

DISSERTATION

RISKY PHOTOGRAPHY IN NATIONAL PARKS: AN EXAMINATION OF THE ROLE OF
ONLINE IDENTITY MANAGEMENT IN WILDLIFE RISK PERCEPTIONS

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Caitlin Evans

Department of Journalism and Media Communication

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Doctoral Committee:

Advisor: Katie Abrams

Gayathri Sivakumar

Marilee Long

Elizabeth Williams

Tara Teel

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ABSTRACT

RISKY PHOTOGRAPHY IN NATIONAL PARKS: AN EXAMINATION OF THE ROLE OF ONLINE IDENTITY MANAGEMENT IN WILDLIFE RISK PERCEPTIONS

Technology and an ever-growing online culture has created a new space to display, modify, and maintain personal identity. These spaces can often perpetuate risky behaviors offline by creating a need to share, comment, and like photographs and status updates. This need in online spaces is blurring our online and offline identities. Previous research has indicated a motivating factor for social interaction as the need for social capital. Social capital is defined by the resources we gain from our connections with others and online spaces might be creating a new space to foster and maintain these connections with others. Research has also indicated multiple types of social norms as a factors in the human decision making process. This is true for both risk communication and environmental communication research. This research examined the relationship between online identity management and risk perceptions pertaining to approaching wildlife in national parks to take photos. It proposed a theoretical model of wildlife risk perceptions and identity that investigated relationships between online wildlife photography social norms, online social capital, online identity management, wildlife risk perceptions, wildlife risk social norms and the likelihood of taking risky wildlife photographs.

Utilizing survey methodology, college students were asked a series of Likert-style question. Pearson's correlations were conducted to investigate the relationships among some of the independent variables. A multiple linear regression analysis was conducted to investigate the impact the independent variables (online wildlife photography social norms, wildlife risk social

norms, wildlife risk perceptions, interest in online identity management, and social capital) have on the dependent variable (likelihood of taking risky wildlife photographs). Finally, a multiple linear regression with interaction effect was conducted in order to investigate a connection between wildlife risk perceptions and interest in online identity management. Participants were also asked open-ended questions in order to get a more in-depth analysis of motivating factors for risky wildlife photography. Findings indicate that social norms impact the likelihood to take risky wildlife photographs both directly and indirectly through their correlation with wildlife risk perceptions. Online social capital and social norms both influence online identity management. Wildlife risk perceptions, wildlife risk social norms, and park familiarity significantly predict likelihood of taking risky wildlife photographs. The qualitative data indicated a difference in individual's beliefs about the risk level of certain wildlife. Risk perceptions and what influences those perceptions seem to be the factors most influential in the likelihood of taking risky wildlife photographs.

Social norms, risk perceptions, and online identity play a small part in the decision to take risky wildlife photographs. Participants also seemed to think that education about wildlife or illustrating negative experiences might increase risk perceptions and cause people to think twice about getting too close to wildlife in a national park. The complicated nature of risk perceptions poses a problem when it comes to message design. Different people have different perceptions about certain types of wildlife. However, increasing awareness about the dangers of wildlife, pointing out how getting close to wildlife is dangerous for the wildlife themselves, creating social norms about behavior around wildlife all might be potential avenues that communication practitioners and park staff could use to help reduce human-wildlife interactions in parks.

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CHAPTER ONE: INTRODUCTION

Reported incidents of human-wildlife interactions have become so common that recent news articles are warning tourists to keep a safe distance from wild animals. In February of 2017 a Singapore news outlet published a piece titled “The Big Read: As animal encounters hit the headlines, a divide opens up.” In it the author discusses an ever-growing human-wildlife interaction issue due to more green spaces in the Singapore landscape. *Jackson Hole Daily* reported on multiple incidents of human-wildlife interactions in order to urge visitors to be safe. A black bear recently attacked a teenager at Glacier View Ranch in Boulder County, Colorado (Padilla & Vigil, 2017). In Cleveland, Ohio, multiple coyote incidents have occurred concerning wildlife experts that coyotes are now being misunderstood in the area (Auh, 2017). In July of 2017, *CTV News*, a Canadian News outlet, recounted multiple incidents of humans getting too close to wild animals even stating that “videos and pictures of people standing unbelievably close to wild animals are becoming more common.” News articles have also started reporting on the dangers wildlife face, not just the dangers to humans. In fact, in an article by *The Atlantic*, the author points out the risks to the wildlife noting that “the greatest threat to grizzly bears is conflicts with humans themselves.”

