feature of visitors’ perceptions of experience at various locations.

The T-ROS framework proposed by Pettengill (2013) includes a variety of indicators. This investigation focused on ones related to landscape character, facilities/services, and mode of transport. The results suggest that there are areas of the park where these particular indicators may have differential impacts to the resource, facilities, and experiential aspects of the setting (Manning, 2011). Areas with a high concentration of features and multiple modes of transportation available may be more heavily impacted by a variety of uses and visitor densities. Consideration of what areas have higher T-ROS values, such as the Old Faithful Geyser Basin, is important not only when looking toward future facilities planning but also when considering current impacts. Identifying these areas may complement current knowledge about conditions in these particular locations and what management actions (e.g., limiting use, increasing supply, hardening the resource, changing visitor behavior) may be appropriate (Manning, 2011). In this way, examinations of T-ROS, and findings such as presented here, extend knowledge of not only the diversity of experiences that may be available within a recreation setting, but also in what
areas we may expect to find greater or lesser impacts. Although the ROS framework has been a design for diversity for decades, examining transportation as a form of access and recreation extends understanding of how this particular aspect may be examined and quantified on the landscape. Given the importance of transportation in the visitor experience (Perry et al., 2015; Xiao et al., 2017), this investigation provided insight on how a T-ROS framework (specific indicators and overall metric) may be applied in a particular recreation setting.

The findings of the present study also have relevance to management. As this project was undertaken as a general and preliminary test of the framework, there are many aspects that have been generalized and may not apply to every situation. For example, when looking at T-ROS values in their park, managers may want to assess whether or not slope is a defining and limiting factor for the recreation experience. Although slope may be an important factor in hiking and bicycling experiences, it may be a lesser factor in vehicle experiences and park managers may want to examine the extent to which this aspect is weighted for each travel corridor type. They may also want to add indicators for vehicle roads that may not apply to other corridors, such as the road surface type, condition, and seasonal closures. On the issue of weighting, park managers may also decide that not all points of interest should be equally weighted. In this project, all points of interest were assumed to carry the same scenic and destination value. However, managers may want to work with researchers to examine the equal-weighting scheme. There are undoubtedly some park features that are more attractive for visitation, or elicit a longer time commitment for visitation, than others. Identifying these features (through managerial and visitor use data) may help tailor the T-ROS approach presented here to account for a range of site attractions from points that are a concentration of smaller features clustered together near multi-use travel corridors to features that are singular points of spectacular interest.

Aside from issues of indicator inclusion and weighting, managers may use the information presented to see what areas have higher T-ROS values and perhaps concentrate on building bus stops in these areas to alleviate congestion or the need for greater infrastructure. As more parks are considering how to lessen vehicle traffic, this may become increasingly important in designing looped transportation systems, especially in a park as large as Yellowstone. Placing bus stops only in areas of high T-ROS values should not be seen as the only priority, though. Understanding the visitors’ wants and needs is foremost in creating and maintaining a positive visitor experience. Therefore, it is also important to devote attention to the areas that may have lower T-ROS values but may be gateways or methods to areas that are more remote, have a single transportation mode, are steeper, and have more dispersed scenic spots. Enhancing the visitor experience may require more detailed signage, less frequent but still available transportation services, and a greater understanding of how visitors utilize the area. As the entire spectrum of transportation recreation opportunities is valuable and provides a range of options for visitors, it is not our intent to suggest that parks should strive for all high value T-ROS locations. However, understanding the diversity of these locations and how they may be spatially presented to visitors may aid in fulfilling management goals and providing greater visitor satisfaction.

**Limitations**

As with any investigation, this work had constraints. Although these constraints may affect
the findings, they are also opportunities for further research into T-ROS. A subset of potential T-ROS indicators were chosen for this project. This selection was made to constrain the scope of the work, align with publicly available data, and provide a suite of indicators. Past research has identified other indicators that could be useful to empirically test, such as density of use, cost, convenience, corridor design, and trip purpose (Pettengill, 2013; Pettengill & Manning, 2011). Investigating these indicators may produce different or more nuanced T-ROS metrics. Furthermore, testing any indicator in a different park setting may produce different metrics, especially if Jenks Natural Breaks (i.e., comparative classes) are used as typology set points. Perhaps a weighting scheme on a park-specific basis and in line with management objectives and visitor use patterns would more appropriately capture differences and priorities not realized in an equal-weight scenario. We did not consider such a weighting scheme. Combining data sources, such as visitor use surveys, management interviews, and spatial analysis, rather than relying on a single type of data (GIS data in this case) would lend insight into what weights may be appropriate, what indicators may be yet unexplored, and how preferences for different indicators and T-ROS values overall may vary by visitor group (e.g., demographics, motivations). Finally, this investigation was confined to the boundaries of Yellowstone National Park. As ROS may be considered as both an intra and inter-site examination of diversity, it would be prudent to look beyond the administrative boundaries of the park unit and toward the larger geographic region to examine on what scales the range of T-ROS values are represented. Refinement of the T-ROS metric may yield a standardized scale for comparison across indicators and settings and warrants further consideration as studies progress.

Future Directions

The research questions here may be expanded upon in future research by tests in different locations, with an expanded set of indicators and/or weights on current indicators, and with particular user groups. Park size and park-identified points of interest may factor into the T-ROS values seen and to have a transferrable set of indicators and overall metric would require input from various locations and situations to compute a robust set of attributes that could be presented as a T-ROS body of concepts, or theory, that is applicable in a variety of settings. Further research questions and hypotheses may identify additional indicators that should also factor into T-ROS computations and perhaps identify weights of one indicator to another that are generally consistent among situations. Differential weighting of the indicators based on their centrality to a quality visitor experience and/or the feasibility of management intervention could refine the metric to better capture the importance of different parts of the recreation setting (i.e., facilities/management, resource, and social/experiential; Manning, 2011). This weighting and refinement would require spatial analyses paired with visitor use preferences (e.g., qualitative interviews, quantitative questionnaires). Other pertinent avenues of further research include whether these are land management focused (e.g., across National Park Service lands, across Forest Service lands) or ecosystem focused (e.g., across mountainous portions of parks, across prairie portions of parks, across portions of parks with high water body concentrations). Finally, there may be an element of user group preference in the calculation of these metrics. Although it is useful to have a metric that would satisfy the average visitor with the average use patterns, in reality, no visitor is completely average. Therefore, it would be beneficial to further-
ing this body of work to examine how different user groups interact with these T-ROS indicators, what relative weightings they place on each, and how this may vary both spatially and temporally depending on use patterns.

References


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### Table 1. Metadata on the file layers used in the completion of this analysis. All files have been originally produced or clipped to the Yellowstone National Park boundary.

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<td>Vector</td>
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<td>Incidents in Closest Facility Analysis and Facilities in Service Area Analysis</td>
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<td>2009</td>
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<td>WSGS UWYO</td>
<td>Slope calculation</td>
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Appendix B

T-ROS Indicator One: Number of Transportation Modes on Roads, Paths, and Bikeways in Yellowstone National Park

Figure 1. The number of transportation modes on trails, bicycle pathways, and all roads (paved and unpaved) in Yellowstone National Park. The darker the shade of red, the more modes of transportation are allowed along any defined travel corridor.
Appendix C

T-ROS Indicator Two: Views of the Scenery along Travel Corridors in Yellowstone National Park

Figure 2. The density of park-defined points of interest (purple) within a 1000 m buffer of roads, 500 m buffer of bicycle paths, and 500 m buffer of trails. The darker the shade of red, the higher the density of these points is within the buffer for any given defined travel corridor.
Appendix D

T-ROS Indicator Three: Steepness of Travel Corridor Slopes in Yellowstone National Park

Legend
- 1 - High Slope
- 2 - Medium Slope
- 3 - Low Slope
- Points of Interest
- Water Bodies
- Yellowstone Park Boundary

Figure 3. The steepness of slopes on the travel corridors in Yellowstone National Park. The darker the shade of red, the lower the slope of a defined travel corridor.
Appendix E

T-ROS Composite Values in Yellowstone National Park

Figure 4. T-ROS composite values of travel corridors within Yellowstone National Park. The darker the shade of red, the greater the T-ROS value. Individual components that lend to an overall score are mapped in Figures 1-3.
Appendix F

Potential Bus Route Service Areas between Visitor Centers and High T-ROS Value Locations in Yellowstone National Park

Figure 5. Potential bus routes on roads between visitor centers within a 20-kilometer distance of a high T-ROS value destination in Yellowstone National Park.
Appendix G

Distances from Bus Stops in Yellowstone National Park

Figure 6. Points of interest within a 1, 5, 10, and 20-kilometer radius of the transit stops at high T-ROS value locations in Yellowstone National Park.
Review of Literature: Potential Benefits of Urban Nature Exposure and Stream Corridor Based Recreation

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Abstract

This paper examines research and theories which support the argument that within the context of the urban ecosystem, natural areas such as parks, greenways, and stream corridors as places for recreation and leisure have potential to provide a multitude of benefits to the health and quality of life of people living in and visiting urban environments. These benefits contribute to those which are already being realized in more natural areas, such as restoration from mental fatigue and improved sense of wellbeing. This is important because most people in the United States and many other parts of the world live in urban areas, and the number is growing (Grimm, Feath, Golubewski, Redman, Wu, Bai & Briggs, 2008). To ensure that this growing population has access to opportunities that could contribute to a healthy and satisfying quality of life, all potential resources for recreation and leisure, such as those mentioned above, should be explored for possible utilization.

Keywords: urban nature; health benefits; urban streams; outdoor recreation
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Rationale: Benefits of Urban Stream Corridors as Nature

From a public health perspective, in the United States (U.S.), as in other industrialized and technology-dominated places in the world, there is a rising number of health problems that are associated with urban living, unhealthy lifestyles, the changing nature of work, and the mental demands that fulfilling work obligations may entail. Much of the world’s population lives in urban areas, and the numbers are growing. Thus, there is a need to recognize and support existing and emerging opportunities for enhancement of public health that may be found in urban areas.

Population Trends

Recent global population patterns show a shift from most people residing in rural or non-urban areas to a majority inhabiting urban areas. Since the year 1900, the total percentage of the global population that lives in urban environments has changed from 10% to more than 50% (Grimm, et al., 2008). Ninety five percent of the total increase in global population over the next 40+ years is anticipated to occur in cities and urban areas (Grimm, et al., 2008). Ninety five percent of the total increase in global population over the next 40+ years is anticipated to occur in cities and urban areas (Grimm, et al., 2008). Because in the foreseeable future most of the world’s population will live in urban areas, it is important to explore the opportunities that may be found in urban nature. This review discusses current research areas in human health and natural environments that could be related to outdoor recreation and leisure. Nature has been conceptualized as a source of potential benefits for human health and wellbeing, as a place for relaxation, exercise, contemplation, and as a way to offset the stresses of living and working in modern contexts.

Current State of Human Health in Developed Countries

Obesity from inactivity and poor diet, mental fatigue and stress from an increasingly technology oriented nature of work, extended screen use, and living in the built urban environment are just a few examples of the health and wellbeing issues that we are facing as a modern society (Jiang, Li, Larsen, & Sullivan, 2014). Children today are spending less time in outdoor play, persons ranging in age from 8 to 18 years spend over 7 hours per day engaged in some type of screen oriented media, and visits to the National Parks have dropped 20% since 1981 (Atchley, Strayer & Atchley, 2012). Some health problems that have been associated with mental stress and fatigue are immune system suppression, cancer, stroke, and depression (Jiang, et al., 2014). In the U.S., obesity from inactivity and poor diet, mental fatigue from an increasingly technology oriented nature of work, mental stress from extended screen use, and living in the built urban environment mostly separated from the systems that provide for us are just a few examples of the health and wellbeing issues that we are facing (Jiang, et al., 2014).

Nature and Human Health

Human health has been defined by the World Health Organization as a “state of complete physical, mental, and social wellbeing and not merely the absence of disease” and refers to the emotional, environmental, intellectual, physical, social, and spiritual health of humans (World Health Organization, 2006). The benefits of multiple types of exposure to nature have been considered as a treatment for current and rising health problems such as obesity, high blood pressure, heart problems, and increasingly sedentary lifestyles fostered by living in modern contexts (Dustin, Bricker & Schwab, 2010). Research suggests that there are relationships between outdoor recreation participation and health benefits (Dustin et al., 2010). Quality of life is a conceptual framework that is related to human health, and is a
“multidimensional construct that has subjective and objective components, and is influenced by personal and environmental factors” (Wang, Schlalock, Verdugo, & Jenaro, 2010, p.218). Beyond the ecosystem services that urban natural areas such as stream corridors and linear parks provide, as places for recreation, leisure, and self-propelled transportation, they should be thought of as a resource for maintenance and improvement of the quality of life.

