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TRASH, TURTLES, AND TELESIS:
SPARKING COMMUNITY ENVIRONMENTALISM THROUGH ART

by

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A capstone submitted in partial fulfillment of the requirements for the degree of Master
of Arts in Education: Natural Science and Environmental Education.

Hamline University

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CHAPTER ONE

Introduction

Background

Despite being small and easily overlooked, Sullivan Lake Park is a wonderful place to be in nature and connect with other people. Unfortunately, the park suffers from some environmental problems. Because I see the value of this park for my community, I want to explore the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* This chapter examines how my personal background and education lead me to become interested in this topic, and how answering this question at the local level is important to environmental education as a profession.

As a teacher of English Language Learners (EL students), people are often surprised at my strong love of science and desire of pursuing my higher education in environmental science, rather than further EL or pedagogy studies. However, my education experiences, personal values, and commitment to community are what have led me here. I am personally invested in the diverse community that I live in, and I want to explore the intersectionality of promoting environmental knowledge and pro-environmental collaboration amongst people of different ages, languages and backgrounds, as environmental education is a field historically dominated by whites. More importantly, I want to build positive relationships amongst people in my community and promote the social and environmental health of the community.

Even before I moved into the neighborhood, I knew about and valued the local Sullivan Lake Park for its accessibility to nature and knack for bringing people together. Since then, I have come to know more fully what an asset it is to the community. I want to rally neighbors around this issue, I want to explore the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* The rest of this chapter will explore how I arrived at this topic, and why it is of value to me as well as the profession of environmental education.

Personal Interest

I have always had some interest in social justice and a love for animals. My mom described me as a child as someone who was always looking out for the underdog. I started university interested in animal science, with the ultimate goal of being a dairy veterinarian who worked in public health. I spent my first year taking all honors science classes and enjoying the curriculum, but outside of class, I was getting more involved in volunteering with disadvantaged people in Minneapolis. After becoming more involved with local social justice issues through tutoring immigrants and working at a food shelf interviewing clients, I wanted to be a social worker. After a fellowship teaching English in Germany in an immigrant community, I decided that education was a huge part of providing opportunities for disadvantaged people and would allow me to work closely with families. I got my teaching license for ESL rather than math or science, for I wanted to continue to work with that population. During my teaching experience, I have created a

niche for myself as an EL teacher in the science and math departments as a result of my knowledge and former education in those fields.

As a teacher of English Language Learners (EL students), people are often surprised at my strong love of science and desire of pursuing my higher education in environmental science, rather than further EL or pedagogy studies. However, my education experiences, personal values, and commitment to community are what have led me here. I enjoy being able to bring my different interests together in my job, and I love being able to share my different passions with other people.

I am also very personally invested in my community and I want to use my expertise to help make it a better place. As it is a diverse community, I want to explore the intersectionality of promoting environmental knowledge and pro-environmental collaboration amongst people of different ages, languages and backgrounds, as environmental education is a field historically dominated by whites. More importantly, I want to build positive relationships amongst people in my community and promote the social and environmental health of the community. I see the value the park has for me, for others in the neighborhood, and as part of the ecosystem. It is important for me to help preserve the health of the park's ecosystem and help others to understand the impact of their actions, both positive and negative. Through education, people will want to help make the park a better and healthier place for generations to come. My particular interest in the park, and my investment in my community in this practical way has impacted the focus of my education.

I long pondered finishing a masters program in ESL, teaching, or environmental education, or getting a second license in secondary science. Thanks to Hamline University allowing me to use my EL credits as electives and my program director's encouragement to bring together environmental education and EL learners, I landed in the NSEE program. While studying environmental education, it has become more and more clear that there is not much diversity in this field. Therefore educators need to bridge that gap and bring EE to more people and seek out diverse voices and input into the future of our communities and environment. As all voices are affected by the policies and are stakeholders, all voices need to be at the table. Additionally, the more I read about environmental issues in the world and how people are finding creative solutions, the more I value being able to make a difference and find environmental solutions at the local level.

I purchased a home in a neighborhood that reflected the importance I place on being part of a diverse community. As our realtor can confirm, we chose our house partly due to the proximity to a lovely park containing a lake with a population of snapping turtles. We quickly found that the whole neighborhood bonds over these turtles, and how lovely that the local gossip is about animals we all appreciate. Being someone who enjoys nature and enjoys teaching, I want to share that passion with other people.

I have also noticed some issues with the park and went into the NSEE program hoping I would be better equipped to be part of the solution in my community, or at least get the conversation going. Some of the major issues are the large quantity of trash in and

around the lake, and the feeding of white bread to the geese, ducks, and turtles, which is popular with many people.

White bread is unhealthy for these animals for a number of reasons. According to Julia (2018), the digestive systems of turtles are unable to process bread properly, as well as any foods that contain dairy. Bread also lacks the nutrients that are essential for turtles to grow properly, and eating it can cause metabolic bone disease and distort the growth of their shells. Feeding turtles in the wild can create an unhealthy dependent relationship with humans. Geese and other waterfowl have similar issues. In addition to filling up on empty calories and an unhealthy reliance on humans, “Reasons Not to Feed Geese” (n.d.) shares that the abundance of food will cause geese to overbreed and become overpopulated. Diseases, such as aspergillosis, a fatal to waterfowl lung disease, also spreads through the increased fecal matter and mold growth from uneaten bread. This affects the water quality as well, since bread in the water stimulates algae growth. Overproduction of algae clogs waterways and affects the health of the fish population.

These issues that affect the health of the lake and the aquatic animals are important to me because I love this park and the positive role it plays in my neighborhood, and I want to keep it clean and healthy for the future. The more time I spend in nature, the more I want to engage in pro-environmental behavior. This tendency is true for children as well (Wallin, 2017). Therefore, it is beneficial for people to spend time engaging and connecting to nature, with implications beyond their own satisfaction and mental health. My project is based on the goal of informing people of the environmental issues and framing them with the promotion of what people can be doing

differently to have a positive environmental impact. I can affect change on the small, local scale. I hope to create an art installation in Sullivan Lake Park that is informative, focused on practical measures, and inspires people to change their behavior away from environmentally negative behavior such as littering and feeding white bread to the animals towards more pro-environmental behavior. An art installation is both a practical and personal choice on my part. It is a practical way to share information with the population that includes children and those who do not necessarily speak English. I have often integrated art into my own education, such as writing a semantics paper as a comic book or sewing a Sierpinski's triangle. I have continued this trend in my teaching, through creating historically accurate costumes for teaching history to EL integrated social studies classes, illustrating abstract vocabulary words, and drawing chemistry analogies. It is personal because I have been creating art my whole life. Science and nature often influence my art, and I would love to have my art influence how people view nature.

Importance to Profession

These issues are also important to environmental education as a discipline, as environmental education and having a positive impact on the environment is important both on a large scale, and on a small scale at the local, grassroots level. If getting involved is easy and doable for people and they can see the positive benefits, they will be more likely to continue to engage in pro-environmental behavior (Pruneau et al., 2006; Quimby & Angelique, 2012). This project also affects everyone in the community who uses, and therefore is a stakeholder, in the park. This group is varied in age,

socio-economic status, culture, and language. I believe that environmental education is for everyone, which means educators need to ensure they reach all audiences. I need to focus on something broad that will capture that audience. Much of the literature I have come across dealing with barriers to pro-environmental behavior, attitudes about the environment, and motivation for pro-environmental behavior focuses on larger global issues, such as global warming. Having a small and specific local focus will add to the literature.

Summary

In summary, a combination of my education in science and environmental education, my personal interests, and experiences in my community have motivated my interest in examining, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* This issue connects to my interest in sharing my passion for the environment with others and my desire to bring environmental education to a wider audience in the community. It is dear to my heart because this park is an important landmark and gathering place for the people in my neighborhood. Beyond my community, it highlights a valuable way to make environmental change and impact on a small scale, which can inspire others and easily be replicated or imitated by others in other neighborhoods.

In chapter 2, the literature on the barriers to pro-environmental behavior, motivation to act pro-environmentally as well as impacting pro-environmental behavior, and art as an effective means of influencing pro-environmental behavior is reviewed. In chapter 3, my art installation project for informing the community of the environmental

issues and motivating pro-environmental behavior is outlined. In chapter 4, I reflect on the project and the future.