In a recent article about why people might be getting close to wildlife, Kaufman (2017) states that, “humans often behave unwisely around large creatures, and nowhere is this more apparent than in our national parks” (Kaufman, 2017). News articles like this one, anecdotal evidence from national park staff, and other research prompted the current study into human-wildlife interactions. In 2016, the National Park Service (NPS) became interested in exploring new, research-based techniques they could use to address problematic visitor-wildlife

interactions in its parks. NPS partnered with researchers at Colorado State University to create and test a communication and visitor management framework that all national parks could utilize to reduce undesirable human-wildlife interactions in the parks. One specific type of interaction identified was visitors getting too close to wildlife. The current study was initially influenced by this partnership and subsequently continued as a separate project to investigate underlying social-psychological factors potentially motivating people to violate wildlife viewing distance rules in parks.

One of the potential motivating factors involved in humans getting too close to wild animals is for photography. In fact, *The Washington Post* covered a bison attack in Yellowstone National Park citing it as “another photo going awry” and discussed multiple incidents where people got too close to bison to take a photo. These types of risky photographs have become more and more common. For example, dolphin photos taken from a beach in Argentina (*BBC News*), tourists in China picked up peacocks for selfies (*Digital Trends*), a man pulled a shark out of the water for photographs (*Metro*), a swan was killed because of a selfie (*The Huffington Post*), sea turtle selfies nearly ruined breeding patterns (*Tech Times*), a man was bit by a rattlesnake trying to take a photo with it (*CBS News*), and multiple bison attacks have been cited (*CNN*; *PetaPixel*) (Mara, M, 2016; Naqesh, A., 2016; Hanson, H., 2016; Ranesa, T., 2015; Seidman, B., 2015; Mullen, J., 2015; Zhang, M. 2015). These are likely only a fraction of reported incidents that resulted in some significant harm to the people and/or animal or went viral online, therefore, making the media more likely to cover it. Many other human-wildlife interactions stemming from people wanting to capture photos may have gone unnoticed even though the actions were risky and potentially harmful to animal and human alike. A large proportion of these incidents are happening in or near national parks.

One potential reason for risky photography in national parks is due to the growth and change in technology. Front-facing cameras and the immediacy of social media platforms like Instagram and SnapChat, make online photographs an interesting and ubiquitous phenomenon. The telephone has long been a way to communicate across distance. The invention of the mobile phone or cell phone has made it easier for people to communicate when they are outside of the home. With the addition of the camera to the mobile phone, we now have numerous opportunities to photograph our everyday lives; many people's best camera is now in their pocket at all times. Alongside mobile camera phones, the Internet and the ways people use the Internet have changed tremendously. Social media sites have encouraged the use of the Internet for social and human connection purposes. Mobile camera phones, the Internet, and social media sites have made sharing our lives easier than ever. One of the ways we share is through visual communication and photographs of our everyday lives. We can, not only, take photographs wherever we are and whenever we want, but we can also post them online and to social media sites just moments after we take them. Some of the most popular social media mobile apps like Facebook, Instagram, and SnapChat are centered on or offer the capability of using the app itself to take the photo (and then immediately post or save the draft for later once a data connection becomes available) by accessing the phone's camera hardware. Live, streaming video is also increasing in popularity on platforms like Facebook and Twitter (Feedly, 2016). This allows events to be shared as they are happening while also recording and saving the video for later viewing.

Online posting of visuals and the ability to share images and videos via text messaging with close friends and family have the potential to create a sense of presence with those we are not really with. Villi (2015) explains in detail what mediated presence means and how camera

phone photography influences the ways we communicate presence in our everyday lives. “Mediated presence does not refer to a physical, face-to-face presence, but rather to a feeling of presence, a communicative presence” (Villi, 2015, p. 5). Villi (2015) argues photographs have always been part of presence, but in the past it was a display of what was; today, with the advances of mobile technology, photographs showcase what is. This type of photography, then, is similar to words spoken on a phone. They are important to our interpersonal interaction and engagement. Hjorth and Hendry (2015) look at camera phone practices and point out the difference between first-generation and second-generation camera phone uses; images used to be uploaded unto computers and then to photo sites and today, “second-generation camera phone practices are characterized by smartphone apps like Instagram” (p. 1). These second-generation camera phone practices are heavily defined by the ability to instantly post photos in online spaces or to share with friends and family via text messaging moments after they are taken. The iPhone operating system ten even includes a camera option within text messaging, rather than needing to take the photo outside of messaging and input or upload a photo later making it that much easier to share photos instantly.