Theoretical Background

Attention Restoration Theory

The Kaplans’ (Kaplan & Kaplan, 1989; Kaplan, 1995) Attention Restoration Theory (ART) has been used to study many different types of ways in which the human animal may use certain environments and settings as means to restorative ends, specifically those settings containing some element of nature, as a way to restore mental energies and mental fatigue. Some of the discussion surrounding current research will reference some of the components of ART, so an explanation of the theory is hereby deemed relevant. ART is conceived from an evolutionary perspective (Kaplan, 1995), and postulates that people only have so much directed attention, which is the kind of mental attention needed to work in a high level of cognitive functioning and complete the types of complex tasks that are common in our every day lives, such as writing, organizing, reading, and other tasks that take concentration and directed mental energies (Kaplan & Kaplan, 1989). Directed attention is willful, voluntary, focused, takes effort (James, 1892), and is “susceptible to fatigue” (Kaplan, 1995, p.171). It has also been indicated as being crucial for a person’s ability to inhibit impulsive behavior, acting or speaking without thinking, or acting in socially unacceptable ways (Kaplan, 1995). From an evolutionary standpoint, “this apparent limitation might have been quite reasonable” (Kaplan, 1995, p.171).

To be able to pay attention by choice to one particular thing for a long period of time would make one vulnerable to surprises. Further, much of what was important to the evolving human-wild animals, danger, caves, blood… was (and still is) innately fascinating and thus does not require directed attention.” (p.171).

In the way that a reservoir can run out of water if the volume of water leaving the dam is greater than that which is flowing in from tributary streams, directed attention is thought to be a finite mental resource (Kaplan, 1995). It can be depleted with intensive or prolonged use without opportunity to replenish the mechanisms of the brain that operate to perform tasks requiring intense focus and directed attention (Kaplan & Kaplan, 1989). A person in said to be in a state of mental fatigue if the outflow of mental energies has been depleted with unmatched chance for restoration, or inflow of attentional resources. Symptoms or signs of mental fatigue can be “inaccuracy, impulsivity, irritability, and incivility” (Herzog, Maguire, & Nebel, 2003, p.159).

ART postulates that natural environments can be settings in which a restoration of attention and cognitive functioning capacity may occur; these settings are known as restorative settings (Kaplan & Kaplan, 1989). An experience in a restorative setting engaged in outdoor recreation or adventure may have human health benefits such as recovery of directed attention capacity, reflection, and “clearing away mental noise” (Herzog, Maguire, & Nebel, 2003, p.159). The components that make up restorative settings in ART (Kaplan
& Kaplan, 1989) are being away, fascination, extent, and compatibility.

Being away refers to settings where a person can be physically or mentally “away” from everyday settings and situations that may require directed attention (Kaplan, 1995). It is believed that modern settings and built and urban environments which require or evoke mental processes that are different than those used in nature interactions result in mental fatigue. Being away in nature or novel environments enables the mental processes involved in directed attention to rest (Herzog, et al., 2003). Fascination refers to “effortless attention” (Herzog, Maguire, & Nebel, 2003, p. 160), and refers to a setting in which the attention by a person is held without any directed effort required (Kaplan, 1995). Soft fascination leaves some mental capacity to let the mind wander, contemplate, and reflect inwardly. Softly fascinating settings may contribute to experiences in nature being restorative (Kaplan et al., 1998; Herzog et al., 2003). Natural settings generally have fascinating qualities such as clouds, birds, varied textures and colors of the physical landscape, water and its reflections, and trees swaying in the breeze, all of which may capture the attention of people without them having to concentrate or apply directed attention (Kaplan, 1995). Extent refers to the quality of a landscape where it contains sufficient content and structure to distract, softly engage, and occupy the mind for long enough to relieve it of the burdens of using directed attention (Herzog, et al., 2003). Compatibility refers to the ways in which a setting may fit with the goals of a person and the ability of the setting to accommodate those goals. Natural settings are thought of as being highly compatible with the inclinations and purposes of those people who seek them (Kaplan, 1995).

**Psycho Evolutionary Theory**

Psycho Evolutionary Theory (PET: Ulrich, 1983) proposes that recovery from mental and physical stress occurs in settings that evoke interest, pleasantness, and calm (Ulrich, 1983). Certain landscapes, such as streams, may have structural components that are associated with restoration (Ulrich, 1983). And, “humans are attracted to relatively calm water or relatively open vistas because they represent evolutionary designated places of safety, shelter, or refreshment” (Ewert et al., 2014, p.73). Streams are ideal environments for finding scenes with the dimensions of nature that are associated with stress relief, which are structure, depth, and content (Han, 2001).

Structure refers to the visual complexity of an environment (Han, 2001). An urban river or stream and corridor, which may still have some views of a complex and distracting man made environment, may still have lower visual complexity as compared to concrete dominated sections of the urban environment. Rivers certainly have depth, which includes visually aesthetic elements (Ewert et al., 2014) such as unique textures of the rocks, trees, and plants that line an urban stream, the visual element of the constantly changing texture of the surface of the water, landscape reflection in the water, and the potentially aesthetically pleasing vistas that change with every turn in the stream as one travels through its corridor. Rivers also have environmental content, which refers to the qualities of a natural environment that may be perceived to provide support to human life (Ewert et al., 2014). As a place of support, rivers have historically provided security of food, water, and transportation for humans. Like ART, Psycho Evolutionary Theory is an explanatory framework that offers further support to the idea that experiencing urban nature can have benefits to the health of people.
Promoting Human Health: Urban Green Pathways and Water Based Recreation

The following section is intended to provide definitions for a subsequent discussion of research relevant to outdoor recreation and leisure in urban natural areas in promotion of physiological and psychological dimensions of human health. As previously stated, most people live in urban or urban proximate areas, and as such, many people do not have financial, time, or transportation access to areas with higher degrees of naturalness or wilderness. Specifically, this document creates an argument for the use of urban natural areas such as urban proximate nature trails, designated pathways through tended and untended natural areas on/through college campuses, and greenway trails (often running along rivers and streams) as places for physical and psychological maintenance through walking, jogging, bicycling (for leisure or transportation utility), and contemplation. Also discussed is the use of river trails for canoeing, kayaking, and stand up paddle boarding as forms of exercise for physiological maintenance, and interaction with novel environments for stress relief and psychological health. Lastly, this article creates an argument for promoting emerging forms of river recreation areas; their uses and potential benefits will be discussed.

Definitions

Urban Ecosystem. Urban landscapes, though dominated by human development, activities, and associated impacts, are still an ecosystem with trees, soil, and animals, which are all impacted by natural forces such as wind, rain, and sunshine, and should be thought of to contain nature. The urban forest is part of the urban landscape, and “includes the present and potential vegetation that provides benefits within a land area associated with and influenced by urban populations” (Hauer, Casey & Miller, 2008, p.6). Within an evolving urban ecological framework, urban areas are considered “heterogeneous, dynamic landscapes, and complex, adaptive, socioecological systems in which the delivery of ecosystem services links society and ecosystems at multiple scales” (Grimm et al., 2008). As ecosystems, urban landscapes possess to some degree the natural properties that represent those inherent to rural, wild, and nature dominated ecosystems that surround them. Therefore there is still nature in the urban and sub-urban landscape, such as that which is found in the form of street trees, parks, greenways, stream corridors, and areas that may have reverted to a more natural state. As places with aesthetic qualities, urban nature areas and trails therein may impact perceived quality of life and sense of well-being (Chon, 2004).

Historic Connection: Humans and Water. Today, as in the past, aquatic environments are held in importance by society and have been cited as a common theme among people’s favorite places (White, Smith, Humphryes, Pahl, Snelling & Depledge, 2010). Urban streams and their floodplains, because of their general undesirability for development due to the high potential for destruction or damage of buildings in periods of flood, are generally found as natural areas and may be surrounded by remnant wooded and vegetated corridors. Possible health benefits of spending time in nature in general may also be placed in the same context as spending time in urban nature (such as stream corridors) on established trails and greenways, or as experienced by being on the river in a canoe or kayak, in leisure time. If urban streams are viewed as having some degree of natural qualities, exposure to them should be considered to have some of the same potential benefits.

Urban rivers and streams can be relaxing places, and experiencing them may contribute to
stress relief. As landscapes they offer fewer distractions for the brain and less information to manage than the built environment does, and there are evolutionary connections to why humans are naturally drawn to and enjoy places and scenes with water (Finlayson, 2014). Spending time on or along those streams found in an urban setting may provide a reprieve from the scenes and sounds of the built environment, a welcome change of pace, and a way to experience nature without having to travel far. Ulrich (1983) said that scenes with structure, depth, and content, which may be encountered in urban natural areas. Stream corridors, may “evoke sensations of mild to moderate interest, pleasantness, and relaxation” (Ewert et al., 2014, p.73).

**Urban Nature and Human Health Research.** Recent studies have begun to dissect how the urban ecosystem may provide human benefits beyond ecosystem benefits. Akpinar (2016) studied how the quality of urban green spaces might be associated with physical activity and health, and found multiple linkages between urban green space and health, most significantly, that distance from living space to urban green space is associated with frequency of exercise, level of stress, and mental health. People living closer to urban green space were found to exercise more frequently, and reported lower levels of stress and high levels of mental health. And, Bertram and Rehdanz (2015) examined how the distance lived from green space impacts life satisfaction and well-being. Another study indicated physiological, attentional, and emotional stress-recovery in urban green spaces (Bowler, Buyung-Ali, Knight, & Pullin, 2010). Clearly there are positive linkages between human health and urban natural areas.

**Nature Based Recreation in Urban Areas.** There are many well-established relationships between increased physical activity and improvements in physiological health, including the prevention of cardiovascular disease, diabetes, various types of cancer, hypertension, obesity, and osteoporosis (Warburton, Nicol, & Bredin, 2006), and other benefits that could be experienced by people using urban nature trails for recreation purposes. Several studies have compared human health benefits of physical activity in nature as compared to physical activity in an urban environment and found that activity in some form of nature is better at contributing to a variety of outcomes (Bratman, Daily, Levy, & Gross, 2015). People may recover more quickly from mental stress and have reduced negative affect and arousal with time spent in settings with natural components as compared to settings with little or no natural values, such as those that are encountered in building dominated urban areas (Jiang et al., 2014).

Higher levels of nature found in urban environments have been positively correlated to more positive mood and stress recovery (Jiang et al., 2014). Studies have shown the psychological benefits of exposure to urban nature areas to be positive impact to mood, vitality, and restoration as compared to those of exposure to a building dominated area (Tyrvainen, et al., 2014). A meta-analysis about activity in the natural environment that compared measurements of well-being in natural versus non-natural urban environments showed that activity in nature produced a significant decrease in negative feelings such as anger, sadness, and anxiety, and an increase in positive mood, such as tranquility (Bowler et al., 2010). Urban, sub-urban, and proximate nature trails should be viewed and promoted as places with opportunities for engaging in physical activities such as walking and other forms of exercise that have well accepted health benefits. Generally, existing literature supports the notion that there can be multiple and overlapping benefits to spending time in urban natural areas.
such as parks, greenway trails, and (where available) stream corridors with/without trails.

**Aqueous Environment.** Because in most urban areas stream corridors are places with natural qualities, it is important to recognize contributions to the literature that strengthen the argument that urban streams and aqueous environments may be places with potential benefits to humans. White et al. (2013) examined feelings of restoration recalled after visits to a variety of natural environments including woodlands, forests and hills, moorlands, and mountains. They found that visits to coastal parks, which are aqueous in nature, were most associated with restoration, and that urban playing fields were associated with least restoration; restoration was positively associated with visit duration, which the authors hint may show a dose-response effect. White et al. (2013) also examined the types of activities related to restoration and in their study concluded that while setting was related to differences in feelings of restoration, activity type is not associated. Several recent studies support the notion that rivers and lakes in urban centers and developed areas have value as natural places in which human health can be maintained or improved (Volker & Kistemann, 2013; White, et al., 2010). Barton and Pretty (2010) studied the emotional states of individuals before and after visits to natural settings, and concluded that, although visits to all natural environments included in the study (urban green spaces, rural landscape, forest/woodland, aquatic environments, and wilderness) were shown to improve mood, visits to aquatic environments were more effective in providing the same effects.