CHAPTER TWO

Literature Review

Overview

In order to better understand the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?*, it is necessary to examine what pro-environmental behavior is, how people can be influenced or motivated to change their behavior to act in more pro-environmental ways, and ways to communicate this message. More specifically, communication through art, in anticipation of creating an art installation to impact pro-environmental behavior (PEB) at Sullivan Lake Park. This chapter focuses on two topics, behavior and communication. The first will cover the research defining pro-environmental behavior, the barriers to pro-environmental behavior as well as the factors that influence people to change their behavior in regards to the environment. The second examines bringing environmental education to a community and communicating environmental education through art.

Pro-Environmental Behavior

Kollmuss and Agyeman (2002) defined pro-environmental behavior as, “behavior that consciously seeks to minimize the negative impact of one’s actions on the natural and built world (e.g. minimize resource and energy consumption, use of non-toxic substances, reduce waste production)” (p. 240). PEB is described by Macy and Brown (2014) as actions that “bring our lifestyles and consumption into harmony with the living systems of Earth” (p. 4). They further broke these actions into three categories: those that

directly stop environmental damage, changing the structures of society to be more eco-friendly, and shifting social values and consciousness. These actions work together to make society more environmentally friendly.

Having a more environmentally friendly society has not always been a mainstream concern, and which actions society deems as environmentally friendly have changed over the years. One action that has been widely participated in over the years is feeding ducks and other birds. Consider the classic story of Mary Poppins, best known for the 1964 film adaptation. Disney (1964) depicts a supporting character in the story, the Bird Lady, who urges people to buy bread crumbs to feed to the birds outside St Paul's cathedral. She is considered to be a kind person because she cares for the birds, and shows this by feeding them bread crumbs and essentially acting as an advocate for the birds. Part of the redemption arc of Mr. Banks is shown through his generosity in buying these breadcrumbs lavishly once he is a changed man. While there is no intended message about environmentalism here, the screenplay assumes the audience already has bought into the idea that feeding bread to the birds is a good and kindhearted thing to do. This is a socially acceptable thing to do, or at least it was. Feeding bread to ducks and other birds is still a widespread activity, although more is known about the negative health effects on the birds, making this past time controversial ("Reasons Not to Feed Geese", n.d.).

Hardin (1968) noted that beyond the social acceptance of an action is the ethics, or as he calls it, the morality of the action, which is defined by the conditions in which the action is performed. Littering affects people in a densely populated area more than it does

in a sparsely populated area. Perhaps that view of litter was the prevailing idea when he wrote it, but fifty years later the world is more closely connected and the impact on ecosystems is better understood, regardless of the impact it directly has on humans.

This next section examines the barriers to PEB. It will address the factors that work against PEB, the shifts in social consciousness still need to occur, and what prevents individuals from acting in environmentally sustainable ways.

Barriers to Pro-Environmental Behavior

The review of the literature presented a wide variety of barriers to people performing PEB. They are also personal. What may be an obstacle to one person may not be for another person. Whether barriers are literal or social, genuine or perceived, inaction is the result.

A lack of infrastructure, or physical community supports, can be a barrier to participating in PEB (Quimby & Angelique, 2011). For example, Loverock and Newell (2012) found that people who are willing to compost at work may not do so at home for lack of a composting bin or city-wide compost collection.

Another tangible barrier is cost (Quimby & Angelique, 2011). Soliman et al. (2018) asserted that short-term costs and inconveniences, even if small, can be a barrier to achieving long-term benefits because people tend to favor the here and now over future possibilities, a concept known as temporal discounting (Frederick, Loewenstein & O'Donoghue, 2002; Soliman et al., 2018). This is the same reason that many preventable diseases still occur (Soliman et al., 2018). Many people are not willing to take the small steps or small changes in behavior now, such as quitting smoking, which lead to

significant negative effects later, such as lung cancer. Temporal discounting at Sullivan Lake Park may look like not chasing down trash that has blown away, or not walking the extra distance to get to a trash or recycling can along the trail. While cost can be a prohibitive factor in whether people act pro-environmentally, this barrier does not affect individuals when it comes to the issue of paper, wrapper, and small-item littering, as discarding of waste in a proper receptacle is at no additional cost to the park users, other than perhaps taking the time to seek out a trash can. It may be that as a city there is a cost of adding more trash receptacles, in addition to the increased costs of paying someone to empty them and disposing of more waste. Without access to data, it is difficult to estimate how these costs compare to the cost of park clean-up and water quality maintenance that result from the quantity of litter in the lake and park.

The feelings of personal ineffectiveness and hopelessness as a barrier found in study subjects by Quimby and Angelique (2011) can be connected to the idea of the “tragedy of the commons,” first proposed by the economist Hardin (1968) and summarized by Loverock and Newell (2012) as, “relying on the majority of a community to care for the commons through an intrinsic sense of stewardship is insufficient for maintaining the vitality of common property” (para. 3). The tragedy is that individuals will seek out their individual interests rather than work towards the common good. Hardin discussed pollution as a prime example of the tragedy of the commons at work. It costs less to pollute than it does for a company to clean up its output and avoid polluting (Hardin, 1968). On an individual level, this is also true, which is why his ideas may explain the quantity of litter found at Sullivan Lake Park, as it is easier to leave it behind

or refrain from chasing it down when it blows away than it is to carry an undetermined distance to a trash or recycling bin. Hardin (1968) stated, “since this is true for everyone, we are locked into a system of fouling our own nest, so long as we behave only as independent, rational, free-enterprisers” (p. 1245). Further complicating the issue is that many people are hypocritically more concerned that others are not doing their part to increase PEB than they were with their own personal efforts toward PEB (Quimby & Angelique, 2011). Perhaps people are more motivated to find the problems in others rather than those in themselves.

Related to the idea of the tragedy of the commons is the concept of free-loading. Also called free-riding, this is the idea of individuals who do not do their share towards the common good, but still benefit from it (Kramer, 1995). A current example would be those who choose not to vaccinate still benefiting from herd immunity until the number of anti-vaccination free-riders becomes great enough that those who vaccinate, and thus contribute to the common good of herd immunity, are no longer plentiful enough to provide the group benefits of herd immunity. Free-riders are categorized into four groups by Lewis (2006), based on how much free-riding is done, (subtle free-riders contribute less than they take, while gross free-riders take without contributing at all), and based on ability to contribute (active free-riders consume despite their ability to contribute, while passive free-riders consume despite their inability to contribute). Quimby and Angelique (2011) considered the western world overall to be subtle free-riders due to consuming more natural resources than the west’s fair share. Narrowing the focus from the western world to the United States, Phillips (n.d.) found that the United States uses 20% of the

earth's available natural resources but only contains 10% of the earth's natural resources by acre. Furthermore, if every human on earth lived like those in the United States, it would take the equivalent resources of 4.4 planet Earths to sustain everyone.

Arguably, the western world could also be considered active free-riders as well, meaning that while Americans make some efforts towards PEB (the rally around reusable straws comes to mind), these efforts are sadly overshadowed by the energy usage and trash output of the country. Even stopping all use of straws is not going to do much to reduce the 1,630 pounds of trash per person per year produced in the United States (Phillips, n.d.). Indeed, many of the respondents in the study done by Quimby and Angelique (2011) were subtle free-loaders, meaning those who do some PEB, but essentially less than their fair share needed to address the issue. These same people claim that will make the necessary changes or that the changes will be easier to make, once the number of people doing the PEB increases. Essentially, they felt a lack of social support.

Reasons for free-riding, and thus barriers to PEB, cited as most common are not being aware of the issue or at least the efforts working to solve the issue, and being busy with the needs of their families (Pruneau et al., 2006; Walsh & Warland, 1983). This felt "lack of time" was also noted by Quimby and Angelique (2011) and Pruneau et al. (2006). Fortunately, time as a barrier to PEB does not appear to be a real concern for changing behavior at Sullivan Lake Park, given that the main issues are feeding white bread to the ducks and turtles, and litter. Taking the time to make it to a trash can or picking up litter while on a walk does not involve much extra time.