Social science struggles to keep pace with the potential short- and long-term impacts on human behavior due to the speed at which technology advances today. Technological advances have made it easier to post visual content, make status updates, and share political, cultural, and other worldviews. This type of dissemination and content curation has created a ripe environment for managing our identity in online spaces. One way in which we might manage our identity online is through photography taken in offline spaces. The aim of this research is to investigate one specific offline space, national parks. From technology (hardware and software advances), media reports, social media posts’ trends, and anecdotal evidence from national park

staff, it is possible this new photo- and video-centric sharing culture is driving more people to approach and interact with wildlife for risky photography. Broadly, this research aimed to examine how technology and risky photography is impacting the ways in which humans create, disseminate and manage their identity online and how that behavior is influencing offline actions. Specifically, risky photographs of wildlife could potentially be fueled by our need or want to post these images in online spaces, to share with close friends and family, and to create our online identity through visual communication. In fact, in 2015 there were over 300 million recreation visits to national parks (IRMA, 2015). While we do not know the exact reason or motivations for park visits, it seems reasonable to speculate that a major draw is due to the chance of encountering or viewing wildlife in their natural habitat. As mentioned earlier, the risks of wildlife photography are not only imposed on the visitors engaging in the actions, but also the wildlife who may become habituated.

Habituation of wildlife is an issue affecting national parks across the country. Habituation impacts wildlife in multiple ways. According to Wieczorek, Hudenko and Decker (2013), there are both wildlife-specific effects and human-specific effects of habituation. Wildlife effects include, but are not limited to stress, ecological shift and food conditioning. Human effects include, but are not limited to increased wildlife viewing, risk taking, questioning of park management, and lack of understanding of ‘wildness’ in natural areas. Often habituation is caused by human behaviors. Wieczorek, Hudenko and Decker (2013) identified the reasons behind human behaviors that are often causing habituation: “...a natural human desire to be close to wildlife; the challenge for getting close to perceived ‘wild’ animals; seeking opportunities to photograph wildlife; the adrenaline rush because of the risk of approaching wildlife; lack of appreciation for or misunderstanding of wildness, or the effects on wildlife such as stress” (p. 8).

When we seek to address harmful and unsafe behaviors for humans and wildlife, identifying these kinds of motivations and influences are important. It seems plausible that the thrill of approaching wildlife for photography is a major motivator fueled further by online identity. Pearce and Moscardo (2015) looked specifically at selfies with wildlife and found that selfies were “also linked to actions such as animal feeding that, in turn, contributes to more frequent negative human-wildlife encounters in general, sometimes resulting in destruction of animals...” (p. 64). Risky photography of wildlife in national parks has the potential to cause habituation and other dangerous situations for humans and wildlife.

This research examined what relationship might exist between online identity management and risk perceptions surrounding national park visitors’ likelihood to take risky wildlife photographs. Fulfilling this purpose reveals whether there is a new theoretical relationship between online identity and offline risky behaviors that risk communication scholars and practitioners should consider when designing messaging. It also investigated potential influencers on online identity management and wildlife risk perceptions such as online social capital and social norms. The following research question guided the study.

Research Question: What factors are motivating people to engage in risky wildlife photography in national parks?

CHAPTER TWO: LITERATURE REVIEW

In order to begin to answer this broad research question, a review of current literature in identity, social capital, social norms, and risk is needed. First, an overview of identity will lead to a conceptual definition of online identity management. The literature review will then discuss research on social capital culminating in a conceptual definition of online social capital. Next, it will review social norms and how the Theory of Planned Behavior might help explain the impacts of social norms on human behavior. It will then review risk perceptions, define what that means for this study specifically, and utilize the Disruption Information Seeking and Processing Model to illustrate how risk and identity might be connected. Finally, a proposed theoretical model will be reviewed that looks at how social norms, social capital, online identity, and risk perception may be influencing the likelihood to take risky wildlife photographs.