While there have been studies that focus on restorative qualities of aquatic environments, few actually explore which elements of aquatic environments may drive this. White et al. (2010) provided some hypotheses about the mechanisms through which higher preference for water, positive affect, and restorative properties may be driven. They posit that visual properties and soundscapes of, and the potential for non metaphoric immersion in the aquatic environment may be part of what makes people prefer water landscapes over those with no water and which gives aquatic environments their restorative properties (White et al., 2010). First, because of the ways in which water reflects light (Fernandez & Wilkins, 2008) and the image of the surrounding landscape to the extent that the view is afforded, a type of fascination may be experienced by people viewing the landscape, which supports the notion of ART that fascination is part of what may make an environment restorative. For example, consider the mesmerizing ways in which the surface of any body of still or moving water can dance around, ripple, or perfectly reflect the view of the landscape. This dynamic viewing environment is also weather and condition dependent, ever changing, and a potentially infinite source of restoration through fascination. White et al. (2010) noted that aquatic environments may produce sounds that are more restorative than those found in non-aquatic nature or urban environments, and that as of 2010 there has been no work done associated with water that has “decomposed the restorativeness of different, and particularly aquatic, sounds” (White et al., 2010, p.491). Water provides a unique opportunity for immersion in an aqueous environment (Rew, 2008), which is fundamentally different than the gaseous atmosphere in which we live.

Research has shown that environments, urban and natural, with the element of water are favored over those that are lacking (White, et al., 2013; Volker & Kistemann, 2013; White, et al., 2010). Rivers and streams are conceptually endless sources of fascination including opportunities to encounter things that are, for most people, out of
the ordinary and potentially interesting. Examples of sources of fascination that may be found on rivers and streams (greenways coursing along streams included) are living things such as snails, birds, fish, and plants with flowers; simply watching the reflection and textures of water as it flows over the stream bed can be mesmerizing and fascinating. Being near an aquatic environment may entail encountering a novel environment that is out of the ordinary and constitutes being away from the realm of day-to-day encounters in urban or rural life. Walking along or floating in a canoe or kayak down rivers are ways to engage with an aquatic environment; ever changing sounds of running water may be relaxing. Traveling upon or simply peering into the water from a greenway trail, or seeing where water meets land may distract, engage, and occupy the mind, relieving it of the burdens of having to concentrate or focus intently. Many streams have dynamic qualities, such as changing levels of flow and gradient, pleasant sounds, open views, whitewater, and other dimensions that, depending on the individual, are compatible with goals of those seeking a change from most other terrestrial environments, including the urban landscape. All of these components experienced in any number of combinations may potentially contribute to restoration of mental fatigue.

**Bird Sounds and Restoration.** Though most of the literature that investigates the restorative qualities of nature focuses on the visual components found therein, there is emerging research that deals with the sounds of nature and their contribution to the restorative qualities of nature and recreational or educational experiences that may happen there. As places which may attract and harbor urban wildlife such as songbirds, amphibians, and insects, urban natural areas should be considered for their potential to contribute to human health and wellbeing because they support animals which may contribute to the restorative potential of an environment.

As places of nature, aquatic environments generally have birds and are thought of places where birds live. Positive relationships were found between listening to sounds of water and bird songs and motivation to work (Jahncke, Hygge, Halin, Green, & Dimberg, 2011). Ratcliffe, Gatersleben and Sowden (2013) identified several dimensions of positive association between bird songs and restoration from attention fatigue and stress in their study on the relationships between bird song and attention restoration and stress recovery. They found that bird sounds were indicated by study participants to be restorative through positive association with pleasant events, and that resulting states of positive mood state and low arousal were perceived to help in alleviating stress (Ratcliffe, et al., 2013).

The acoustic properties of bird songs that may be encountered while recreating in the outdoors, (often melodic, beautiful, and pleasing to the ear) were also found to be associated with participants’ ability to relax and recover from stress, as well as making people feel happy (Ratcliffe, et al., 2013). It should be noted that not all bird sounds, such as those made by a crow or raven, were rated positively; sounds made by songbirds were generally associated with positive affect (Ratcliffe et al., 2013). Other dimensions that were found by Ratcliffe, et al. (2013) between attention restoration and stress relief included the welcome distraction and chance for escape from mental demands that bird sounds may provide, which can be related to the concept of fascination in Attention Restoration Theory (Kaplan, 1995), which suggests that natural distractions found in nature can provide an alternative source of mental focus, which is believed to be beneficial to restoration of attention fatigue (Ratcliffe et al., 2013).
Participants in the aforementioned study also noted that the unique qualities of bird songs provide a source of novelty in sound as compared to the common sounds encountered every day in urban environments, and that the novelty of those sounds created a perceived distance from urban life, and provided a symbol for environments that are different from those encountered in urban areas (Ratcliffe et al., 2013); this report is directly related to “being away” (ART, Kaplan, 1995). This is supported by the work of Berlyne (1960; 1971), which suggests that novelty is positively associated with interest and arousal. In essence, the novelty inherent in the qualities of bird song may allow us a mental escape from our stressful everyday environments, which can be related to the ART construct of fascination and being away.

**Human Health Promotion**

**Greenways and Terrestrial Trails Follow River Corridors.** Smith and Hellmund (1993) cite that greenway corridors are desirable in urban environments because of their ability to contribute to quality of life of humans by providing vegetative cover, places to experience nature, and for aesthetic value. One report indicated that urban river parkways provide health benefits by providing places to exercise and avenues for active commuting, and by contributing to lowering healthcare costs (Jackson, et al., 2014). Also, Jackson et al. (2014) reported positive relationships between river parks and mental health, children’s health, and sense of community for those living in the area. Exercise in nature, such as using urban greenway trails, may mitigate mental fatigue and illness, and simply viewing and spending time in nature has been shown to reduce stress, calm, and have psychologically restorative qualities (Jackson, et al., 2014). Urban environmental and human health can be improved by presence of vegetated river and steam corridors, such as those that would be attractive for use as greenways and water trails, through well recognized ecosystem services such as slowing, storing, and cleaning storm water, improving air quality, and reducing the urban heat island effect (Jackson, et al., 2014). The quality of life of people living in urban environments may be enriched through water based recreation activities, such as canoeing and kayaking on water trails, which may provide opportunities for wellness through physical activity (Schneider, 2009).

**Urban Streams as Water Trails.** Officially designated and managed river trails are not a new thing, yet water based river trails for canoeing and kayaking located in urban settings are a somewhat recent phenomenon in the U.S. The National Park Service (NPS) says that “water trails are networks of points along the water that people can access using human powered boats” (NPS, 2015). Water based river trails, though under researched, show promise of providing some of the same benefits that have been found through research of urban river parkways, which in essence are the terrestrial version of water based river trails. Because of the environmental, scenic, and ecological benefit parallels that potentially exist with urban river parkways and urban water based trails, findings relevant to benefits of interacting with nature via urban river parkways and terrestrial trails can be applied to urban water trails.

Generally, a section of river or other body of water that is an urban water trail has developed and accessible water access points for canoeing and kayaking, and may have maps, interpretive information, and other useful signage along the route and at access points. Urban water trails may be managed by a municipality, state, or under federal provisions. Current media has shown examples of the rising incidence and popularity of urban water trails. Recently, the U.S. government officially designated several rivers as National Water
Trails for boating and general river access under the National Water Trails System created in 2012, which is written under the National Trails System Act of 1968. It should be made clear that not all National Water Trails are located in urban landscapes, and not all urban water trails are National Water Trails.

Whatever the designation, urban water trails could be considered as linear parks and have been gaining increasing coverage in the media due to recent growth in availability and popularity. For example, in 2012 the Chattahoochee River in and near Atlanta, Georgia was the first river to be designated as a National Water Trail, with a 48-mile section of river designated within the Chattahoochee River National Recreation Area (“Chattahoochee River NRA Water Trail,” 2016). Designation as a National Water Trail means that “signage, technical assistance, and resources will be provided to build on and promote the development of quality water trails” (“Resources and Library: Water & Boating Trails,” 2016). To date, there are several National Water Trails that pass through urban landscapes including those on the Chattahoochee River in Atlanta, the Bronx River in New York, the Hudson River in New York (ends in Manhattan), and the Willamette River in Oregon (“Resources and Library: Water & Boating Trails,” 2016).

Many other urban water trails may be found in cities and urban areas around the country; a quick Google search provided access to information about water trails in Milwaukee, Wisconsin; Detroit, Michigan; Bend, Oregon, and many others. For example, in 2013 after more than 50 years of being off limits, a 2.5 mile soft bottom section of the Los Angeles River in the heart of Los Angeles, which is complete with rapids, tree lined islands, vistas of the mountains, and plentiful wildlife, became open to unrestricted public use for recreation (Martinez & Button, 2013). Clearly, even in an urban area such as Los Angeles, river corridors as natural areas suitable for recreation can provide some contribution to ecological and human health through services and opportunities that they provide.

Emerging opportunities for urban areas: whitewater parks. Because of human needs for water, most towns are built around or near a river or stream (Baker, 2009). Historically speaking, many towns’ streams have been dammed for a multitude of uses such as providing drinking water, generating hydropower to run mills, producing electricity for domestic use in the community, and for industrial purposes such as running a mill, or making beer and spirits (Baker, 2009). Many towns also were built near high gradient streams (perfect for whitewater parks) before the advent of fossil fuel based economies and fossil fuel based power generating technologies (Baker, 2009). There is emerging literature that supports the idea that restoring rivers to a more natural state is good for the river as well as having economic benefits to proximal communities (Acuna, Diez, Meleason, & Elosegi, 2013), and potential benefits as venues for physical activity and recreation exist.

River restoration projects may have big impacts in the future in urban areas. There is a recent trend of tearing down dams on urban streams and making whitewater parks out of them, which restores the streambed to a more natural state. The historically common practice of leaving unused and obsolete manmade features such as dams, mid river rubble piles, and small lakes in place has left many unaesthetic and dangerous water features on and in streams passing through urban areas. Over 50 towns in the U.S. have chosen to use this as an opportunity to restore their rivers and streams and to revitalize their communities by tearing down dangerous dams and creating streamside parks.
with more natural looking and functioning features in their place, and the number is growing (Acuna, et al., 2013). There are ecologic and economic benefits to restoring rivers for their human health and ecosystem benefits (Acuna, et al., 2013).

The whitewater park of reference is not the type of artificially constructed and privately operated water park with chlorinated water being pumped up to the tops of huge slides for people to ride down, complete with wave pools in which to swim or float, but rather is an intentionally altered stream bed of a river that after restoration has whitewater features such as drops, waves, holes, eddy lines, riffles, runs, and calm pools in which to wade, swim, or fish. These features may be enjoyed by whitewater enthusiasts (canoeists, kayakers, and stand up paddle boarders), and are probably favored by fishermen over old dams and rubble piles as places to fish. These whitewater parks are generally built in the main part of a town with walkways and benches along the corridor, which turns them in essence into stream corridor parks, which provide multiple opportunities for recreation, access, and connectivity to existing natural resources such as greenway trails and urban parks. These parks have potential to bring economic and human health benefits to the local and regional populations of those cities that decide to plan, create, and follow through with such projects (Barnes, Forrester & Leone, 2013). If the current trends continue, our urban streams may yet show us their potential to provide goods such as ecosystem services, and human health benefits, and economic value may also be added to communities who adopt urban water trails (Barnes et al, 2013).

**Conclusion**

It has been suggested that spending time in nature may facilitate or allow the human mind to transcend what are considered normal states of mind. Time spent on urban streams/corridors in certain types of leisure could provide physical and physiological benefits by providing places for people to relax and experience nature for its aesthetic qualities. Urban streams may also provide places in which to recreate where people may engage in activities and experiences which may evoke a positive state of mind in which action merges with personal awareness and allows intense focus (Csikszentmihalyi, 1975); experiencing urban nature may evoke a positive state of mind with many physical and psychological benefits (Nakamura & Csikszentmihalyi, 2009). This type of positive experience may be facilitated by being in and traveling in urban nature in the form of parks and stream corridors with managed trails (land and water trails) as a recreationist runner, walker, nature observer, or in some cases, as a kayaker, canoeist, or fisherman. This literature review has provided empirical evidence and theories to support and justify the conclusions and arguments that have been made therein.

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on+areas.%22.