One way that the free-rider issue is addressed is by calls to action about a crisis, and indeed, Fireman and Gamson (1977, as cited by Walsh & Warland, 1983) found that when collective action is urgent, if people feel they are acting in solidarity, they will do their part even if their contribution on its own is not noticeable. These messages work because people are discouraged from free-riding, as the communal benefits are said to be ending soon. Unfortunately, these calls about crises can also backfire, as an individual's actions can be seen to be in vain, thus increasing free-riding in a situation known as the mobilizer's dilemma (Quimby & Angelique, 2011). Strangely enough, avoiding crisis messages in favor of positive messages can also increase free-riding, since people do not feel a personal need to address the issue if the issue is communicated in a way that makes it seem not that bad (Vasi & Macy, 2003). This feeling that crisis is not near at hand and instead is very far off can also be a barrier (Soliman et al., 2018).

Despite the research on the mobilizer's dilemma, there are people who persist that short of a crisis, nothing will change a person's behavior (Quimby & Angelique, 2011), and so distance themselves from it. This lack of personal ownership of the environmental issue was also noted by Kollmuss and Agyeman (2002). In their seminal work, they mentioned a lack of internal factors, or intrinsic motivation as a barrier to PEB, which Siegal et al. (2018) deemed as a lack of agency. This could also be considered apathy.

While there are many barriers, both real and imagined, the good news is that these barriers can be removed through changing social norms, particularly through environmental education and support of institutions. People are more likely to address their perceived barriers if they are concerned about the issue, are affiliated with

environmental groups or actions, have made changes in their personal behavior, and if they simply care (Quimby & Angelique, 2011). The next section will look explicitly at what can be done to influence PEB.

Influencing Pro-Environmental Behavior

Equally complex to the barriers to PEB are the factors that influence motivation and the changing and formation of habits of PEB. Many have studied this topic extensively and found different ways to group and classify the factors that lead to PEB.

One of the most cited works on PEB is “Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?” by Kollmuss and Agyeman (2002). They created a model (see Appendix) that breaks the factors that influence PEB into internal and external factors. Internal factors include knowledge, feelings, emotional involvement, values, and attitudes that make up environmental consciousness. External factors can be infrastructure, political, social, and cultural factors, the economic situations, etc. (Kollmuss & Agyeman, 2002).

Pruneau et al. (2006) organized the factors that influence PEB into three categories: 1) level of awareness and knowledge of the environment and the issues, 2) emotions, feelings, and personality traits, and 3) situational factors such as social influences. Situational factors accounted for 80% of the motives for either PEB or non-PEB (Fliegenschnee & Schelakovsky, 1998, translated by Kollmuss & Agyeman, 2002). In addition to the situational factors, which included opportunities to choose, economic restrictions and social norms, Hines, Hungerford, and Tomera (1986) looked at six factors; 1) knowledge of issues, 2) knowledge of action strategies, 3) locus of control,

4) attitudes, 5) verbal commitment, and 6) individual sense of responsibility. Warde (2005) offered an approach with:

...a distinctive perspective, attending less to individual choices and more to the collective development of modes of appropriate conduct in everyday life. The analytic focus shifts from the insatiable wants of the human animal to the instituted conventions of collective culture, from personal expression to social competence, from mildly constrained choice to disciplined participation. (p. 146)

However they are categorized, how these factors are created and molded must be examined.

Environmental sensitivity, defined by Chawla (1998) as when people are predisposed to be pro-environmental, in that they are interested in learning more about it, are concerned about the well-being of the environment, and are more likely to do PEB. Chawla (1998) found that the greatest factor in developing environmental sensitivity was time spent in nature as children. After spending time in nature, having an influential adult was the second biggest factor in developing environmental sensitivity. There is positive causation between the amount of time and positive experiences that children have in nature, and their inclination and ability to speak up for the conservation of it as adults (Beck, 2010; Chawla & Nasar, 2015). Spending time in nature also increases the chances of going into a career involved with the environment. Furthermore, this is true of children regardless of culture, race or socioeconomic status (Wells & Lekies, 2012). Perhaps this can help explain findings by Pruneau et al. (2006) that a personal attachment to the natural environment is a motivational factor to PEB. After time spent in nature as

children and influential adults, the factors most likely to lead to environmental sensitivity are experiences of environmental destruction, being part of a family that holds pro-environmental values, being a part of a pro-environmental organization, positive role-models for PEB, and education (Chawla, 1998). When families learn about the environment together, there are additional benefits. Daubenmire et al. (2017) found that practicing PEB together amplifies positive effects on individuals, families, communities, and the environment.

There has been much study on the topic of environmental education and its connection to PEB. Having environmental knowledge is not sufficient to produce pro-environmental change (Sousa et al., 2016). While there is no positive linear relationship between the two, most studies and researchers agree that it does play a role. In their model for factors influencing PEB, Fietkau and Kessel (1981) included environmental knowledge as not directly influencing PEB, but a factor that increases and develops environmental attitudes and values which in turn increase PEB.

One of the issues with environmental education, noted by Loverock and Lowell (2012), is that while it compensates for humanity's natural tendency to do the wrong thing, this message constantly needs to be retaught as it is not passed down through the generations. The participants studied by Quimby and Angelique (2012) requested more environmental education be made available through community education, perhaps feeling that more information would help them feel prepared to do more PEB. It is important to note that education is only beneficial if the concepts are explained in clear and simple ways that the general population can understand (Quimby & Angelique,

2012). If the person teaching is well-known and well-respected, the message sticks better and is more likely to motivate PEB (Jackson, 2005; Marks et al., 2016). Loverock and Lowell (2012) found peer-to-peer learning is a powerful means of modeling and influencing others to also practice PEB. Additionally, learning about the environment in a cross-context environment encourages PEB (Daubenmire et al., 2017). Despite all this, environmental knowledge is not everything, as Kempton et al. (1995) found that environmental knowledge was low in both the people most likely and least likely to do PEB.

Economic factors influence behavior, including PEB. While economists' assumptions that people tend to act in an economically rational way does not pan out, economic incentives do play a role in influencing PEB (Kollmuss & Agyeman, 2002). For example, recycling financial incentives increase recycling. However, financial incentives are not very effective in influencing PEB because they do not motivate everyone and can even decrease PEB (Steen, 2012), such as when the cost for single-use plastic is lower than that of organic or recyclable materials. Steen (2012) found that presenting information and even offering small incentives was not enough to motivate PEB. Quimby and Angelique (2012) found that while many in their study thought that money would motivate them to increase their PEB, the ideas proposed by the participants focused more on changing social norms to increase tendencies of PEB. They felt that being part of a bigger effort of PEB with the social support of like-minded people would be empowering and would increase their own likelihood of volunteering. They were on the right track. Indeed, being part of a collective group can help. Those who are

associated with an environmental group have an increased inclination to have PEB (Quimby & Angelique, 2012).

People are influenced by the community they live in, and the expectations and standards of the community. If these expectations and standards are pro-environmental, it boosts the PEB of locals (Schultz & Tabanico, 2007). This has been successfully done through community-led initiatives (Marks et al., 2016). Loverock and Lowell (2012) found peer-to-peer learning is a powerful means of modeling and influencing others to also practice PEB. This is good news for me. Creating an art installation will help to instill pro-environmental expectations and standards for the neighborhood. As an individual, not a larger entity, I am likely to be viewed as a neighbor, peer, and community instigator rather than someone from the outside trying to impose something on the locals. As part of the neighborhood, I can leverage my standing to help increase PEB and an art installation by me will be more influential than something done by someone seen as an outsider. In doing so, I can help to model the social behavior I hope to see in others.

Social-modeling, the idea of getting information through participating in an activity together or discussing it is the most effective way of influencing PEB, according to Osbaldiston and Schott (2012). Catalysts to PEB are participating in a support group, choosing simple actions to take, and receiving positive reinforcement, such as encouragement, from family members (Pruneau et al., 2006).

In addition to positive reinforcement, other motives for PEB are a personal sense of responsibility (Loverock & Lowell, 2012), and a sense of ownership (Hungerford & Volk, 2003).