This approach has the potential to give researchers and practitioners a new way to look at message design and risk perceptions when it comes to risky behavior choices and ways to potentially influence healthier behaviors. It provides a new theoretical area of exploration that intersects risk communication with online identity. This is an important shift given the changing landscape of online communication spaces. The specific aim of this study was to further understand motivators of risky wildlife photography in national parks. Therefore, this research investigated how the importance of online identity management is potentially outweighing risk and influencing individual's likelihood to take risky wildlife photographs.

2.1 Identity and Self

An increase in online activities including photography has contributed to the blending of our offline and online identities. Identity and self-presentation norms in these online spaces has

the potential to motivate individuals to get too close to wild animals in national parks. Identity and presentation of self are closely tied to how we create meaning. “Meaning is not reducible to individual interpretive process, nor does it exist independently in a stable, immutable social world. Rather, it is constituted through the communicative interaction of humans in a semiotic environment” (Mumby, 1989, p. 303). The ways in which we create meaning and understand the world around us is a complicated process, often influenced by those we are close to as well as the environment of which we are a part of. In other words, who we are and how we make meaning in this world, is grounded in our interactions with others. One could argue that one way we create meaning in this world is through defining our self-image and identity and finding a place that we belong.

Cerra and James (2012) discuss our self-image as forming early in childhood and how that image is based on our own self perception of who we strive to be. We often perform the self in different ways for different people based on the expectations they have of us. “From the time we discover ourselves as unique entities in this world ... human beings strive for security and significance ... the quest for significance is at least partly influenced by our ability to project an attractive image to others” (Cerra & James, 2012, p. 9). Our identity, then, is rooted in expectations and our relationship with others (Christiansen, 1999). Relationships with others and the ways we learn expectations are created through interaction and communication with others. Our identity, our values, and our beliefs are deeply rooted in our communication. How we define the self and present that self to others is a big part of our social world, which now has a critical existence on the Internet. The next few sections will explore more deeply how we create meaning, define the self, and what that means for our online identity management in a digital world.

2.1.1 Symbolic Interactionism

We all have an idea or notion of our own identity and what that might mean to us personally, but most individuals take for granted the day-to-day interactions with others and events that help build this identity or sense of self. Symbolic interactionism is the concept that describes how our interactions with others creates meaning and how that meaning creates the notion of self, identity, and the society we live in. George Herbert Mead is often credited with the concept of symbolic interactionism. “He claimed that the mind is a result of an exchange of social acts, language being the most complex social act in which people engage” (Benzies & Allen, 2001, p. 543). Language and, in turn, communication, are what we use to share and construct meaning in a complex world. Mead defined the self as two parts: the “I” which is impulsive and spontaneous and the “me” that takes into consideration the expectations of others (Benzies & Allen, 2001). The self is defined by the interplay between our natural impulses and the expectations of others. Expectations are gathered through communication and interaction in a social world that tells us how to behave and how not to behave. We often balance who we are and who we want to be with the expectations of others. In other words, we define the self based on the culture and society we are raised in. According to Brake (2014), symbolic interactionism “...focuses on how meanings are jointly created through interactions between individuals rather than being created in isolation by the speaker and passed on to the listener” (p. 42).

Benzies and Allen (2001) point out the three basic assumptions of symbolic interactionism:

“First, people, individually and collectively, act on the basis of the meanings that things have for them. That is, people do not respond directly to things but attach meaning to the things and act on the basis of meaning ... Second, ... meaning for an individual emerges out of the ways in which other individuals act to define things ... Third, meanings are assigned and modified through an interpretive process that is ever changing” (Benzies & Allen, 2001, p. 544).

We negotiate meaning and that entails a negotiation of self and identity. With the advent of technology like social media sites and camera phones, our identity has shifted into a blur of online and offline spaces that interact and impact each other in many ways. Who we are is based on this interplay of, not only face-to-face interactions, but, also, online interactions. Technology and the Internet are impacting our sense of self and that is having an effect on the actions we take in offline spaces. Symbolic interactionism is not just about defining the self and how it comes to be, but also about society. Benzie and Allen (2001) point out that:

“perhaps the most important tenet of symbolic interactionism is the idea that the individual and the context in which that individual exists are inseparable... As such, the social world exists as a creation of human interactions. Society consists of individuals involved in interaction within larger networks of other individuals and groups” (p. 544).