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Intersectionality between Happiness and Well-being: A Pilot Study Project in a Midwestern University

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Intersectionality between Happiness and Well-being: A Pilot Study Project in a Midwestern University

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Abstract

This pilot study measures the possible intersectionality of happiness and well-being. Items were used from the Oxford Happiness and Well-Being Questionnaire, designed to independently measure the constructs of happiness and well-being. 42 items were combined from which 10 items were randomly selected and converted to a six-point Likert scale ranging from “strongly disagree” to “strongly agree” and administered to 28 college students at a Midwestern University taking a leisure studies course. The instrument yielded a significant alpha value of $\alpha$ (27) = 0.835. Factor analysis was conducted to find which variable loaded on each factor (happiness and well-being). Items having a value greater than 0.30 on both happiness and well-being factors were considered to represent the intersectionality of the latent variables. The results indicated that three of the ten items loaded on both factors with a value greater than 0.30, indicating some degree of intersectionality between happiness and well-being.

Keywords: Happiness; well-being; subjective well-being; intersectionality; factor analysis; Likert scale
This study explored people’s perception of the distinction between happiness and well-being to identify the possible intersectionality of the constructs. This pilot project administered items from the Oxford Happiness Questionnaire (Hills & Argyle, 2002) and Well-Being Questionnaire (Bradley & Lewis, 1990; Riazi, Bradley, Barendse & Ishii, 2006) to students from a Midwestern University. The purpose of this study was to determine the possible intersectionality of happiness and well-being and perhaps see if any items overlapped synonymously; therefore, suggesting a relationship between happiness and well-being. The literature appears to be ambiguous in the distinction between happiness and well-being. This study examined the overlap of the constructs of happiness and well-being in an effort to identify the level of ambiguity by isolating the variables in both constructs.

**Happiness Constructs**

A review of the literature suggests that happiness encompasses positive affect, life satisfaction, and absence of negative affect. It is associated with better health, sociability, stable marriages, creativity, success and well-being (Carruthers & Hood, 2004; Diener, 1984; Lyubomirsky & Layous, 2013; Myers, 2000; Shin, 2015; Singh, 2014). It is also a personal trait in which some people maintain a more positive mental and emotional state or situation-specific state of happiness (Csikszentmihalyi & Wong, 2014; Sundriyal & Kumar, 2014). Philosophers and sociologists concerned with defining happiness have categorized it into three groups: positive affect; life satisfaction; and absence of negative affect (Diener, 1984). Researchers indicate that people engaged in positive activities such as thinking gratefully, optimistically, or mindfully report being significantly happier (Lyubomirsky & Layous, 2013).

**Well-Being Constructs**

Well-being is the subjective appraisal of individual experiences and life. Included in this appraisal may be a sense of life satisfaction, contentment, happiness, good health, positive emotions and cognition, and a sense of purpose (Carruthers & Hood, 2004; Diener, 2000; Sundriyal & Kumar, 2014; Watkins, Woodward, Stone, & Kolts, 2003). There are six categories important in determining well-being. They are: (1) intellectual; (2) emotional; (3) social; (4) physical; (5) occupational; and (6) spiritual health (Jurin, 2012).

Additionally, subjective well-being (SWB), also called life satisfaction, embraces concepts such as happiness, self-actualization, optimism, vitality, self-acceptance, a purpose driven-life, optimal functioning, and life satisfaction (Carruthers & Hood, 2004). The term happiness is most often referred to when ordinary individuals are asked to assess their overall well-being (Shin, 2015). According to research, happiness is a good measure of subjective well-being and in fact, if one needs to choose a single measure of subjective well-being, happiness would be likely a candidate (Csikszentmihalyi & Wong, 2014).

The conceptual framework (see Figure 1 Appendix E) guiding the study suggest that there is an overlap in the perception of happiness and well-being, and the two constructs are not mutually exclusive. The literature does not clearly distinguish between happiness and well-being. Therefore, this study identified items from commonly used instruments designed to measure happiness and well-being that load on both constructs. More specifically, our goal was to isolate items that sufficiently load on both of the latent variables simultaneously. The research questions are as follows:

- Do items designed to measure happiness also measure well-being and vice versa?
Do items specifically measures happiness or well-being?

To examine the intersectionality of happiness and well-being, items from two reliable instruments were chosen to measure the construct of happiness and well-being:

First, the compact scale of the Oxford Happiness Questionnaire (OHQ) is derived from the 29-item Oxford Happiness Inventory (OHI). Both the OHI and the OHQ have alpha coefficients of .92 and .91 respectively and the scales consistently yield similar results. The internal consistency of the items comparatively on both instruments were significantly related (P<0.001) (Hills & Argyle, 2002). Their questionnaire utilizes one sentence statements measured on a six-point Likert scale.

Second, the well-being component of the study utilized items from the Well-Being Questionnaire (W-BQ12) (Riazi et al., 2006). The W-BQ12 is a short version of the Bradley and Lewis, 1990, instrument designed to measure well-being and treatment satisfaction of patients (n = 140) with Type 2 diabetes. The instrument consisted of three subscales one of which specifically measured psychological well-being. Items utilized in this subscale obtained an alpha coefficient of 0.88. Much like the work of Salsman et al., (2014), this study explored the potential overlap of well-being and happiness.

Methods

Instrument Used

Well-Being scale. Riazi, et al. (2006) administered the short form of the W-BQ12 to 550 patients and discovered that the 12-item survey was a reliable instrument to measure depression, anxiety, and positive well-being of diabetes patients. This scale was derived from a previous version developed for by Bradley and Lewis 1990 to measure well-being and treatment satisfaction of patients (n =140) with Type 2 diabetes. This instrument consisted of three subscales of which one was utilized to specifically measure psychological well-being. Items utilized in this subscale obtained a coefficient alpha of 0.88.

Happiness Scale. In 2002, Hills and Argyle developed an updated 29-item OHQ and was considered as “an improved instrument” to measure subjective well-being as compared to the 20-item OHI developed by Argyle, Martin & Crossland in 1989. This OHQ utilizes one sentence statements measured on a six-point Likert scale. This scale was tested among 172 undergraduate students and demonstrated that the OHQ had high scale reliability with coefficient alpha of 0.92.

Study Participants

The pilot study utilized convenience sampling of 28 college students enrolled at a Midwestern University in a leisure studies course as part of their degree requirements. This cohort of participants were easily accessible and this sampling strategy was cost-effective. Participants were asked to complete the questionnaire that consisted of items from both well-being and happiness surveys. The majority of the class were undergraduates and the remainder comprised of graduate students. Participation was voluntary and the students were not given any incentive or extra credit to fill out the questionnaire.

Survey Questionnaire

Both well-being and happiness questionnaires were combined to comprise a pool of questions consisting of 42 items. The surveys were chosen based on their validation and documented reliability. In an effort to observe whether or not
there was intersectionality, items were integrated from both instruments into one. The limited number of items ultimately used, and the use of reverse-coded questions were employed to minimize response bias. Biases can adversely affect the validity and reliability of an instrument. Response bias such as acquiescence can occur when subjects agree or disagree with the questions in the absence of what the question is asking (Furr & Bacharach, 2008). Negatively worded versions of some of the survey items can help identify and alleviate this type of response bias. Another form of response bias is extreme and moderate response bias. Individuals who tend to choose responses in the middle range regardless of the item’s content may be exhibiting this type of bias. The opposite is true of individuals that tend to respond toward one end or the other of a scale (Furr & Bacharach, 2008). To minimize respondent fatigue and thus careless and random responses, the length of the questionnaire was intentionally limited in the number of items included. In general, a shorter survey is desirable because it burdens the respondents to a lesser degree (DeVellis, 2012). From the pool of 42 questions, 10 items were randomly selected (see Table 1 Appendix A). Questions selected were: (1) well-being (3 questions); (2) happiness (3 questions); (3) well-being reversed coded (2 questions); and (4) happiness reverse coded (2 questions). The items were administered using a six-point Likert scale ranging from: (1) strongly disagree; (2) moderately disagree; (3) slightly disagree; (4) slightly agree; (5) moderately agree; and (6) strongly agree. This instrument yielded alpha coefficient $\alpha_{(27)} = 0.835$ suggesting sufficient reliability.

**Analysis**

The statistical analysis was performed from the data collected. IBM SPSS Statistics version 23 software was used to find Cronbach’s alpha and Factor Analysis. In addition, descriptive statistics for each question was performed using the same software.

**Results and Discussion**

**Reliability Test**

Using SPSS statistical software, the reliability test was performed to find if the scale that was used for this pilot project was consistent and reliable. The result indicated that the instrument used in this pilot project is reliable with a Cronbach’s Alpha of $\alpha_{(27)} = 0.835$ (see Table 2 Appendix B). The inter-item correlation for this questionnaire ranged from 0.040 to 0.806 with mean 0.378. The observed maximum inter-item correlation (0.806) indicated that each item measured the constructs i.e. happiness and well-being.

**Factor Analysis**

The factor analysis was performed to identify the degree of variability on each of the variables, factors, or items. This pilot study contains two sets of factors; happiness and well-being. This analysis primarily indicates that the happiness variable loaded on happiness factor and well-being variable on the well-being factor. In addition, this study revealed items that loaded on both factors. If some variables loaded on both, then there is an intersectionality between two factors; happiness and well-being.

**Kaiser-Meyer-Olkin (KMO) measure and Bartlett’s test.** The KMO and Bartlett’s test was performed to indicate if the sample size used for this study was adequate. The analysis indicated the KMO value of 0.659 (see Table 3 Appendix C) showing that the sample was adequately taken. The minimum value of this test is 0.5 and below this point it is considered that the sample taken is not acceptable for analysis. In addition, the Bartlett’s test with a significance level of <0.001 indicated that there are correlations between the data set and that the survey variables are appropriate for
factor analysis.

**Scree Plot.** Another tool utilized for factor analysis is the scree plot. The scree plot helps to determine the number of factors to be considered for analysis. Eigen values of less than 1.0 were not considered to be viable sub-dimensions. As a result, it was determined from the plot that there were two factors with Eigen values greater than 1.0 that accounted for 55.43% of total variance (see Figure 2 Appendix F). Therefore, the two factors that accounted for values greater than 1.0 were happiness and well-being.

**Factor matrix.** Two factors, happiness and well-being were considered for analysis. Values greater than 0.30 occurring in the matrix were used to determine if a given item loaded on one factor or another. The analysis indicated that three of the ten items, loaded on both factors (see Table 4 Appendix D). Question 3 “I do not think that the world is a good place” and Question 6 “Life is good” are happiness questions, however they loaded on both factors. Question 8 “My life is pretty full” is a well-being question but it also loaded on both factors. Therefore, overlapping of these three items in factor analysis suggests intersectionality between happiness and well-being.

Question 5 “I have felt I could easily handle or cope with any serious problem or major change in my life” is a well-being question and yet it loaded only as happiness variable (0.627). On the other hand, Question 9 “I feel that I am not specially in control of my life” is a happiness question, but it loaded only on well-being (0.919). Therefore, the result again suggests that the items designed to measure one factor may measure the other and vice versa.

**Conclusion and Future Implications**

This small-scale pilot study measured intersectionality between happiness and well-being. This questionnaire used items from previously developed and reliable happiness and well-being surveys which were combined together to make a “Happy-being” questionnaire. Each item from the previous surveys were randomly selected and pooled together to make final ten item questionnaire with six-point Likert scale ranging from 1-“**Strongly Disagree**” to 6- “**Strongly Agree.**” After surveying 28 students in a Midwestern University, the study found that the instrument used was reliable with coefficient alpha value of \( \alpha(27) = 0.835 \).

The factor analysis also found that three items in this instrument loaded on both factors i.e. happiness and well-being showing intersectionality between them.

In this type of study, there are limitations and three were identified. First, the sample size was relatively small which limits the generalizability of the study. However, it did meet the requirements for the KMO Bartlett test. Second, the sample was not reflective of the campus population of students and it was not stratified to control for variables such as gender, race, socioeconomic status etc. Third, the group of students were homogenous sampling of leisure studies class.