Schwartz's Norm Activation Theory (1977) asserted that people will enact a behaviour as a result of personal norms which are based on their awareness of the consequences of their actions, as well as an acceptance of responsibility for those consequences. These results support the notion that those with a sense of responsibility, a sense of optimism, and a strong locus of control, that is, those who feel that their actions can make a difference, were more likely to intend to change their behaviour. (as cited in Marks et al., 2016, p. 1)

People are more likely to feel a sense of responsibility if they feel an issue is within their locus of control (Kollmuss & Agyeman, 2002). If the PEB aligns with a person's values already, it is more likely to be reinforced. "A person's values are most influenced by the 'microsystem', which is comprised of the immediate social net- families, neighbors, peer-groups, etc." (Fuhrer et al., 1995 as quoted in Lehman, 1999 in Kollmuss & Agyeman, 2002, p. 251). An issue that is at a neighborhood level, such as the environmental concerns at Sullivan Lake Park, may feel more within the locus of control of this community, compared to a large, global, overwhelming issue like climate change. Marks et al. (2016) ascertained that positive thoughts, feelings, and beliefs about their place, which can be summed up as a positive sense of place, motivate a community to engage in PEB. Feld and Basso (1996) described a sense of place as a human's

relationship and attachment to a place, and it is developed and strengthened through emotions and personal experiences there.

Sense of place is pertinent because research by Manzo and Perkins (2006) showed that people who have a sense of place in their own community are more likely to invest time, money, and effort into it. When this is a trend within the community, there are the additional benefits of increased social cohesion and a sense of safety because people interact more and look out for each other.

Attachment to a place is increased not just by the beauty or physical attributes, but also by the activities done and interactions had there with others, as well as the time spent in a place (Kyle & Chick, 2007). This concept is important because Sullivan Lake Park is already a place where people in the community like to spend time and interact with others and with nature. Part of the path around the lake is on a raised dock with the water lapping against it. This is where the painted turtles gather, and the view of the water is not obscured by trees or cattails. Furthermore, this is the place where people will stop to watch the turtles and whether or not the snapping turtles make an appearance, strangers will strike up conversations with each other, asking about the whereabouts of the snapping turtles and sharing favorite turtle sighting anecdotes. I know that I have a strong sense of place here, as does my family and my neighbors. I cannot imagine another nature location is the vicinity with a stronger sense of place for such a large group of people.

Baldwin and Chandler (2010) believed that people who associate strongly with a place will be more likely to identify PEB. In contrast, Allen and Ferrand (1999) were

unable to find a connection between a sense of belonging and PEB. When people are outside their local environment, especially if they are prioritizing other values such as comfort, it can be ever more difficult to promote PEB. For example, Juvan and Dolnicar (2017) found that appeals to pro-environmental behavior, in this case asking hotel users in a tourist location to use fewer towels out of concern for the environment, were not effective.

In order to continue their efforts, people have a need to know that their participation in PEB makes a difference (Quimby & Angelique, 2012). Factors that increase PEB are feelings of empowerment, efficacy, increased feelings of hope about the future, and stronger social norms to combat the issues of free-riding and the tragedy of the commons (Marks et al., 2016; Quimby & Angelique, 2012). PEB can be increased when people feel that it has near at hand consequences, and they are part of a collective effort, but must feel both of these at once (Soliman et al., 2018). Subtle changes in the environment are not usually perceived by people, which can make it difficult to feel that they are tangible and necessary to act upon (Kollmuss & Agyeman, 2002). People have a stronger reaction to personally seeing and experiencing negative impacts on the environment, which can in some cases lead to PEB (Chawla, 1999). The emotions evoked by seeing and experiencing these negative impacts can be taken advantage of through this art installation. It will be possible to heighten awareness of the environmental issues and impacts at the lake through the art installation and then turn those reactions into actions.

These strong feelings of fear, anger, sadness and pain are more likely than feelings of guilt to lead to PEB (Kollmuss & Agyeman, 2002). On the other hand,

Baumeister (1998) conveyed that guilt can lead to a pro-social behavior as a way of making up for perceived damage done. At Sullivan Lake Park, the quantity of litter is easy to see, the negative impacts of feeding the wildlife is not. This emotional involvement frames environmental awareness and attitudes, which is related to environmental knowledge (Kollmuss & Agyeman, 2002). Another motivational factor is a desire to help the earth (Pruneau et al., 2006).

German language publications by Fliegenschnee and Schelakovsky (1998) and Lehmann (1999) (as cited by Kollmuss & Agyeman, 2002) found demographic factors of being female and years of education to also be factors in PEB. While women tend to have less environmental knowledge than men, they are more emotionally invested. While education does not directly affect PEB, more years in school often means the knowledge of the environment is greater and more extensive. Gatersleben et al. (2002) found that participants with a higher level of education had more PEB. In their survey, Marks et al. (2016) reported that 53% of those in their sample who had attended university reported an increase of PEB, while only 38% without university qualifications noted intent to increase their PEB. While not much is known about the educational level of the inhabitants of the neighborhoods surrounding Sullivan Lake Park, presumably the majority of the employees of the medical device company adjacent to the park have university qualifications. These employees like to walk the path around the lake during lunch and breaks, and therefore are part of the population I wish to influence with my project.

Art can also influence PEB behavior and is interesting and complex enough to deserve its own subtopic, as well as steer the direction of this project. It will be discussed more in-depth in the next section.

There are many factors that influence if a person practices PEB. They may be external or internal, perceived or genuine, but they differ from person to person. Knowing how time in nature and sense of place impacts people is encouraging, as I suspect many already have a strong sense of place at Sullivan Lake Park. I am likewise encouraged that I can act as a social model for others, who then in turn can pass it on. There can be a positive ripple effect in the community. The project should present an idea to the audience that they can have an immediate impact and that achieving it is easily within their grasp.

Communication through Art

Much research has been done on art and its positive benefits to humanity. Art influences people to live better (Tereso, 2012). Art is also a good way to connect with a broad and diverse audience (Cermak, 2012), especially in a neighborhood (Mertz, 2018). Street art positively impacts a neighborhood (Mulson, 2018). These are all good and relative to this project, because it includes using an art installation to raise awareness of the environmental problems at Sullivan Lake Park, and inspire people to practice habits that are more environmentally friendly. The Tate Art Museum defined an art installation as art that is characterized by, “large-scale, mixed-media constructions, often designed for a specific place or for a temporary period of time” (“Installation Art”, n.d.). This will involve some form of street art, and it needs to bring a positive impact and connect with

the diverse audience in my community. The rest of this section of chapter 2 will focus on the connection between art and influencing PEB.

Gablik (1992) made the bold claim that in the past, art did not require a purpose other than being aesthetic, but today it is essential for art and every other field to play a role in preserving the earth. She argued that, “art may never save the world, but saving the world is not the same as saving the phenomenon ‘world’ itself, which is something art can do: art can help us to recollect our belongingness to something precious and worthy of protection” (p. 50).

Art that is integrated into environmental education helps people feel a greater connection to nature (Song, 2012). Not only that, but it can also increase the value of a place and encourage PEB. As Marks et al. (2016) stated:

Environmental art can invite curiosity and present ideas in innovative or unexpected ways. It can stimulate imagination and hands-on interaction, encouraging participation and opportunities for social learning as well as reflection on environmental behaviours. Additionally, presenting artworks in nature can assist in the re-imagining and appreciation of place. Through these processes, environmental art can connect people with what they value in their environment and, consequently, motivate them to employ sustainable practices. (p. 311)

Marks et al. defined environmental art as “any art that aims to stimulate awareness of people’s relationship with nature as well as ... prompts discussion and/or action around environmental issues” (pp. 311-312). Additionally, they pointed out that

environmental art has the purpose, “to express and/or foster pro-environmental awareness and behaviours” (p. 312). One example of an artist who is modeling PEB through dual purpose sculptures is Lynne Hull, who creates art for humans as well as animals. She created artistic wooden sculptures that double as perches and nesting roosts for predatory birds, as well as floating island sculptures that doubled as nesting locations for waterfowl (Gablik, 1992). Not only did she directly help the animals thrive in their natural environment, but the art also helped the people who ventured to the places where her art was installed to appreciate the environment too. This helps develop a sense of place and help highlight “the ‘special’ qualities of place embedded in everyday life” (Lippard, 1997, p. 37, as cited by Marks et al., 2017).

Marks et al. (2017) suggested that sense of place, mentioned earlier in the discussion of factors that increase PEB, can be increased by engaging the community and catalyzing social interaction through the presentation of artwork and offerings of activities, and that this art should be placed in nature to foster those connections between the art and the place. This is true for both residents of the area and visitors to the area. Art helps people reimagine a place and appreciate it more, also increasing a sense of place and PEB. Additionally, art can help people to reimagine their surroundings, which also helps strengthen a sense of place and PEB (Marks et al., 2017). Of the visitors to their art installation who came without environmental intention, about a quarter of the sample left expressing an intention to practice PEB. Of those who had environmental intent, it reinforced that desire to keep and conserve what they had. They also reported that it made them more aware of the environment, stating, “reminds me to take care of it. Be more

careful what we do to it” (p. 326). One respondent who lived in the neighborhood of the art installation claimed to not be influenced but also stated that the art, “makes one more determined to protect and respect it” (p. 326). These are the responses that could benefit Sullivan Lake Park.