The context and social norms we create and negotiate with those around us and our community have a large impact on our behavior and our sense of self. The point here is not to dissect the symbolic interactionism concept in its entirety, but rather to point out that identity and self are deeply rooted in communication and that interaction with others is also what shapes society and culture. According to Stryker (2008), “society emerges out of interaction and shapes self, but self shapes interaction, playing back on society. Society is continuously created and recreated as humans inevitably meet new challenges” (p. Stryker, 2008, p. 17).

Symbolic interactionism led to social constructionism. For social constructionists, truth does not exist outside of human interaction. Humans, then, create or construct a social world based on joint assumptions with those they interact with. What we believe and what we know is constructed through our social interactions. Conversation with others is the main way that we construct our realities. Part of that construction process involves defining who we are in our social worlds. “Social constructionism places great emphasis on everyday interactions between

people and how they use language to construct their reality” (Andrews, 2012, para. 25). Self, then, can be defined as a communicative act. Gratz and Salem (1984) point out that “...the entire communicative process is a necessary condition for a person’s self-concept development and for the emergence of individual identities and personalities” (p. 99). With new technologies, communication and language have also become more visual in nature. Visual communication and the meanings we create through images as a way of defining who we are and constructing meaning within a social world will be addressed in more detail later. Let’s first turn to a prominent scholar in the definition of self and identity.

2.1.2 Goffman’s Presentation of Self

Erving Goffman has been a key influencer in identity research. In Goffman’s (1959) seminal work, *The Presentation of Self in Everyday Life*, he explores the notion of performance, self, and how individuals use impression management techniques. Goffman (1959) proposes that we have a “front” stage and a “back” stage. Our front stage is our presentation of self to others. Our back stage is our “true” self. Individuals rarely let others see his or her back stage. The presentation of self can change depending on context, audience, and feedback. The presentation of self, then, is a performance based on the social norms and expectations of those in the imagined or perceived audience (Brake, 2014). “Our presentation is a reflection of our image and is subject to control” (Cerra & James, 2012, p. 39). Who we “perform” to be on our “front” stage is partly influenced by who we think others want us to be. We use audience feedback as a way to construct and change our performance or identity and the audience and context we receive feedback from is always changing. According to Braun and Niederdeppe (2012), “this is not merely selective self-presentation but a claim that we ourselves understand our lives differently in interaction with different people and/or in different situational contexts through the use of

different interpretive frames on our experience” (p. 145). The self and our identity can shift based on who we are with and where we are, both in time and in space. In other words, we construct reality through our interactions with others and those same interactions impact our sense of self and assist in defining who we identify ourselves to be. The self and our communication with others negotiate meaning and create social norms that we agree upon as a community or society. These social norms and the different contexts we perform the “self” in, tell us how to behave and how not to behave. When it comes to the Internet and social media sites, a perceived or imagined audience is what determines how we behave and what the social norms are in those spaces. Often, our imagined audience in online spaces includes a much broader group of people than we would normally interact with in offline spaces or in face-to-face communication, making identity management in online spaces more complex.

Technological advances have altered the ways in which we communicate and negotiate meaning. If we agree that identity is rooted in communication and that the Internet and social media sites have created new social spaces, then technology has shifted the ways in which we construct and create meaning and the ways in which we define the self. The advent of the Internet was first touted as a great place for anonymity (Kennedy, 2006). A space that people could be their true selves without repercussions in everyday life. An increase in access, availability, and new social realms like social media sites has turned the Internet and online spaces much less anonymous (Kennedy, 2006). When our real name is tied closely to our digital identity, we are often more careful with how we present ourselves online. For example, forum sites (e.g., Reddit) may only require a username that does not automatically identify who you are in offline spaces. That type of anonymity allows for a freer version of self to be explored without any repercussion to one’s offline self. Facebook, on the other hand, requires the use of real

names that are then tied with your online presence. Most individuals, however, do not realize the extent that your real name on Facebook allows for tracking of who you are in all areas of the Internet. National Public Radio's podcast "On-Point" did an episode based on an ongoing investigative journalism endeavor dedicated to our online selves on Facebook and the data that Facebook collects from simply knowing your real name. This episode was addressing privacy concerns about data collection that happens, not just on Facebook, but anywhere online. When it comes to identity, who you are online, is now closely tied with who you are offline in more ways than we might even realize (Clayson, 2016).