Because of this study, we were also able to identify those items that load on both well-being and happiness despite the items being identified as solely happiness or well-being measurements. Therefore, the pilot study revealed the ambiguity of the constructs of happiness and well-being. It is promising that certain items designed to measure a particular construct did in fact load only on that construct. However, some items that were designed to measure a specific construct did not measure that particular construct. For example Question 5 was supposed to measure well-being but in fact it measured only happiness. For exam-
ple, the literature suggest that happiness entail life satisfaction, positive affect, and well-being (Carruthers & Hood, 2004; Diener, 1984; Lyubomirsky & Layous, 2013; Myers, 2000; Shin, 2015; Singh, 2014). Whereas the literature also suggest that well-being is a sense of life satisfaction, contentment, happiness, good health, positive emotions and cognition, and a sense of purpose (Carruthers & Hood, 2004; Diener, 2000; Sundriyal & Kumar, 2014; Watkins, Woodward, Stone, & Kolts, 2003). Therefore, the results from this study reveals the overlap in the perception of these constructs.

Limited research has explored the intersectionality of happiness and well-being. Further exploration of the intersectionality of happiness and well-being may enable researcher to isolate items that measure either happiness or well-being.

References
Salsman, J. M., Lai, J. S., Hendrie, H. C., Butt, Z.,


### Appendix A

#### Table 1. Happy-Being Survey

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>I feel downhearted and blue</td>
<td>WR</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q2</td>
<td>I feel nervous and anxious</td>
<td>WR</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q3</td>
<td>I do not think that the world is a good place</td>
<td>HR</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q4</td>
<td>I am very happy</td>
<td>H</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q5</td>
<td>I have felt I could easily handle or cope with any serious problem or major change in my life</td>
<td>W</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q6</td>
<td>Life is good</td>
<td>H</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q7</td>
<td>I feel that life is very rewarding</td>
<td>H</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q8</td>
<td>My life is pretty full</td>
<td>W</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q9</td>
<td>I feel that I am not especially in control of my life</td>
<td>HR</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Q10</td>
<td>I feel that I am useful and needed</td>
<td>W</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: W=Well-being; WR=Well-being (Reversed coded); H=Happiness; HR= Happiness (Reversed Coded)
Appendix B

Table 2. Cronbach’s Alpha Value

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.835</td>
<td>.858</td>
<td>10</td>
</tr>
</tbody>
</table>
## Appendix C

**Table 3.** KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th>KMO and Bartlett’s Test</th>
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<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of</td>
<td>.659</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>140.907</td>
</tr>
<tr>
<td>df</td>
<td>45</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>
### Table 4. Factor Matrix

<table>
<thead>
<tr>
<th>Factor</th>
<th>1 (Happiness)</th>
<th>2 (Well-being)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4</td>
<td>.999</td>
<td></td>
</tr>
<tr>
<td>Q5</td>
<td>.627</td>
<td></td>
</tr>
<tr>
<td>Q7</td>
<td>.557</td>
<td></td>
</tr>
<tr>
<td>Q9</td>
<td></td>
<td>.919</td>
</tr>
<tr>
<td>Q10</td>
<td></td>
<td>.790</td>
</tr>
<tr>
<td>Q6</td>
<td>.313</td>
<td>.780</td>
</tr>
<tr>
<td>Q2</td>
<td></td>
<td>.708</td>
</tr>
<tr>
<td>Q3</td>
<td>.324</td>
<td>.518</td>
</tr>
<tr>
<td>Q8</td>
<td>.408</td>
<td>.413</td>
</tr>
<tr>
<td>Q1</td>
<td></td>
<td>.411</td>
</tr>
</tbody>
</table>

Extraction Method: Maximum Likelihood.

a. 2 factors extracted. 6 iterations required.
Appendix E

Figure 1. Conceptual Framework of Intersectionality of Happiness and Well-Being

Appendix F

Figure 2. Scree Plot showing Eigenvalue
Illuminare: 
A Student Journal in 
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Outward Bound Veterans Programs: Opportunities for 
Heart Rate Variability Training

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Outward Bound Veterans Programs: Opportunities for Heart Rate Variability Training

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Abstract

Post-traumatic stress disorder (PTSD) is a stress-related disorder associated with trauma that may cause intense distress and physiological reactions for military veterans. One of the treatment options available, the Outward Bound Veterans (OBV), offers several outdoor courses designed for returning military. In addition to the course design heart rate variability (HRV), a measure of autonomic regulation, may be a useful tool for individuals to regain control of their stress responses. The purpose of this article is to outline a potential treatment approach utilizing HRV in the context of OBVP and other outdoor expeditionary programs.

Keywords: heart rate variability; Outward Bound; PTSD
Background

Post-traumatic Stress Disorder (PTSD) was first included in the American Psychiatric Association (APA) Diagnostic and Statistical Manual (DSM) in 1980 (Friedman, 2007). According to Friedman (2007), early in our understanding, diagnosis required an individual to have been through a historically significant stressor, such as war or natural disaster. More recently, PTSD has been moved from its early classification as a nostalgic condition to a new class of “trauma and stressor-related disorders (APA, 2013). The criterion for diagnosis includes (a) stressor, (b) intrusive recollection, (c) avoidant/numbing, (d) hyper-arousal, (e) duration, and (f) functional significance (APA, 2013). More specifically, symptoms may include dissociative flashbacks, intense distress, physiologic reactions, avoidance, reduced interest, detachment, disinterest, lack of foresight, and significant distress for individuals and their families (APA, 2013). PTSD may become chronic, with delayed onset and lifelong relapses (Friedman, 2007).

Heart rate variability (HRV) is a measure used to assess the autonomic nervous system (ANS) and an individual’s adaptive capabilities for coping with stress (Tan, Dao, Farmer, Sutherland, & Gevirtz, 2010). Individuals with PTSD may also show other physiological and cardiac signs, including increased heart rate (HR) and decreased parasympathetic activity (Hauschildt, Peters, Moritz, & Jelinek, 2011). In a recent study (Hauschildt et al., 2011), measured HR and HRV at rest and as a response to a variety of emotionally stimulating video clips, examining correlations between PTSD severity, dissociation, and depression. During baseline measures, HRV recordings were higher among individuals with PTSD and HRV decreased across conditions. In individuals who had been exposed to trauma, lower HRV was associated with higher state dissociation with depression being negatively correlated with HRV. The negative relationship between HR and HRV suggest a parasympathetic contribution on basal and tonic HR. Overall, PTSD severity was associated with lower baselines, which was consistent and somewhat rigid throughout the visual stimuli.

In a study assessing the viability of HRV biofeedback training as treatment for veterans with combat-related PTSD, baseline and treatment measurements were compared to assess physiological reactivity (Tan et al., 2011). HRV and breath rate measures were taken, with HRV being analyzed by averaging a five-minute period of the standard deviation of sequential interbeat intervals. Participants completed 30-minute sessions of HRV training with biofeedback in eight weekly sessions. Pre and post measures were taken with traditional PTSD measurement surveys. The results of the study indicated that HRV may be a useful tool for the reduction of PTSD symptoms. Additionally, the study had a high compliance and nine out of ten participants, when interviewed at the six month follow up, used breathing successfully to reduce their symptoms. Addressing the ANS dysfunction as a manifestation of PTSD may aid in recovery, symptom improvement, and reintegration. Additionally, biofeedback training, which helps individuals regulate and process emotional habits, may further aid in healthy engagement and provide a more synergistic treatment (Tan et al., 2011).

One of the programs designed to address PTSD in the returning military population is Outward Bound for Veterans (OBVP). Outward Bound (OB) had its first PTSD veterans program after partnering with the Veterans Administration (VA) Medical Center PTSD Unit in 1983 (Rheault, 1987, as cited in Attarian & Gault, 1992). Other programs have been developed and are now offered free of charge through a donation program.
with several Outward Bound schools (www.outwardbound.org). Several courses are specifically designed for returning military, with purposive tasks. For example, immersive courses utilize nature, teamwork, and challenge-based activities to address the challenges veterans with PTSD are facing (Ewert, Frankel, van Puymbroeck, & Luo, 2010). Adventure education experiences tend to move an individual’s locus-of-control in an internal direction, giving the participant strength and confidence to work to improve their own situations (Hans, 2000). These experiences have previously revealed to have additional lasting effects at follow up than traditional education models (Hattie, Marsh, Neill, & Richards, 1997). Research on OB programs provides evidence of their ability to impact individuals coping with PTSD.

The five-day model for Vietnam veterans was a bridging program between two phases of treatment at the VA. Participants are admitted as a cohort to the OB program, and given introduction and an orientation before the experience (Attarian & Gault, 1992). The course begins with gear hand out and some skill training, as well as framing the course to address fears common to individuals with PTSD. Activities are designed incrementally to build trust, involvement, fun, and success as each learning experience applies to the next. After introductory activities and allowing time for group bonding, a two-day expedition allows participants opportunities to learn new skills, resolve interpersonal conflict, and engage in activities designed to bring up similar war experiences (Rheault, 1987, as cited in Attarian & Gault, 1992). Activities are mixed with time for discussion among the group members, and nightly conversations help increase transference. Activities are designed with relevance to everyday obstacles that may provide new, concrete insights (Attarian & Gault, 1992). For instance, a rock-climbing element builds trust and responsibility, a high ropes obstacle bolsters feelings of success and accomplishment, and the overall trip provides a high point and personal affirmation. OB trips conclude with a graduation, where participants may remove self-imposed isolation. Participants award diplomas to each other, and patches are given with reflection on how it was earned, and what it means to the participant. The OBV trips have built trust, opened individuals up to treatment, and enforced accountability with a spirit that remains after the course is completed (Attarian & Gault, 1992).

Evaluations of these multi-day trips indicate that they may help veterans develop confidence, feelings of physical and emotional safety, feelings of success, and knowledge (Ewert et al., 2010). Veterans reported less growth in other areas, measured on the Outward Bound Outcomes Instrument, presumably because they already possess leadership, respect, responsibility, and teamwork skills. The approximation of outdoor occurrences to everyday stressors and problems, paired with intentional reflection and trained facilitation, may provide an ideal mix as an intervention for returning veterans (Ewert et al., 2010).

Other studies have shown less impressive results. In one study, the greatest predictor of change after an OB program was the participants’ home VA center. (Hyer, Boyd, Scurfield, Smith, & Burke, 1996). The study, however, does not describe the level of veteran specific programing of other studies and did not include any war-trauma processing. The course described in the study was more typical of OB standardized experiences and did not include specific components aimed at addressing veterans’ unique typology and program needs. Program participation did not show measurable changes, but future studies should look at the components of change and the effectiveness of
leaders on this type of intervention experience. However, despite not showing improvement in PTSD may have been related to severity of chronic symptomatology or other factors. Participants reported that they enjoyed life again, and overcame negative emotions to gain self-control and positive self-concept. OB program methodology may need adjusted for future success with veteran and PTSD programs (Hyer et al., 1996).

Another advantage to OB programs lies in grounding, where our direct contact with the ground moves our body’s electrical potential in a favorable electrophysiological direction. Chevalier and Sinatra (2011) utilized transcutaneous electrical nerve stimulation patches on the palms and feet of participants to ground them through a steel rod in the earth. Using participants as the control, two hours of HRV data was recorded in each session. Forty minutes into each session a switch was flipped, grounding the treatment group through their cables. Standard measurements were recorded, which showed an increase in high frequency (HF) for 33% and 65% for the non-grounded and grounded groups respectively at the end of the “grounding” treatment respectively. This may suggest vagal variability which reversed when un-grounded. Low frequency (LF) increased by 28% and 68% for the ungrounded and grounded respectively. Standard deviation of R-R peak intervals (SDRR) increased by 20% and 50 % for ungrounded and grounded groups. There was no change in LF/HF ratio. This improved balance in the ANS may aid in conventional treatment and improve clinical responses. These treatment protocols may be well suited as measurement for the effectiveness of OBV and future research in the effectiveness of OB programs for PTSD may show mutual benefit.

Proposed Method

In establishing a protocol, it may be beneficial to modify the existing OBV practices to incorporate intentional HRV training for individuals coping with PTSD. Prior to participating in an OBV program, participants should begin training with biofeedback and HRV. This may increase any gains the participant experiences during the OBV experience by allowing them to learn and be familiar with the HRV equipment prior to the outdoor trip, helping to better utilize the natural setting. The small unit also flexibility and is a minimal technological distraction on the trip. Once participants are familiar with the HRV training, it becomes a tool they may utilize on the OBV expedition or during any stressful situation. Participants should increase their ability to relax while they train, develop a better idea of how their bodies react to stress, and have opportunities to track HRV during stressful times to track personal improvement.