Graham (2007) discussed in depth how combining art education and placed-based pedagogy helps re-envision connections with nature. He noted, however, that within the school system there is very little serious environmental education. Perhaps this can be rectified in part by instilling this more in the community.

Similar results were reported by Curtis et al. (2013), who found that environmentally-themed community arts projects created an emotional response in the community which led to environmental awareness and community building, and from there to PEB. “It is this strong emotional response elicited by environmental art that makes it an effective format for environmental communication” (Marks et al., 2017, p. 311).

Art is a good way to communicate PEB because it helps cultivate empathy in people and helps alleviate cultural blindspots (Nussbaum, 2010). Anderson (2007) reported that different people have a wide range of competences and needs when it comes to environmental education. Additionally, it can help alleviate the “information gap that exists between cultures” (p. 200).

Art is an effective way to communicate ideas and help people feel more connected to their community with a sense of place. This is due to the ability to bridge languages and cultures and help connect people as it appeals to emotions (Cermak, 2012).

Establishing a sense of place is a vital part of fostering interest in the well-being of the environment, leading to PEB. Therefore, integrating art into the environment of Sullivan Lake Park will be key to influencing PEB.

Summary

Although the barriers to PEB are many, and the motivations and ways to change peoples' behaviors to be more pro-environmental are complex, there are some ideas which show up consistently and are promising. The barriers of time and cost can be minimized. People can be encouraged to care through appealing to emotion and sense of place. Peer and neighborhood interactions and social structure can be put to advantage. Finally, art can be leveraged for its positive benefits and ability to reach a variety of people. This research informs the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* Chapter 3 outlines the plan for creating an art installation, leveraging the research to optimize the promotion of PEB. The art installation is described, rationalized, the setting and participants are described, and the timeline and project assessment are laid out.

CHAPTER THREE

Project Description

Overview

Chapter 2 defined PEB, looking at the literature and prevailing ideas around the barriers to PEB, how to motivate people to change their behavior to be more environmentally friendly, and how art can be effective in instilling a sense of place for people in a community. Now, how does that all fit together? The goal is to answer the research question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* This chapter will cover the ideas I had for an art installation for Sullivan Lake to inform park users about environmental issues and motivate the park users to practice more PEB. The chapter goes into depth with a description of the art installation, the rationale for my choices, and descriptions of the setting, participants, and timeline for this project.

Project Description

According to Tate Art Museum, “the term installation art is used to describe large-scale, mixed-media constructions, often designed for a specific place or for a temporary period of time” (“Installation Art”, n.d.). I created an art installation to raise awareness of the environmental problems at Sullivan Lake Park, and inspire people to practice habits that are more environmentally friendly. The two biggest issues that I have observed are the quantity of litter in and around the lake and people feeding bread to the waterfowl and turtles. It would be difficult to measure how much of this litter is directly from people dropping it in the park, or indirectly being blown by wind or carried in with

the watershed. I wanted to find a way to address both issues in a creative way that does not directly blame or shame people, but opens discussion and allows them to come to their own conclusions and hopefully actions that are more pro-environmental.

I have crocheted a large, two-dimensional snapping turtle using “plarn,” which is a fiber used like yarn, made out of strips of plastic bags. The turtle can be fastened to a wall or chain-link fence for better visibility. The turtle’s shell is decorated with trash that has been collected in the park, as well as the plastic clips that close bread bags.

There was a QR code knit out of black and white yarn displayed with the turtle. The QR code leads to a website with photos of the park, information about the harms of water pollution by litter and bread, the harms of bread to turtles and water fowl, and alternative foods to feed to these animals such as frozen corn and peas. Contents of the website are described in Table 1.

Table 1

Description of contents of website created for project

Contents of Website	
Problem: Feeding bread to turtles/waterfowl	Link to website about issues that bread causes for birds Link to website about issues that bread causes for wild turtles
Solution to feeding bread	Link to websites about alternate food choices
Engagement with nature	Hashtags for sharing photos Link to app for identifying species
Solution to litter	Challenge community members to pick up trash and share a photo in the community social media group Information about adopting a storm drain

A potential follow up to this project in the future could be a GoFundMe for a simple vending dispenser, such as those used for dispensing gumballs, that would be filled with appropriate food pellets for feeding the turtles. This was not within the scope of this project at the time.

This art installation was put up along the chain link fence by the path in the area where the turtles, and therefore people, like to hang out. It was installed before Memorial Day weekend, a time of year when the weather is nice enough for the turtles to come up and be visible and when more people are going to the park. In order to get permission to put the art up in the park, it was necessary to send a proposal to local government so that the board could vote on whether to allow it.

Rationale

Marks, Chandler, and Baldwin (2016) have researched how local art installations connect the community to the local environment, finding that, “placing artworks in nature can assist in the re-imagining and appreciation of the environment, enhancing individuals’ and communities’ sense of place and, consequently, encouraging the desire to act as environmental stewards” (p. 325). It is for these reasons that I feel an art installation placed in an area of the park where people are enjoying the lake and watching the turtles is an effective backdrop for communicating my message to the park users. This is also the place where people feed the turtles and is near the area where the waterfowl are most commonly fed. The art installation will be visible to the people who are doing behaviors that I want to provide information about and suggest alternatives. For the people who walk or bike on the trail, this is also the place where they are most likely to

stop. Although litter accumulates in many places around the lake and park, this location is near an area of cattails where algae grows as a backdrop to buoyant litter, heightening it and making it more visible.

Spending time in nature increases PEB (Beck, 2010) and people who are at the park are already spending time in nature, but need positive reinforcement for PEB, and sense of responsibility for the issues (Hungerford & Volk, 2003; Loverock & Lowell, 2012). Even those who are not directly responsible for the negative behavior, such as littering, can change from being neutral, or having no environmental impact to being advocates for PEB or doing PEB, such as picking up litter, themselves.

As a local community member, I am qualified to present information to my neighbors, as peer-to-peer learning is an effective way of sharing and influencing PEB (Loverock & Lowell, 2012). Additionally, creating and installing an art installation will get people talking and help to voice pro-environmental norms in the neighborhood, which has been shown to increase the PEB amongst locals (Schultz & Tabanico, 2007). As most of the park users live locally or at least work locally, this is relevant.

Making a turtle is a deliberate choice because it is an iconic animal at the park and the one that will get complete strangers to stop and talk to each other. No one does that about ducks. However, it is not possible to stop and watch the turtles without other people stopping too, and soon enough everyone is swapping their giant snapping turtle sighting stories that range from the elated tales about the ducklings, painted turtles, fish they have been seen to eat, to the dismaying rumors about them being found dead. On my street, a few blocks away, the neighborhood gossip is always about the turtles. The

children, likewise, are invested in trying to catch the turtles with nets, feeding them, and telling me facts they looked up about turtles.

As a fiber artist, I wanted to either knit or crochet part of this installation.

However, I did not want to introduce new trash to the environment. Nor did I want to use acrylic or polyester yarn, both plastics themselves, which are the common fibers in many 'yarn bombing', knit or crochet fiber-based art installations due to their inexpensiveness and longevity of fiber and color. Yarn bombers have sometimes been called out on using these fibers, especially in wrapping trees as they can have negative effects on the trees or animals who live in trees. While I would have preferred to use only trash found in the park itself, plastic bag bans are currently a hot topic, so they are worth including in this project. A search of New York Times ("Plastic Bags", n.d.), shows numerous articles about different cities, states, and countries banning the use of plastic bags, and evaluating the effectiveness of such bans. In addition to using plastic bags, which has a larger focus, using trash found in the park will narrow the focus to the quantity and types of litter commonly found in the park. This mimics the art of many eco-artists who create amazing installations out of trash found in the ocean or washed up on beaches. This is the same concept, but on a smaller, more local scale. As Bullard et. al. (2005) said, "An environmental impact in one region or country has the potential to affect the entire world and all life in it" (p. 280). Or as the popular phrase puts it, "think globally, act locally" (author disputed).