This shift is also blurring the lines between Goffman's notions of front and back stages. According to Pearson (2009):

"online, these mediated environments mean that there is a blurring between front-stage and back-stage: what feels like an intimate space can be under the watchful electronic gaze of a large unknown audience; what is being acted out as a front-stage performance could have no witnesses" (para. 6).

As we perform the "self" in online spaces, we imagine the audience that may or may not read or see our posts and performances. This study examines how this imagined audience and feedback in online spaces is impacting our offline behaviors. Previously, online spaces were primarily for expressing back stage tendencies, but now that individuals are tied closely to their online selves and are often not anonymous at all, we must start to manage our online identities in ways that we manage our front selves in face-to-face or offline interactions.

The blurred line of offline versus online and anonymous versus not has created an interesting debate. Are our online identities presentations of the self or are they representations of the self? Hogan (2010) proposed that these online spaces and, specifically, social media sites aren't either a front or back stage as Goffman defined them, but, rather, they are exhibitions. Hogan stated that "the actor performs in real time for an audience that monitors the actor. The

artifact is the result of a past performance and lives on for others to view on their time” (p. 377). This creates a distinction between online spaces where actors interact in real-time and exhibition spaces where people are submitting artifacts that are stored for later viewing. Whether online spaces are a blur of front and back stages or a new type of space like an exhibition, it is obvious that this space is something different and new in the ways that we interact with others and create or maintain our identities. We can never really be sure of who our audience is in these spaces or when they view our performances. The performance of self in online spaces is a new realm of identity management and a new version of self, online.

2.1.3 The Online Self

In the dystopian novel, turned movie starring Emma Watson, *The Circle*, the protagonist (Watson’s character) becomes employed at a large influential technology and social media company. The book (and subsequent movie) explore the potential downfalls of information sharing in a digital world by pushing the boundaries of privacy and ethics. It specifically addresses personal freedom, identity, and how much information we should share with others. It is a fictional investigation into what might happen if we lose control over our own self-image and presentation. It poses a legitimate and interesting question about the self, identity, and who we allow to have control over those things. It also illustrates the ways in which we present the self differently to different audiences and how the technology in *The Circle* starts to create just one self that everyone can see at all times. As Goffman might argue we present the self in different ways depending on the audience. *The Circle* asks what happens when we can only present one version. When we post in online spaces like social media sites, we often don’t even know who is viewing those posts and when. Even with privacy settings and the knowledge of who we are connected to, we can’t be sure who sees what we post. In fact, David Brake (2014)

points out that our audience on social media sites might be partially or fully unknown and we may unintentionally be presenting a self that is inappropriate or unwanted for the audience that is actually receiving it. This further blurs the line between a representation of the self and presentation of the self. It is creating a necessity for one version of the self presented to all audiences in order to avoid embarrassing crossovers between the different “selves” we may have presented to different audiences before social media sites existed similar to the story line in *The Circle*.

Researchers have started to look into the ways in which technology impacts human behavior. Clifford Nass researches the ways in which people interact with technology as a way to understand human behavior. He believes that we treat computers so much like other humans that human-computer research can explain human-human behavior (Nass, 2010). On the other hand, Sherry Turkle believes that technology like computers, the Internet, and social media sites, are fundamentally changing human behavior (Turkle, 2011). Nass might be right in understanding some fundamental notions of how the human brain works. However, Turkle’s understanding of technology and how it influences and shapes human behavior is intriguing. The ways in which we use technology today have altered the ways we represent the self. It is clear that our day-to-day activities and interactions with others in online spaces has helped shape and push this change. Technology and the opportunity for visual communication have altered the ways we present the self and communicate with others.

2.1.4 The Self and Visual Communication

We often post photographs and images as a way of communicating who we are and what we are doing in the moment that we are doing it. Lobinger and Brantner (2015) looked at the authenticity of online selfies. They point out that there is a balance between impression

management to display “advantageous images” and the “demand for authentic performance of the self” (p. 1849). Social media sites have helped create a connection between our online and offline selves that gives the impression that they are one and the same and it has created a balance between representation of the self and presentation of an authentic version of the self.