A cohort should be screened for selection and readiness to participate in an OBVP experience, as OB programming provides physical and emotional stressors and not everyone will do well in the outdoor setting. Phase one of the treatment should utilize existing VA treatment, with an added component of bi-weekly HRV training on personal devices (see Figure 1 Appendix A). Due to its compact and portable size, a HeartMath Inner Balance or emWave2 Sensor may be ideal. The sensors connect to a phone or independent device and provide users with a breath pacer and indication of how they are impacting their nervous system. Participants should be adequately prepared to engage in the OB experience and familiar with HRV training before the trip begins.

During the OBV program, participants should be instructed to find a quiet spot alone in
nature and train for 20 minutes on their personal HRV device. This will become a regular part of habit around camp, and may be incorporated into camp set up and break down habits. Such that individuals train before they break camp for the day and after set up in the evening. This will change the time of day, but leave activity levels relatively constant with two regular training sessions each day.

HRV biofeedback devices should be kept available throughout the day, so that when stressful situations arise individuals can retrieve the device and practice biofeedback, noting the stressor to increase learning. Utilizing the biofeedback in this way should allow participants opportunities to visualize the physiological impact of their stress, as well as walk through it with the OB facilitators. This technique may also be utilized in evening discussions and provide more material for discussion as well as training.

As part of the OB model, participants may be asked to overcome several challenges such as sailing a ship for the purpose of group building, communication, and teamwork. HRV tests should be taken following these challenges on the first full-day and last full-day of the trip for comparison. This may be valuable information to measure and understand how individuals’ nervous systems are reacting when they attempt to compensate for stressors, and may provide a key example to demonstrate to participants how they have improved over the course of the week.

After the trip, participants will return to their VA program to continue with other treatment methods, and should continue practicing HRV training and applying the techniques they’ve learned about self-monitoring and regulation. The next phase of the VA program should check back on HRV progress, provide answers to any questions, and further encourage regular training programs.

**Expected Outcomes**

Previous research suggests the need for more information on how HRV of individuals with PTSD may improve over time. The previous OB data presented reveals various improvements, but is limited in scope to a fairly short time period. Projected outcomes include an increase in compliance due to increased understanding and success with the feedback device. Over the three phases of training, including VA programs before, during, and after the OB experience, participants should increase their HRV and lower their BP, increasing vagal tone and responsiveness. Individuals will also gain a greater understanding of their physiological responses to stress. From the OB experience, participants may gain self-confidence, communication, teamwork, and renewed trust that may shorten overall treatment time. Participants will also gain a sense of coherence, healthy and balanced life, and ability to set and reach new goals (Outward Bound, 2017).

**Discussion**

While there is a considerable amount of attention given to returning veterans and the treatment of PTSD, outdoor programs and HRV training hold applicability in a wide variety of settings. An individual’s ability to recover from stress helps with lifelong recovery and wellness. Veterans, with particularly common and overwhelming stress reactions, must be taught a variety of techniques in addition to biofeedback for the greatest success. Furthermore, through consistent training, participants will be more prepared and better able to learn from the experiences of an OB expedition. Training must be started before, and continued after a trip for the greatest effect. Consistent training with biofeedback may not only help an individual
control their stress response, but increase their autonomic nervous systems balance, increase vagal tone, and help them feel more in control of a situation. The combined benefits of OBV and HRV training reaches beyond the social and emotional benefits of a trip to help participants understand and improve their bodies physiological reaction to stress, gaining control over their PTSD.

References


Appendix A

**Figure 1.** Process of integrating OBV with HRV training

- **VA Treatment**
  - HRV Biofeedback instruction
  - Assigned HRV equipment
  - 20 minutes
  - Twice a week

- **OBV Program**
  - HRV equipment is easily accessible
  - HRV training
  - 20 minutes
  - Twice a day
  - Morning and evening
  - Utilize HRV biofeedback during stressors
  - Note stressors

- **Post OBV discussion of HRV progress**
  - Continue HRV training daily and as needed
  - Review and discuss HRV readings from OBV trip
Globalisation Gangnam-style: The domination of Gangnam-style in touristic online representations

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Globalisation Gangnam-style: The domination of Gangnam-style in touristic online representations

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Abstract

This article presents cultural globalisation as a highly uneven and selective process, seeing that the exact nature of this “selectivity” of which cultural elements become globalised has not been intensively studied yet. In the case of online representations of places for the purpose of attracting tourists, certain place-schemata are selected to represent the destination and become globalised, while others are left behind. This study set out to analyze what global processes have allowed the Gangnam-style representation of the Gangnam district in Seoul to dominate its touristic online representation, while traditional heritage of the district which includes a UNESCO heritage site has become subsumed in terms of importance for representing the district online. The article draws on scholars of cultural globalisation such as Appadurai (1990), Harvey (1990) and Ritzer (2002) as well as empirical findings around Gangnam-style and the Gangnam district to analyze these processes of selective globalisation. We found that Gangnam-style becomes easily globalised through its fluid nature, being able to freely move through space and time, as well as being largely devoid of distinct content, which renders it more feasible for purposes of globalisation in this period of the globalisation of nothing. Gangnam-style also represents a certain a lifestyle that fits well into global consumer culture, as it promotes consumption and can easily become commoditized. Because traditional heritage on the other hand still travels “slowly” through time and space and is full of distinct local meanings and less easily commoditized, it is a less feasible place-scheme for representing Gangnam online to tourists. We discuss the implication of this drawing on the theory of the Tourist Gaze 3.0, as well as how the findings relate to authenticity and intra-Asian travel.

Keywords: cultural globalisation; online representations; Gangnam-style; heritage; lifestyle; commodification.
The relations between tourism and globalisation have been examined by numerous tourism scholars, whereat a focus has often been set on cultural dimensions of increasing global interconnectedness and flows of information and materials (Cohen & Cohen, 2015; Meethan, 2003; Nijman, 1999; Rowe, 2006). Scholars have also emphasized a tight relation between communication technologies and the movements of cultural elements (Nijman, 1999, p. 148; Sheller & Urry, 2006). The usage of communication technologies is of significant importance for the tourism industry, as the online representations of destinations serve to create unique place-identities and to attract as many tourists as possible (Morgan, Pritchard & Piggott, 2002, p. 286). These online representations of destinations typically consist of a number of stereotyped or simplified aspects of a place or culture and create an individual profile of a destination, resulting in specific expectations of tourists (Kim & Chen, 2015, p. 155). Such stereotyped aspects of place and culture are called “place schemata” (Kim & Chen, p. 157), which “consist of physical, social, cultural and structural information along with purposive and affective attachment of place” (p. 157). In other words, some simplistic views of a place and its inhabiting people are selected and assembled by tour operators in order to establish a particular online representation of a place for the purpose of tourism advertisements.

The South-Korean capital Seoul has experienced increasing tourist arrivals in the last decade, with tourist arrivals reaching an all-time high in August 2014 (Visit Seoul, 2013; Korea Tourism Organisation, 2016). This increase in tourist arrivals occurred shortly after the release of the song “Gangnam-style” from the pop-artist Psy, a name that refers to the Gangnam district of Seoul. With over 2.5 billion views on YouTube, Psy’s pop-song can be considered a global social media sensation. The increase in tourist arrivals shortly after the publication of the song suggests a relationship between the increasing international popularity of Gangnam due to media representations and the growing interest of tourists travelling to South Korea (Visit Seoul, 2015). The Gangnam district that the song refers to is considered ultra-modern, with its shopping and entertainment areas as main attractions for residents and tourists. Psy’s pop song has become a flagship example for the emerging lifestyle and culture of Seoul’s young population as well as the rapid growth in popularity of Korean pop culture (Park, 2015). Following the global success of Gangnam-style, the city of Seoul has taken many initiatives to capitalize on this success and promote tourism using the Gangnam-style representation of the district. Examples for this are the creation of a tourism police force entirely dressed in Gangnam-style uniforms (Cripps, 2013) and the plan to build a statue honoring Psy’s iconic “horse dance” (BBC, 2015). In this BBC news report, Gangnam tourism director Park Hee-Soo is quoted, saying that “tourists can take pictures under the statue and the song will play automatically when you stand there” (BBC, 2015). This illustrates the importance of Gangnam-style to the strategy of the tourism director to promote tourism in the district. In this way, tourists are led to focus more on the Gangnam-style representation of the Gangnam district and Seoul at large, while mostly disregarding the cultural heritage sites that are also present. In other words, Gangnam-style has come to dominate the online representations of the district (Cripps, 2013; Richmond, 2012; Visit Seoul, 2013).

The Lonely Planet describes the district of Gangnam as “associated with expensive real estate and upmarket shopping and partying in chic neighborhoods such as Apgujeong and Cheongdam” (Richmond, 2012). This was not always the case, as Gangnam was considered the least devel-
oped district of the city before the 1970s (Seung-hye & Park Eun-jee, 2012). The district also holds significant heritage sites such as the Samneung Park and Bongeunsa temple. Heritage, particularly built heritage, forms an important reason for tourists to visit a location and is often used to market locations (Yang, Lin & Han, 2010). According to Nuryanti (1996) “heritage tourism offers opportunities to portray the past in the present. It provides an infinite time and space in which the past can be experienced through the prism of the endless possibilities of interpretation” (p. 250). It is generally believed that UNESCO heritage sites in particular are a panacea to increase tourist arrivals at a destination (Yang, Lin & Han, 2010).

In more recent years, scholars in the field have seen a need to focus their efforts on the mutual impacts of globalisation and heritage tourism, noting for instance the impact of the ever increasing spread of free-market capitalist globalisation on the marketing and experience of local heritage, both built and intangible (Park, 2014). These interrelations between globalisation and tourism can hardly be overstated. In the words of McGrew (1992, p. 63 as cited in Park, 2014, p. 122): “In a shrinking world, where transnational relations, networks, activities and interconnections of all kinds transcend national boundaries, it is increasingly difficult to ‘understand local or national destinies,’ without reference to global forces.”

This article aims to contribute to our understanding of the global processes involved in selecting some and disregarding other elements of a local culture for global touristic representations, thereby adding to our understanding of the mutual ways in which globalisation and tourism influence each other to renegotiate global and local culture. To this end, the main research question of this article is “what global processes have allowed the Gangnam-style representation of the Gangnam district to dominate its touristic online representation, while traditional heritage of the district has become subsumed in terms of importance for representing the district online?”

**Backgrounds of the Article**

The following paragraphs will outline the conceptual backgrounds of this article. First, contemporary notions of popular culture and the Gangnam lifestyle will be presented. Second, the uneven and selective character of cultural globalisation will be identified by reviewing major globalisation theories. Third, the concept of “lifestyle” will be examined, and its relation to cultural globalisation will be analyzed. This sets ground for the further study of the selective nature of cultural globalisation using the example of Gangnam heritage and Gangnam-style.

**Popular culture and Gangnam lifestyle**

Psy’s “Gangnam-style” is a good example of what can be characterized as “popular culture” which is conceptualized as “mass culture” from the people, for the people by Williams (1983, in Storey, 2009). Popular culture is often perceived as a Western phenomenon, however Asian popular culture experienced an immense growth in recognition since the 1990s. In South Korea, this new emerging form of culture is termed hallyu or K-pop, and plays a significant role for the self-understanding of the younger Korean generations (Jin & Yoon, 2014). Although originally regarded solely as an intra-Asian sociocultural phenomenon, K-pop also experiences success outside of Asia. Recently, a “New Korean wave” has been identified and termed Hallyu 2.0, as it is characterized by “the significant role of social media in media production and consumption,” the “penetration [...] in the Western markets” and “its global reach” (Jin & Yoon, 2014, p. 2). Using this description, Gangnam-style can be seen as a quintessential example
The name of the song, “Gangnam-style” refers to the lifestyle that is commonly associated with the Gangnam-district, namely one of wealth, status, consumerism, partying and drinking expensive coffee (Fischer, 2012). In the English translation of the lyrics it becomes clear that Psy describes a typical “Gangnam girl” as “a classy girl who know how to enjoy the freedom of a cup of coffee. A girl whose heart gets hotter when night comes” and himself as the perfect guy for this type of girl (Acuna, 2012). Gangnam-style can be seen as a lifestyle culture in accordance with Hallyu 2.0, which generally popularizes consumerist culture in Korea (Shim, 2006). The notion of lifestyles is becoming increasingly important for self-identity construction (Peters, 2010), so Gangnam lifestyle as part of Hallyu 2.0 popular culture is an element of the construction of collective identity in Seoul. To illustrate this collective identity of the Gangnam district to tourists, the emerging lifestyle of its popular culture is used within online representations of Gangnam. In this article, “Gangnam-style” is used both to refer to the song by Psy, and the lifestyle of Gangnam it represents.