Bread bags ties will also be included in the design because bread is commonly fed to the turtles and waterfowl. While these bag ties are not specifically part of the littering

problem, I want them to be associated with litter as a problem. These carbohydrates are inappropriate food for these animals.

The QR code reader gives the audience a chance to interact with the art piece, learn more, and gives me the opportunity to track engagement, through the use of a bit.ly shortened URL which provides information on how many users use it to access the website (“The Purpose of QR Codes”, n.d.; Admin, 2011). I also included a hashtag to help track photo sharing online. It also gave me the opportunity to provide more environmental education, provide suggestions for alternate behavior or PEB, and provide opportunities for people to give or get involved. Kester (2004) found that community-orientated art installations instigated dialogue and social learning.

Setting

Sullivan Lake Park is one of 13 parks in a small, first-ring suburb of a large, midwestern metropolis, and contains one of the five lakes. According to the city website, it is popular for its walking trail around the lake and it has the best tennis courts in the city. (Sullivan Lake Park, 2017). While it is a small park, some of the other amenities include a picnic shelter, tennis courts, and a playground.

The trail that surrounds the small lake is about a quarter long, and has access at three points: the park at the southeast corner, a bike trail that leads to a residential street on the west side, and trail that leads off on a busier road to the north, across the street from two large retail stores. The trail passes by the park, a branch of a large, local medical engineering company, a wooded hill with townhouses looking down on it, and the backyards of several duplexes. These have tall chain-link fences, some of which have

doors for the residents to have easy access to the trail. At this same point, the other side of the paved trail is adjacent to the lake and on a raised platform from the water.

This part of the lake is where painted turtles gather in large numbers, on a sunny day can be seen lined up on a nearby log. The calm water will be disturbed by the perpetual bobbing of tiny heads in and out of the water. Additionally, there are snapping turtles who will come close to the edge of the water here, as they have no fear of humans while they are in water and have become accustomed to being fed. This is where the art installation will be displayed. The lake also has populations of Canada geese, mallard ducks, wood ducks, blue herons, green herons, red-winged blackbirds, and countless other birds.

Participants

The participants are the people who visit Sullivan Lake Park. These are people from the neighborhoods surrounding the park. These locals are homeowners, renters, and people living in houses, duplexes, and apartments. According to the American Community Survey Demographic and Housing Estimates from 2017, the population of the city is 22% under 18 years old, and has racial demographics of 68.3% White, 20.8% Black or African American, 2.8% Native American, 6.3% Asian, 0.2% Hawaiian or Pacific Islander, and 7% self-identified as another race. Park users are not tracked, and information on the population immediately in the vicinity of the park is not available. The park borders a second suburb to the north, and also attracts people from the city that governs it as well as those who are not politically invested.

Additionally, the employees of the medical engineering company will walk the trail during breaks and lunch time. Possibly employees from the retail businesses to the north and further to the east of the park come here also.

Timeline

The first part of the project involves collecting materials. In February, I sourced green plastic bags to make into plarn for the background of the turtle. Once these were sourced, the bags were cut into strips to be used like plastic yarn, also known as plarn. Then, the turtle could be crocheted. This was completed in early April, to allow time to decorate with collected trash.

The trash collection was ongoing and continued up until just before the art was displayed. At some point in early spring, after the crocheted background of the turtle is completed, a design for how the trash will be arranged must be completed. This will be based on the trash collected by that point and projections for what may still be acquired up until installation.

Once the Google page was created, a bit.ly shortened URL was created, and then a QR code was produced to lead to the bit.ly shortened URL. The QR code image could then be replicated in knitting.

The art installation was installed just before Memorial Day weekend, as that is the unofficial kick off to summer. By that point, it is warm enough for the turtles to start making appearances, and for more people to use the park also. Memorial Day weekend is also a time when people will gather with family and use the picnic shelter, and normally when schools are not closed for pandemics it is just before school is out for the summer;

therefore, ensuring that the art installation was established by that point was to reach the greatest audience. The art installation remained in place for one month.

Assessment

I will be able to judge the effectiveness of the art installation in two ways. First, through casual observation. Does the quantity of litter seem less than in previous years? Do I see people scanning the QR code and looking at the art installation? Do I hear people talking about it, either at the park or online in local community groups? Are fewer people feeding bread to the birds and turtles? Secondly, I can track engagement by numbers. Using a bit.ly shortened URL will give me data on the number of scans of the QR code, and I can track this over the time that the art installation remains in place. Use of the hashtag can also be tracked.

Summary

In summary, an art installation was created to motivate the users of Sullivan Lake Park to consider the environmental effects of their littering and promote more PEB. The need for this was inspired by the quantity of litter found in and around the lake, a fact that contradicted with the very vocal appreciation of the park and wildlife by those who live in the neighborhood, and is the answer to the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* The popularity of the snapping turtles inspired the form of a snapping turtle made from plarn and adorned with trash acquired at the park. A QR code leads to more information about environmental issues and PEB. The timelines for the project was

construction over the winter of 2019-2020 with installation before Memorial Day weekend, 2020. The next chapter will examine the reality of these aspirations.

CHAPTER FOUR

Conclusion

Context

The purpose of this project was to answer the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?* I created an art installation to raise awareness of the environmental problems at Sullivan Lake Park, and inspire people to practice habits that are more environmentally friendly. The two biggest issues that I have observed are the quantity of litter in and around the lake and people feeding bread to the waterfowl and turtles. I wanted to find a way to address both issues in a creative way that does not directly blame or shame people, but encourages community discussion and allows park visitors to come to their own conclusions and hopefully actions that are more pro-environmental. The project consists of an art installation, to be displayed at Sullivan Lake Park, as well as a knit QR code to accompany the art, and a website that the QR code will lead to.

This chapter examines the processes of gathering materials, creating the art installation and website, seeking city permission to display the art in the park and the learning that occurred along the way. Next, it reviews the literature discussed in Chapter 2 as I determine what was the most important and make new connections and understandings of the literature and the implications that are brought up. This chapter then covers the limitations of my project, ideas for future research and projects, my plans for communicating the results, and the benefits to my profession.

Major Learnings

One thing I have learned through this process is that other people are more excited about this project than I am, and that comes as a surprise to me. However is novel to others, and I may just be sick of it after nine months. Perhaps I should have anticipated the eagerness to be involved, as in my experience, people do like to help and want to feel that they have contributed to something bigger than themselves. In order to have enough green plastic bags to be able to crochet the turtle shell, I posted on social media asking for donations of green plastic bags. Many people shared my post and were excited to help. Numerous people saved their bags for me, and some actively searched out more green bags. A few people, my mom included, continued dropping bags off at my house long after I confirmed I had enough. It is nice to realize that people are happy to help out, to be part of something on behalf of someone else, and to find a good way to reuse plastic. I wish I had found a good way to make my art installation more interactive, which my content advisor and peer reviewers had suggested. I did not have any solid ideas for implementing this, nor did I end up having the time. Although it is still too soon to tell, I believe this project would have had a greater impact if there was a way for those who see the art installation to engage with it.

Another learning was about the nature of the issue itself. As a casual observer of the trash at the park in the past few years, and when I was doing research and writing the project proposal, I saw some of the trash and made assumptions based on these observations. The trash I saw was mostly plastic bottles, food wrappers, and bottle caps-items that looked like they may have been improperly discarded or rolled away after a

picnic or during a walk. When I began collecting trash in earnest, however, I found lots of trash of different kinds. Some pointed to clandestine fun: many mini liquor bottles, chewing tobacco containers, and a condom wrapper. Other items seemed bizarrely out of place, particularly items like dental floss picks and used plastic tampon inserters, which I have a hard time envisioning anyone using in this environment. To paraphrase the writer Ian Fleming, “Once is chance, twice is coincidence, but three times is a pattern,” and there was a pattern of finding these types of items regularly in the lake. This reframed my thinking around where the trash was coming from and how it ended up in the lake. I still do not have definitive answers for either of these questions.

In addition to wondering more about the why and where of the trash, seeing it all up close made me question what the trash was. Trash found along the walking path might commonly be cigarette butts, receipts, or food, but with the exception of glass bottles and aluminum cans, everything I pulled out of the water was plastic. Was there more trash made of plastic being deposited compared to trash made of other materials? Maybe. Does the plastic trash take longer to decompose than food or paper? Definitely. Furthermore, all of the trash at the park is consumer-related items, many of which are single-use and many of which are plastic. Many of these items do not need to be made of plastic, and often were previously made of cardboard or other more biodegradable materials. Examples are tampon applicators, cotton swab sticks, and Swisher Sweets tips. Plastic versions may be cheaper for the consumer, but at what cost to the environment?