VanDijck (2008) discusses the evolution of photography noting self-presentation as one of the major functions of images today. The combination of cultural shifts, technology, and identity management has created images as a type of currency, commodity, and communication exchange (Iqani & Schroeder, 2016). “Pictures become more like spoken language as photographs are turning into the new currency for social interaction. Pixelated images, like spoken words, circulate between individuals and groups to establish and reconfirm bonds” (VanDijck, 2008, p. 62). Images are used as a way of communication in online social spaces. We post images and seek social interaction in the form of comments, symbolic reactions (e.g., “likes”), and other online feedback as a way to confirm our image. This image confirmation and online communication exchange is a way we can create and manage our presentation of self in these online spaces that will also influence our offline self and our own personal identity. This type of exchange has blurred the lines between online and offline behaviors.

New media like social media sites are being studied as “social space” rather than media. A shift in media research to an investigation of social spaces is telling. Slater (2002) points out that:

“the research agenda from this point of view focuses not on the characteristics and uses of these media as means of communication but rather on the kinds of social life and cultures that they are capable of sustaining, and how these specifically online socialities relate to the ‘offline world’” (p. 533).

Media has become not a channel or mode of communication but a space for social reality itself.

Technology has altered the communication landscape and research needs to adjust to this.

Koliska and Roberts (2015) point out that, “the impact of mobile devices on communication is thus not just technological but rather social and cultural” (Koliska & Roberts, 2015, p. 1675). We must be aware of how these technologies impact our social worlds and a large part of our social worlds is the formation of identity. This research looks at how an online imagined audience impacts identity management and, in turn, offline behaviors. There seems to be something impactful about an imagined other in online spaces that influences what we do in offline spaces. If who we are is rooted in our communication with others, our communication with others has shifted due to advances in technology including an imagined audience in online spaces, and there is an increase use of visuals as way of communication, then photography has the potential to be a large part of our identity and how we define who we are both online and offline.

2.1.5 Online Identity Management

It is clear that social media sites and access to instant photography have changed the way in which we define, construct and manage our presentation of self and our identities. Over two billion people are connected and interacting in online spaces (Franzaru & Garbasevski, 2016). According to Garbasevski (2015), with the prevalence of online activity and, specifically social media sites, our online identity is becoming less about a persona or presentation and more in line with our offline selves (a representation). We are now, more than ever, concerned with managing our online identities as they play a major role in our offline spaces. For example, social media sites like LinkedIn are focused on professional networking and 75% of hiring managers have cited using LinkedIn profiles to rule out candidates in the job searching process (LinkedIn, n.d.). It has become ever more important to, not only to have an online identity, but to manage that identity because it can have major consequences in our lives offline.

A representation of the self is a way to showcase identity. A presentation of the self is a way to manage your self-image so that others will view you the way you want them to view you. Goffman (1959) referred to this as impression management. With the multitude of online spaces to participate in, online identity and online identity management research is widespread and thin. There is also a lack of research in newer social media sites like Instagram and Snapchat when it comes to identity management. It has been documented, however, that people use the Internet for social interaction, social support, and social status (LaRose & Eastin, 2004). It can be assumed, then, that we manage our online identities for social reasons and technology has had a major influence in how we perform these online identity management practices.

According to Koch and Woerndl (2001):

“identity plays a key role in virtual communities. Managing which information is available for which application is called identity management. Identity management is something we do in normal conversation every day when we decide on what to tell one another about ourselves” (p. 319 - 320).

Identity management is performed as a way to construct, create, and manage identity within the agreed upon social norms of a community or society. We manage our identity in both online and offline spaces. Franzaru and Garbasevski (2016) define **online identity management** (OIM) as “digital labor meant to produce identity capital ... whose outcome depends equally on motivation, commitment and skill” (p. 7). Online spaces change rapidly. A lot of online identity research is closely tied to privacy issues. One aspect of privacy in online spaces is the notion of anonymity. Parks and Floyd (1996) and Turner, Grube, and Myers (2001) identified benefits of anonymity in online spaces for the use of support groups, social support, and therapeutic presentations of self. Other research has found when one does not have to disclose their true identity online they do not worry about “saving face” (McGlone & Batchelor, 2003) and they disclose things they normally would not (Gross, 2005). On the other hand, some research shows

that anonymity and mediated communication can lead to decreased prosocial behavior (Burgoon et al., 2002). It has also been shown that people tend to be more opinionated online and agree with others less (Lemus, Seibold, Flanigan, & Metzger, 2004). Campbell and Carlson (2002) found that people are willing to waive their right to privacy for access to social media sites. There have also been studies that investigate gender differences in online identity finding that women are more likely to disclose and are more concerned with positive impressions when compared with men (Dominick, 1999; Stern, 2004).