The Uneven Nature of Cultural Globalisation

The study of cultural globalisation has been concerned with the increased mobility of cultural elements across time and space and the intensified interconnectedness between all aspects of social life worldwide (Meethan, 2003, p. 11). In this section, we will illustrate the uneven and selective character of cultural globalisation in order to establish a framework for the understanding of a globalised online representation of the Gangnam lifestyle.

Harvey (1990) examined the social construction of the notion of time and space in today’s globalising world. He suggests that the on-going social and technological innovations have “generated repeated rounds of change in the fabric of time and space” (Warf, 2011, p. 145) and accelerated the movements of capital, culture, information, materials and people. Harvey describes “the general speed-up and acceleration of turnover time of” (Harvey, 1990, p. 418) culture, politics, capital and materials, and terms this phenomenon “time-space compression” or the “annihilation of space by time” (p. 418). Cultural knowledge about places is hereby unfixed in spatial and temporal contexts and can traverse boundaries to become a globalised aspect of international social reality. Especially intangible cultural elements such as music, dance or literature are highly mobile in combination with the growing importance of communication technologies, and therefore have a high capacity of traversing traditionally restricting boundaries of space and time. Harvey states that human geographers are increasingly concerned with “the whole conundrum of the changing experience of space and time in social life and social reproduction” (Harvey, 1990, p. 432) and therefore establishes a relationship between the time-space compression and cultural constructions of meanings.

The cultural anthropologist Arjun Appadurai (1990) also sets a main focus on the cultural dimensions of globalisation and further identifies a strong relationship between the acceleration of culture through media and technological innovations. He relies on the concept of de-territorialisation regarding the establishment of collective identities of groups and questions the traditional idea that the formation of culture and identity is shaped by geographical borders or the nation state. Moreover, he infers that “people and ideas are continuously flowing and coming into contact with each other around the globe” (Ampuja, 2011, p. 291) and establishes media and communication technologies as one of the central constituents of a collective
cultural identity (p.291). He conceptualises this phenomenon with the term “mediascapes” which delineate the global distribution of information, movements of cultural elements and the shaping of images of the world through a global media network (Appadurai, 1990; Jin & Yoon, 2014). The global movement of culture and its implications on geographical imagination of people through global media hereby appears as a major motive in cultural globalisation theory (Appadurai, 1990).

Robertson (2001) and Ritzer and Ryan (2002) identify two opposite movements of globalism and localism, therefore reintroducing the importance of spatial aspects for globalisation, and termed this dual process “glocalisation” (Nijman, 1999, p. 150). “Globalisation may simultaneously lead to dilution of local culture [...] and to a deepening of particularity” (p. 150), so cultural elements of a place can be strengthened and carried out into global social reality on one hand. On the other hand, aspects can be “left behind” and be in danger of fading into oblivion. Hereby, Ritzer makes a clear distinction of cultural forms which are loaded with content and those which are “empty forms that are centrally conceived and controlled and relatively devoid of distinctive content” (Ritzer & Ryan, 2002, n.p.). The authors conceptualise elements which are “lacking in distinctive substance,” illustrate “no local ties,” are “timeless,” “generic” and “dehumanised” (Ritzer & Ryan, 2002, n.p) as “nothing,” and establish an “elective affinity” (Ritzer & Ryan, 2002, n.p) between globalisation and “nothing.” Hereby, “the basic argument is that globalisation is bringing with it the worldwide spread of nothingness” (Ritzer & Ryan, 2002, n.p). This illustrates that globalisation is an uneven process in which only specific cultural forms, mainly those lacking distinctive content, become accelerated through space and time to become a part of a global reality.

On the other hand, cultural elements with characteristic local and temporal content are “likely to be rejected by at least some cultures and societies because the content is more likely to conflict with [other] local content” (Ritzer & Ryan, 2002, n.p.) and is therefore not as easily globalised.

Harvey’s compression of space and time, Appadurai’s mediascapes as the transmitter and building block of collective cultural identities, and Ritzer’s globalisation of nothing suggest that there is an uneven and selective nature of cultural globalisation. While certain cultural elements are “accelerated in space and time” and become part of the global geographical imagination of a place, other cultural aspects are not picked up by globalisation movements and therefore never become part of this geographical imagination about place. The following will give some examples of cultural elements that appear to exceed traditional spatiotemporal boundaries easily, and others that seem to be more closely linked to spatiotemporal contexts.

**The Growing Importance of “Lifestyle” and Its Feasibility for Globalisation**

Social identities are increasingly established through lifestyle and consumption patterns (Peters, 2010), so the emerging popular culture related lifestyle of Gangnam can be seen as an important aspect of identity construction in Seoul. The following paragraph defines the concept of “lifestyle” as it is used for the purpose of this article, and establishes a relation between lifestyle and cultural globalisation.

Lifestyles “comprise clusters of everyday practices that are situated in various arenas of consumption and are arranged in relatively consistent and coherent ways” and “work as means to organize a sense of personal identity and self-expression” (Giddens, 1991 in Dobering & Stagl, 2015, p. 452). Consumption patterns therefore be-
come a main aspect of how individuals construct their self-identity, self-understanding and further express their “selves” (Waters, 1995, p. 140). Lifestyles therefore aid the construction of a “personally meaningful identity in the context of a collective identity” (Haenfler et al., 2012, p. 5). These consumption lifestyles, like for example vegetarianism, “green” lifestyles and even the emerging Gangnam lifestyle can be acted out by individuals all over the world and only seldom rely on a specific temporal or local context. The creation of a community of meaning (Cohen, 1985 in Haenfler et al., 2012, p. 4) that people identify with is of crucial importance, rather than the identification through mere geographical borders or a period of time (Haenfler, 2012). Of course, spatial and temporal frames are not inherently excluded in the construction of such lifestyle movements, but they play minor roles for the establishment of a coherent lifestyle. In the case of Gangnam-style, the main points of coherence constitute economic wealth, high social status, consumerism and partying (Fischer, 2012), while the specific context of life in Gangnam plays a secondary role.

Even though lifestyles are often part of a modern trend or social movement, they are often not specifically dependent on a temporal frame and can become part of social identity construction in any era, age or generation. Rather than being unique, lifestyles can also be regarded as what Ritzer calls “generic” (Ritzer & Ryan, 2002). The rich and chic consumption lifestyle of the prominent population of Silicon Valley could, in its essence, be related for example to Gangnam-style or “the Rich and Famous” in Dubai. Certainly, these lifestyle movements do involve individual contexts of the areas and eras they emerged in and are not identical, however the essence of a capitalist consumerist culture is comparable within the three-lifestyle phenomena. In the following, Gangnam-style as a lifestyle will be analyzed regarding its feasibility for globalising movements and its implications for touristic online representations.

Analyzing the Selective Process of Globalising Gangnam

In the following, the selective nature of cultural globalisation will be examined using the example of Gangnam heritage in contrast to the notion of Gangnam-style. First, the fluid nature of the Gangnam-style as opposed to the static nature of Gangnam heritage will be elucidated on using Castells’ theory of flows (2000) and Harvey’s theory of space-time compression (1990). Subsequently, Gangnam-style will be analyzed through the lens of the globalisation of nothing (Robertson, 2001; Ritzer & Ryan 2002). Third, the notion of global consumer culture (Waters, 1995) and lifestyle will be set into relation. At last, the global media will be presented as a new space for the representation of cultural images, which has led to an on-going production of imaginations of Gangnam amongst tourists.

The Fluid Nature of the Gangnam Lifestyle

There seems to be a difference between Gangnam-style and the traditional cultural heritage with regards to their ability to move through space and time, which leads to touristic online representations of Gangnam focusing on the lifestyle movement rather than built heritage. With his concept of the “network society,” in which “informational networks that shape social organizations and relationships of production, consumption, power and experience” (Ampuja, 2011, p. 287) are constantly changing, Castells stresses the importance of global flows of information and materials in globalisation processes. He emphasizes that these global flows “are enabled above all by the new […] media and communications technology” (Ampuja, 2011, p. 289), which he delineates as
“spaces of flows” (Castells, 2000).

In his work on geographical imagination, David Harvey describes the notions of time and space as socially and culturally constructed realities, which are hence also subject to social change such as the movement of globalisation. He suggests that recently, the movements of information and materials through space and time have been accelerated by technological and capitalist developments of a “space-time compression” (Harvey, 1990, p. 419). Time and space are hereby seen as constructs of social organization and reproduction, through which groups and individuals make sense of their social reality. Now, as Harvey describes technological innovations as one of the main drivers of space-time compression, and Castells describes the global media as a “space of flow” (Castells, 2000), the advantage of the emerging notion of Gangnam-style to the heritage sites becomes apparent. The song “Gangnam-style” as an artefact of popular culture has the capacity to be exhibited in social media, which facilitated a rapid spread of the new self-understanding of Seoul’s young population across a broad range of people all over the world. This ability to move through space and time through the global media as a space of flow renders the emerging lifestyle of the ultramodern city district a suitable element for a touristic online representation of Gangnam. Gangnam-style can therefore be described as a “fluid” cultural artefact, which has the ability to easily be picked up by spaces of flow and become globalised through online media representations.

The older, traditional and built heritage of the city district has hereby moved to the background in terms of touristic importance, as it was not part of the online representations and social media hype responsible for the influx of tourists to Gangnam. Due to its fixed spatial and temporal dimension and its relations to built sites and certain period of time in the past, Gangnam heritage still “travels” slowly through time and space and has not become part of the modern media portrayal of the district of Seoul. This shows that the way in which online representations Gangnam were constructed is majorly determined by the fluid nature of Gangnam-style, as it became part of spaces of flow of the media and compressed in space and time. Hereby, globalisation is exemplified as a selective and unequal process, because mainly technologically consumable matters are accelerated, while others such as built heritage appear to be more stable and fixed in space and time.

Gangnam-style and the Globalisation of Nothing

Robertson (2001) identified two closely related key topics in globalisation theory, namely that of homogeneity-heterogeneity and the global-local and of particular interest is how these two interrelate (Ritzer & Ryan, 2002). Cultural homogenisation refers to the dominance of the global over the local, leading to a globally homogenised culture, while cultural hybridisation or heterogenisation refers to the dominance of the local over the global, which leads to globally hybrid cultures with unique mixes of local and global elements. To what extent processes of cultural globalisation lead to either cultural homogenisation or cultural hybridisation is debatable, and likely the most balanced assessments includes both processes (Ritzer & Ryan, 2002). This interplay of cultural homogenisation and cultural hybridisation can also be identified in our case of the song “Gangnam-style.” Gangnam-style is characterized by a unique interplay of aspects of local Korean culture with well-known tropes of “western” global consumer culture, examples of which are discussed below. The argument here is that the cultural homogenous aspects of Gangnam-style, namely those that fit into global, largely Western popular culture, are
more visible and overpower the culturally hybrid and locally specific aspects. Using the theory of the globalisation of nothing, we argue that this dominance of images that are devoid of distinctive local content have allowed Gangnam-style to become globalised, while the dominance of locally specific and meaningful content makes it difficult for heritage sites to become globalised.

Although set in the specific context of the Gangnam district, the song and video of Gangnam-style very much feature images devoid of distinctive content, and therefore fit Ritzer’s and Ryan’s theory of the “globalisation of nothing” (2002). The video for instance focuses on scantily dressed women and material wealth, which is a very generic and often used concept in popular music videos (Sommers-Flanagan, Sommers-Flanagan & Davis, 1993), and the song features a few equally indistinctive lines in English, like “hey sexy lady” and “you know what I’m saying” while the rest is all in Korean. It is easy to see how these well-known tropes in global popular culture are not likely to be conflict with local cultures around the world, but rather easily become accepted as they are devoid of distinct content. In its form, Gangnam-style is not unique to the local culture of Korea and the same goes for the lifestyle it represents.

On the other hand, local heritage sites fall into the category of places that are rich in distinct meaning and content (Ritzer & Ryan, 2002, n.p.). Heritage sites are unique, full of local ties and relate to a specific period in time. Local heritage sites of the Gangnam district enjoy a long history of many centuries from being built, partly destroyed and repressed in following centuries and finally being restored and preserved again in later centuries. In order to fully understand their importance for the area and meaning in history, one has to get acquainted with local history and traditions. According to the theory of the globalisation of nothing, this makes them particularly difficult to become globalised and thus less likely to dominant the online representations of the district that are going to be attracting tourists.