I have been a skeptic of the campaign in recent years to quit using plastic straws. I have been cynical of the reusable metal straws marketed at coffee shops, seeing it just as

jumping on a trend to make a profit rather than a difference. However, the vast number of straws I have collected has made me rethink that. I think that banning straws would make a very visible difference in the quantity of trash in this lake, even if straws only comprise a tiny portion of the plastic waste worldwide.

During the process of collecting trash and crocheting the turtle, I learned that in order to publicly display the art installation at Sullivan Lake Park, I would have to create a project proposal and submit it to the local park board a week before their monthly meeting at the end of April. For this I created a document with some background information, rationale, photos, and details about the proposed site and timing of the art installation. The member who answered my questions and responded to my submission was excited about the prospect and very supportive. Just before publication in May, I heard back and was given permission to display the art installation.

To answer the question, *How does an art installation work to educate and persuade park users to practice pro-environmental behaviors at Sullivan Lake Park?*, I must look at both tasks separately. An art installation educates directly through the visual of the trash-covered turtle. It is huge, and impossible to ignore. Even without the literacy needed to access the information on the website, children and non-English speakers can identify the types of trash that make up the turtle and make inferences based on the location and context. Those with the means to access the QR code and ability to read the information on the website can learn more about the environmental issues and pro-environmental solutions and alternatives. Persuasion comes from education and

awareness of the issues, appealing to emotions, and empowering park users to make an individual difference as part of a larger, group effort.

Literature Review

This project successfully connected back to the definition of pro-environmental behavior (PEB). Macy and Brown (2014) defined PEB as actions that “bring our lifestyles and consumption into harmony with the living systems of Earth” (p. 4) and then categorized those actions as those that directly stop environmental damage, change the structures of society to be more eco-friendly, and shift social values and consciousness. Through my art installation, I sought to make my neighborhood more environmentally friendly by shifting the social consciousness of the issues of litter and feeding bread to wildlife in hopes of changing the structure of society. The aim of this awareness is that people will change their habits to be ones that are more sustainable for the help of the water quality and animals at the park.

A major difficulty in properly targeting the audience in this endeavor is that the barriers to PEB are largely personal, and while I could make an educated guess based on the literature, it was hard to know how much each of the barriers influences individuals in my target population. Some of these barriers I was unable to address: time and cost. However, I tried to account for and lower the barrier of temporal discounting (the idea that small steps now prevent big problems later) by showing that switching the food fed to ducks from bread to vegetables like peas and corn could prevent the condition of angel wing in growing birds. I also tried to address the barrier of feelings of personal ineffectiveness and hopelessness because I hope that people are inspired by seeing how

much difference one person makes. Even if I only inspire one or two other people to pitch in with picking up litter, we are visible to others and that increased visibility may tip the balance so that people feel that it is a supported and shared community effort. I believe that gains can be made to fight the tragedy of the commons (Harding 1968), as there was evidence that people care about the park and the community, and that this outweighs their selfishness. While there may still be free-loaders, my interactions with the community give me hope that people are less worried about what others are and are not doing and are willing to do more than their 'fair share' to pitch in with litter collection. Two of the ways to combat free-loading as noted by Pruneau et al. (2006) and Walsh and Warland (1983) were being unaware of the issues and unaware of the efforts to combat the efforts and this project addressed those directly.

Pruneau et al. (2006) organized the factors that influence PEB into three categories: 1) level of awareness and knowledge of the environment and the issues, 2) emotions, feelings, and personality traits, and 3) situational factors such as social influences. I attempted to influence all three of these categories through my project. First, I addressed the possibility of a lack of awareness by providing that information through the website. Second, I made an appeal to emotions by using art. Creating a turtle appeals to the positive connection that many people have to the turtles in the lake. My hope is that seeing the trash evokes either sadness or anger that can be channeled into taking action. Third, I believe that social influences, while more subtle, are also at play. Seeing art created by a neighbor for the community hopefully makes people feel more connected. With the limited interactions people are currently experiencing during the stay at home

orders during the COVID-19 pandemic, I believe people are looking for human connection and ways to relate with others. If upon seeing the trash previously they felt it was the responsibility of the local government acting through sanitation services to deal with the trash, perhaps seeing action taken by a fellow citizen will help install both a sense of responsibility and the hope that their individual actions can make a difference.

Another factor brought up by Hines, Hungerford, and Tomera (1986) was knowledge of action strategies and locus of control. The website proposes action strategies for dealing with the litter issue and ideas for foods to feed the wildlife that do not have the harmful effects of bread. The ideas presented are all options designed to be within the locus of control of the audience.

Implications

While large, collaborative efforts towards increasing PEB are important, it was clear that even my personal efforts to clean up trash were well received and possibly inspired others. The number of people who thanked me for picking up trash as they passed me on the trail surprised me. Creating that good feeling and inspiration is good for the community even if it does not produce immediate results. Likewise, the number of people who were excited to help me collect plastic bags showed that people are excited about being part of an environmental initiative, at least when the effort required from them was minimal. This indicates that projects that involve others with low barriers to participation may be popular and thus effective.

Limitations

There were quite a few limitations of this project. Some of these were due to the nature of the project guidelines given by Hamline University. I had hoped to do anonymous surveys to learn more about specific demographics of who uses the park and why, their sense of belonging and ownership of the public space, and PEB they already do regularly, and try to gauge their awareness of the issues. For example, many people clearly think that the trash found in the park is an issue. Unfortunately, data collection was not part of the capstone project and thus surveys were beyond the scope of how the project was developed.

Every time I went out collecting trash, there were many strangers who walked by on the path who thanked me for picking up trash. One child must have asked who I was or what I was doing, because the response from the parent I overheard was, “She’s a good person. She’s cleaning up trash.” Yet there must be far fewer people who think that feeding white bread to the animals is an environmental issue. One reason I believe that is because I have never seen anyone openly littering at the park, but I often see people openly feeding ducks or turtles with their children. I have even had people thank me for cleaning up the park while they are feeding ducks. It is unclear to me if they do not know about the environmental concerns of feeding the animals, which might explain the willingness to do it openly where other people can see it. As previously stated, while the quantity of litter is easy to see, the negative impacts of feeding the wildlife is not. Without those visual cues it may be hard for park users to 1) see feeding the wildlife as a real issue, and 2) realize the actual impact of their behavior or changed behavior.

Another possibility is that they do know that it is not a great idea, but due to a certain level of social acceptance, they feel comfortable doing it openly. Minnesotans, myself included, can be passive aggressive and unwilling to openly call people out on their negative behavior so there is a certain amount of safety in publically behaving badly and people may give you dirty looks or mutter under their breath but not call it out directly.

Another limitation is the reach of this project. The materials I share on the website are only in English, and not everyone who lives in this area speaks English as their first language. Should someone really want to read it, there are online options for translating, but I have not provided any. I hope this is not a barrier to those who want more information about PEB.

Misinterpretation of the art could be another limitation. If people look at it and think the message is solely about litter, they will miss the messages about feeding the animals. There is a strong possibility of this happening if people do not scan the QR code. Focusing on the issue of the litter is still great, as any inspiration for PEB is a win, the way I see it. Another misinterpretation that came up while I was working on the art was people thinking the idea of the project had to do with reusing plastic bags. If they feel inspired to recycle, reuse, or repurpose plastic bags, I think that is fantastic, but it was not my specific goal.

Future Research and Projects

The limitations make it easy to find areas of future research. Determining exactly who the population of park users and their PEB through surveys would be helpful in

determining the scope and focus of a similar project or follow up project in the future. I believe there is still a lot of work to be done in teaching people about better options for feeding the animals, and this would be better informed by knowing exactly what the views are regarding feeding animals. As stated in Chapter 3, a potential follow up to this project in the future could be a GoFundMe for a simple vending dispenser, such as those used for dispensing gumballs, that would be filled with appropriate food pellets for feeding the turtles. Soliciting input on other types of PEB to encourage in this specific park or my community would also inform future projects. With some research on local issues and populations, this project could easily be replicated in another community or park in my community.