**Lifestyle and Global Consumer Culture**

According to Kucukemiroglu, Kara, and Harcar (2005):

> Lifestyle is how one lives, it is the total image one has of him or herself which is a result of how one was socialized in his or her culture. It includes the products one buys, how one uses them, how one thinks about them and how one feels about them. (p.212)

As discussed earlier, Gangnam-style represents a consumer lifestyle thought to be common for the Gangnam district, namely one with an overt focus on material possessions, outer appearance, nightlife and coffee consumption (Fischer, 2012). This lifestyle fits into a global consumer culture, in which “consumption becomes the main form of self-expression and the chief source of identity” (Waters, 1995, p. 140).

This contemporary importance of consumption as a form of self-expression makes Gangnam-style a particularly attractive place-scheme for representing the district, and traditional heritage much less so. As material heritage can less easily be commoditised and consumed (Kockel & Craith, 2007), it can be argued that in highly developed consumer cultures, it has come to play a less significant role for the creation of a local identity and image. Gangnam-style as a celebration of global consumer culture on the other hand is a very appropriate place-scheme for representing the district online to tourists, as it is well equipped for processes of commercialisation, com-
modification and consumption. As one of the largest industries in the world, tourism is a fundamentally capitalistic undertaking, and there are a lot of incentives for destinations to get tourists to come to their location and spend as much money while on location as they can. This makes place-schemata that promote consumption as the core identity of the destination particularly attractive.

At the same time, global consumption culture has also affected heritage as scholars have identified efforts to commodify heritage. According to Baillie, Chatzoglou and Taha (2010) “heritage is increasingly subject to commodification” (p. 51). According to Goulding (2000), this commodification of heritage happens mostly in the context of museums and cultural heritage such as artefacts and costumes. Oftentimes, “only those images of history that have broad market appeal” are presented here in order to create an attractive narrative for visitors and tourists, while this leads to a simplification of the depiction of history as complexities are left out of the discourse (Goulding, 2000). However, regarding the built heritage of Seoul, the level of commodification seems low, as images of these sites do not play a major role in the online representations that are meant to stimulate the “consumption” of Gangnam as a destination by tourists. Similarly, the admission to the Bongeunsa Buddhist temple is free, and for Samneung Park roughly 85 eurocent for an adult (VisitKorea, n.d.; MyDestination, n.d.). This makes it less relevant to speak of the “consumption” of these heritage sites by tourists. All of this is not to say that the quest for authenticity is no longer relevant in tourism, and this problem is taken up in the discussion.

The Media, Tourists and the Production of Imaginations

After examining the reasons for Gangnam-style images dominating touristic online representations of the district in Seoul, it is now interesting to analyse the implications this has for tourism in Gangnam and broader social contexts. The rise of globally accessible media has created a new space for the representation of cultural images, which has led to an on-going production of imaginations about the Gangnam lifestyle.

With his concept of “mediascapes,” Appadurai (1990, p. 6) identifies a new, deterritorialised, virtual space for the flow and exchange of ideas, information and images which evolved due to the on-going of globalisation and the emergence of a “global cultural economy” (p. 6).

“Mediascapes [...] tend to be image-centred, narrative-based accounts of strips of reality, and what they offer to those who experience and transform them is a series of elements [...] out of which scripts can be formed of imagined lives [...]” (Appadurai, 1990, p. 9). These narratives establish imaginations and fantasies about the possible lives of cultural Others and can “become prolegomena to the desire for acquisition and movement” (p.9). Thus, the concept of mediascapes illustrates how beholders of touristic Gangnam online representations are led to construct an imagination of the potential lifestyle of the population in Gangnam. Tourists, who view these representations created by inter alia tourism operators therefore form their expectations of a trip to Gangnam by relying on the presented narratives. The mediascape hereby serves as a created space for the collective construction of an imagination about Gangnam.

This relates to the notion of the globalised tourist gaze as described by Urry and Larsen (2011). The concept of the tourist gaze “orders and regulates the relationships between the various sensuous experiences while away, identifying what is visually ‘out-of-ordinary,’ what are rele-
vant differences and what is ‘other’” (Urry & Larsen, 2011, p. 14). It is a means of social production and reproduction of constructed social realities and is therefore closely related to the concept of power (p. 14). According to Urry and Larsen (2011), people need to “learn how, when and where to gaze” (p. 12), so the power lies with those actors who have agency to shape the tourists’ expectations and perceptions. In the case of Gangnam-style, online representations which are created by tourism operators like the Lonely Planet (2012) establish a specific image of Gangnam and therefore shape the gaze of tourists. Appadurai’s mediascape is therefore a space where tourism operators and other actors can shape the gaze of tourists into a specific direction, which leads to the re-production and proliferation of the social reality of Gangnam lifestyle in Korea. Urry and Larsen (2011, p. 30) identify that “tourist sites proliferate across the globe as tourism has become massively mediatised” (p. 30) and term this phenomenon “the globalising of the tourist gaze” (p. 30). The notion of mediascapes, a newly created space through globalisation, and the emergence of the mediatised, globalised tourist gaze therefore illustrate how tourism operators can deliberately shape the expectations and behaviours of tourists through the media before they actually visit Gangnam, and direct the tourists’ gaze onto the lifestyle of the population. This in turn leads to the increasing importance of Gangnam lifestyle for tourism perspectives, as the lifestyle progressively becomes part of Gangnam’s mediatised narrative through on-going processes of social production and reproduction of imaginaries about the exotic cultural “Other.” The domination of the Gangnam lifestyle compared to the built traditional heritage within online representations has thus led to a reciprocal production and reproduction of Gangnam-style as a place scheme, and promoted it to become part of the imaginations and expectations of tourists about Gangnam.

**Discussion**

The focus of this article has been on processes of cultural globalisation by which Gangnam-style has come to dominate touristic online representations of the district. As is the case in much of social sciences, social reality is often endlessly complex and cannot be grasped by just one set of theories alone. Gorton (2010, n.p.) notes “it seems doubtful that one approach alone [...] could capture the whole of social reality in all its multi-textured dimensions.” We have chosen to focus on the cultural globalisation aspect of our case, as it allowed us to analyse the peculiar case of Gangnam which got thrusted onto the global scene of awareness because of one infamous song. At the same time, it would be a vast overstatement to say that all tourists traveling to Seoul have become disinterested in its traditional heritage sites. The quest for authentic places is still very important in tourism today, as it has been in the past (Wang, 1999). Generally, what is perceived as authentic is culture in its traditional form, not yet modernised and commercialised, and unlike what tourists are used to back home (MacCannell, 1976). Although this study was not directly concerned with the perceptions of tourists, the findings might suggest evidence that the need for and expectation of authenticity is not ubiquitous and might differ per destinations. If the touristic online representations of Gangnam are any indication to the expectations of the area by tourists, then there might be a shift in what is being perceived as authentic by tourists in the globalised world of today. The lifestyle that is represented in Gangnam-style appears to be perceived as representative of local customs of a very modern Asian city. Part of this may also be that the overwhelming majority (80%) of all tourists visiting Seoul are from within Asia (VisitSeoul, 2012).
2016) and the studies on authenticity in tourism have predominantly focussed on Western tourists. A few studies have suggested that tourists from Asia “are generally not looking for object authenticity”, but rather are “searching for signs of technological achievements” (Cohen & Cohen, 2015, p. 31). However, the importance of authenticity in intra-Asian travel requires further scholarly attention.

Another important note is that although it is largely devoid of distinct meaning, the Gangnam-style song and video are intended to contain very specific contents. The video is meant as a caricature of people and lifestyle in Gangnam and was originally expected to “only attract the attention of those who got the joke” (Bedirian, 2016). Ironically, the idea behind the song and video was a subtle social commentary on the emptiness of material wealth and consumption focussed lifestyle that dominates the Gangnam district, as becomes clear when Psy states “human society is so hollow, and even while filming I felt pathetic. Each frame-by-frame was hollow” in a behind-the-scenes video (Fischer, 2012). Nonetheless, Gangnam-style can easily be mistaken for a silly pop-song, as the social commentary is rather subtle and easily missed, as it is something that is generally “not done in mainstream Korean pop music” (Fischer, 2012). Because this critical message is subtle, it was largely overthrown by the more obvious signs presented in the video, like the sexual innuendo, celebration of material possessions and the “horse dance,” which experienced a lot more recognition (Park, 2015; Fischer, 2012). These more dominant signs can be classified as largely “empty” forms of content and, as we argued, exactly this has allowed Gangnam-style to become part of the touristic online representations of Seoul through what Ritzer describes as “the globalisation of nothing.” In a way, through his immense popularity Psy has become part of the global consumer culture he intended to ridicule. These two points show that in a globalising world in which global consumer culture dominates and places fight to attract tourists, the quest for authenticity, something meaningful and local is not lost, but rather it easily becomes overthrown by global calls for consumption.

Suggestions for Future Research and Further Implications

Recommendations for future research include a rigorous analysis of the changing touristic landscape of Seoul and the Gangnam-district over time. It is suggested that the same global processes analysed in this article that led to the rapid thrust of Gangnam onto the global scene, resulting in increased name recognition, tourist arrivals and even changes in the visual landscape in the city (e.g. a Psy statue, local police force dressed in Psy costumes), might similarly lead to a rapid change in successor place schemata that might take Psy’s Gangnam-style place. This can have important complications for tourists’ experience as well as tourist-host interactions. Another recommendation for further research follows the more practical concerns shared with Ballesteros and Ramirez (2006, p.677), who write about the importance of taking “symbolic and identity-related factors into account when planning, designing and managing tourist products and destinations”, and thus the call is for more research into the social identities of Gangnam locals and the interplay between local communities and ever changing online representations.

The findings of this article bear implications which need to be considered in future research. Analysing Gangnam-style through theories of cultural globalisation has shown that a lifestyle movement can be accelerated through space and time in a very rapid way. This implies that other
social movements could experience the same process, challenging cultural and economic social practices and ultimately changing patterns of consumption (Wahlen & Lamanen, 2015). Therefore, this review has shown that globalisation theory appears as a useful lens to examine and understand social and cultural movements, especially regarding the notion of “lifestyle.”

**Conclusion**

We have shown that in the context of touristic online representations of place, certain place-schemata come to dominate others through a number of characteristics of their form. The article has contributed to our understanding of how this happens, by analyzing the global processes that have allowed the Gangnam-style representation of the Gangnam district to dominate its touristic online representation, while traditional heritage of the district has become subsumed in terms of importance for representing the district online. What we have found is that Gangnam-style becomes easily globalised through its fluid nature, being able to move through space and time through the global media as a space of flow. Traditional heritage, on the other hand, still “travels slowly” due to its fixed spatial and temporal dimension and its relations to the location of built sites and certain period of time in the past. Gangnam-style also, both the song and lifestyle it represents, are full of “empty” (Ritzer & Ryan, 2002, n.p.), non-distinctive elements that can be found in popular culture all around the world (Storey, 2009, p. 31). Using the theory of the globalisation of nothing, we showed that this renders Gangnam-style more feasible for purposes of globalisation and domination of online representations than local heritage which is full of distinct content and meaning. Additionally, Gangnam-style represents a lifestyle that fits well into global consumer culture as it evolves around material possession and subscribes to the notion that consumption determines identity and social status. Gangnam-style thus can be easily commodified, this in contrast to local heritage which is much harder to be commodified and thus may play a less important role in the construction of image, character and attraction of tourists. Lastly, we analyzed a main implication of Gangnam lifestyle images dominating media representations. Here, we found that there are on-going processes of the social construction of imaginations by tourists, whose experience of Gangnam is determined by their gaze, which is in turn constructed through the media representations.

In this article, we did not start from a clear stance on whether cultural globalisation leads to cultural homogenization or cultural hybridisation. Rather, we have shown that cultural globalisation consists of a multitude of complex processes with non-straightforward outcomes. By relating contemporary globalisation theories to the forms of culture presented in online representations of Gangnam, we have analyzed global processes of mediatized representations of places, new modes of consumptions relating to lifestyles and the implications for tourism in Gangnam. In our discussion, we have briefly touched the relation of essentially “empty,” globalised forms of culture to the quest of authenticity, which is still an important aspect for tourism studies. As we have focused on the specific context of Gangnam and the way it is being represented online, we benefited from cultural globalisation theories evolving around the rise of the global media (Appadurai, 1990; Castells, 2000). Further research relating to this topic could benefit from the use of the new mobilities paradigm (Sheller & Urry, 2006), in order to analyze the movement of tourists in Gangnam and the relations to touristic online representations.
References