As noted already, finding a way to engage the community through the art and including ways for people to participate would be an improvement for any project in the future. It could be something like using the website to start a photo challenge, documenting the before and after of personal trash pickup. It could even be as simple as using my community's Facebook group as a platform for asking for plastic bag donations for another planned art installation. Art installations could be used to focus on other environmental issues, to heighten appreciation for nature and sense of place. One example would be creating monarch butterfly wings using orange and black plastic bags. If the wings were scaled to size for a human-sized butterfly and installed on a wall or fence like the turtle, people can have their photo taken with the wings behind them, imagining themselves as a butterfly. Similar ideas have been done through painted murals.

Personally, I am ready to be done crocheting plastic for a while and get back to creating knitting designs that are inspired by nature. Less art with a purpose and more art for pleasure. I want to investigate what other artists have created and are doing at a larger park in the area, Silverwood Park to find more inspiration and perhaps pursue a collaboration in the future.

Communicating Results

If the park board asks, I am happy to share information on user engagement from my bitly tracking. I am not sure who else would be interested in hearing about the results. Additionally, I would be happy to collaborate and share information with anyone looking to do something similar in the future or bring these ideas to a wider audience or greater level of access.

Benefit to the Profession

Anything that increases PEB is a benefit to the environment and also creates a nicer community for humans as well. Within environmental education, there is a lot of discussion on whether we should be trying to influence those we educate to be eco-conscious or practice PEB or if we should just present the facts and let people draw their own conclusions and ideas about what to do, if anything. Clearly in this situation I fall into the former group, as I hope that people will change their behavior based on the art and information I am providing. I do not feel this is unethical to try to influence others to behave the way I am promoting, as I am not in a position of power over the audience, and as the audience is mainly adults, or at least children with their caregivers. This is different from when I teach K-12 public school, where I feel I can bring issues to light

and ask questions to scaffold critical thinking, but need to avoid using my my position of authority over the students or my power as someone who grades them to sway them into taking a position that aligns with my thinking.

I hope that this project benefits the profession as a glimpse into trash art on a small local level, particularly as I am not associated with a museum, movement, group but identify as a local community member. In my research, I did not find examples that were specific and limited to such a small community. Most trash art examples I found online were created with trash found on ocean beaches, which is a bit different scale than a lake with less than a quarter mile circumference. My goal was to reach a diverse audience, and while I do not think I reached a gold standard for this, it is important to open and continue the discussion with all the stakeholders, and that is a goal of environmental education.

Summary

This chapter summarized my thoughts, experiences, and learning during the creation and implementation of the art installation to inform and instigate PEB at my local park. Some of the surprises for me should have been foreseen based on the research that if getting involved is easy and doable for people and they can see the positive benefits, they will be more likely to continue to engage in pro-environmental behavior (Pruneau et al., 2006; Quimby & Angelique, 2012). People were eager to help me collect plastic bags and excited to see me collecting trash. Much of the learning for me came through collection of trash for creating the art installation. I realized that much of the trash was unlikely to be from local litter, which raised the question of origin.

Additionally, seeing consumer- related plastic products made me think deeper about the use of single-use plastics as a society.

Unfortunately, there were many limitations of this project, some related to the lack of research of the specifics of the park users and their activities and motivations. Additionally, while I was able to address some barriers to PEB such as temporal discounting and tragedy of the commons through addressing feelings of personal ineffectiveness, others were more difficult to address, such as time and cost, and others could not be determined without knowing the habits and motivations of the target audience better.

Looking back to the beginnings of this project, I still believe that through education, people will want to help make the park a better and healthier place for generations to come. Certainly, my own educational experiences, personal values, and commitment to community are what have led me here. As I stated earlier, my particular interest in the park, and my investment in my community in this practical way has impacted the focus of my education. Now, I hope that the focus of my education has helped to build positive relationships amongst people in my community and promote the social and environmental health of the community.

Conclusion

While this was a venture into connecting art, my community, environmental education, and a shared love for turtles, it is by no means finished. I hope the turtles, the art, and the friendships formed at the lake continue to encourage others in my community and inspire environmental action through personal efforts and collaboration. Sullivan

Lake Park can continue to be a place where people can connect and be in nature- perhaps now with a common goal and a healthier future. I hope that new voices and perspectives continue to be added as we, as a community, transform thinking about what use of the park could look like for some time to come. Thank you for being an important part of my community.

APPENDIX

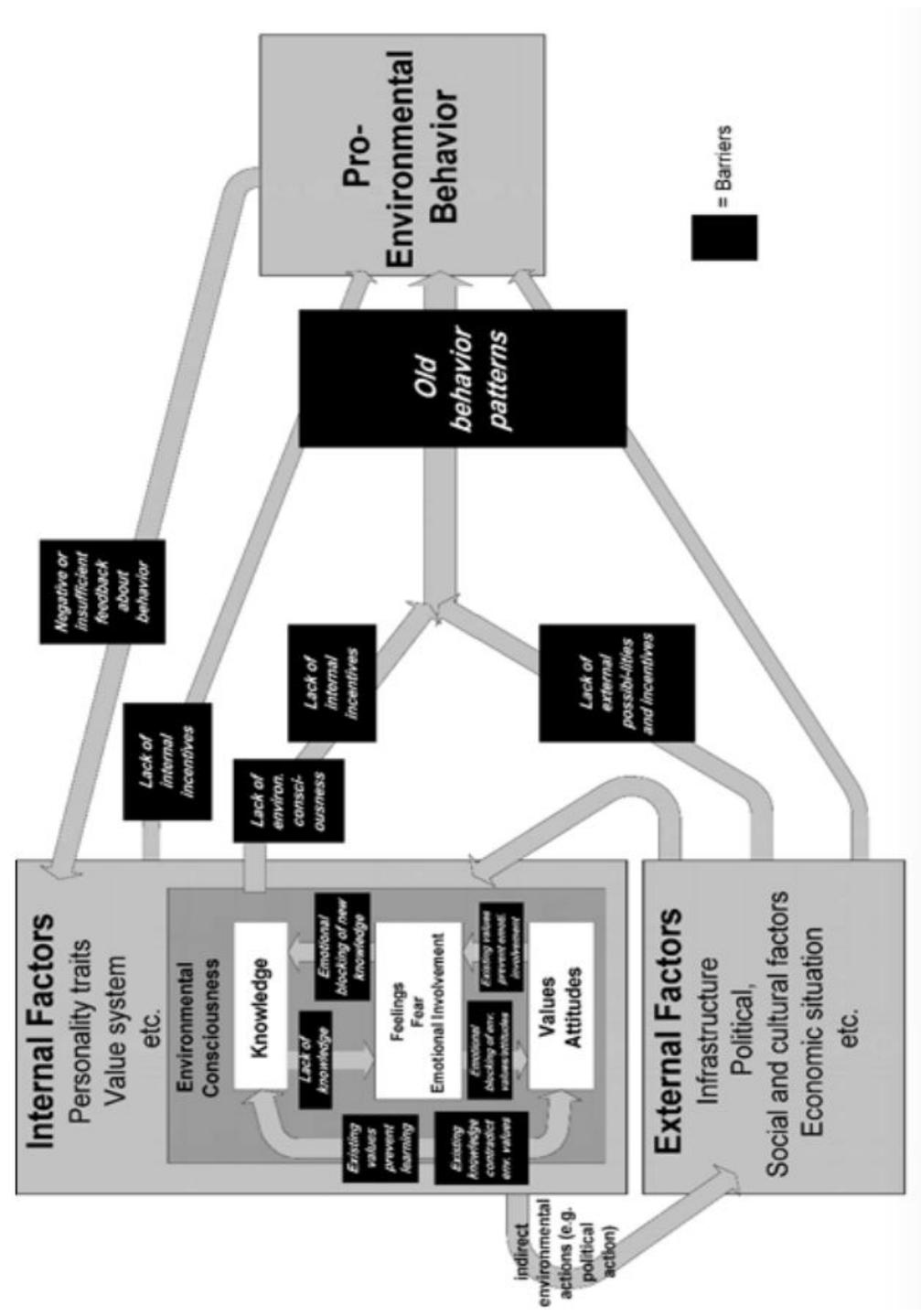


Figure 1. Model of pro-environmental behavior (Kollmuss & Agyeman, 2002; reprinted with permission).

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