The notion of online identity often comes up in gaming and avatar research as well (Williams, 2006a). Yee and Bailenson (2009) looked at avatars and self-perception finding that avatars that are more attractive influence their users to display friendlier behaviors. Vasalou and Johnson (2009) investigated how the environment can impact the way we choose to design our avatars. They found that participants created avatars in a blogging environment that closely resembled themselves; they created avatars for dating environments that were made to look more attractive; and their avatars for gaming environments were made to look more intelligent. Furthermore, these individuals rated their avatars as highly similar to themselves no matter which environment they were in or how they designed them. In other words, an individual's identity was closely tied to his or her avatar, and that identity shifted based on the environment they were in (Vasalou & Johnson).

Technology has increased the need for constant identity management. We document offline behaviors to showcase in online spaces as a way to represent the self. This representation is a co-constructed meaning-making processes between the self and the imagined online audience. According to Garbasevski (2015), "...with the advent of OSNs [online social networking], the interpretation of online identity evolved to self-representation and, lately, to

intentional and strategic self-branding” (p. 17). In other words, online spaces have created a need to manage one’s identity much like a company or corporation would manage their company brand. Hussain (2015) looked at political participation in Facebook groups as it relates to identity, stating that “when Facebook users build their profiles and comment on friends’ status message, they make conscious choices about how to construct an online identity” (p. 3). Who we are performing our identity for is important in both face-to-face interactions and in online spaces. In online spaces, however, the audience is often an imagined or perceived audience. Brake (2014) points out that, “... interactions are regulated in part by users’ imagined audiences ... but there is often little feedback available when using social media to reveal who has read a posting or who might in the future read it...” (p. 48). We might receive some feedback in online spaces for our performances, but we can never be sure who else may have witnessed or viewed that performance.

One way individuals can manage their online identity is through the filtering, posting, and disseminating of photographs, including selfies. With the advent of camera phones and the ability to flip the “lens,” selfies have become a more common type of photography. While this research is interested in photography in general, selfies in particular are interesting for two reasons. First, the nature of a selfie involves a more direct portrayal of one’s identity as it relates to place and events. Second, there is increased risk potentially involved in taking these types of photos because people turn their back toward the event and/or point of interest and their gaze and attention toward positioning themselves in the photo/video frame. When the point of interest is wildlife, as this study is contextualized in, the risk ranges from being approached or attacked by the animal to self-injury via losing footing in a treacherous terrain.

Researchers have become interested in the selfie culture and have looked at this trend in multiple ways. Hess (2015) defines selfies as, primarily, a representation of self, but also as a relationship between place and self, an “intersection of body and machine,” and as public acts. “Much like any act of rhetorical expression, selfies are purposeful and offer cultural reflections and interpretations (Hess, 2015, p. 1630). In 2013, Oxford dictionary named “selfie” the word of the year. Senft and Baym (2015) make the argument that selfies are an object and a practice. They contend that selfies have the power to send different messages to different audiences and that selfies outlive the time and the place with which they were taken. The idea that an image is both a representation of the current moment and can communicate that to a wide audience makes selfies all the more important to an individual’s online identity management. Furthermore, photos, such as selfies, can be saved and stored for many years. The ability for storage and recall of past images to a wide and often unknown audience creates an interesting communication process of identity, feedback, posting, and responding to images in online spaces that is both immediate and delayed. This creates some pressure for visual communication that represent the self in both authentic and accurate ways. Senft and Baym also note that “selfies function both as a practice of everyday life and as the object of politicizing discourses about how people ought to represent, document, and share their behaviors” (p. 1589). Technology and social media make it easier to control our image, identity, and, in turn, the impressions others have of us.

There has also been some focus in the literature on travel photography and the influence of digital platforms on the tourist industry. Lo, McKercher, Lo, Cheung, and Law (2011) found that 41% of leisure travelers post their travel photos online. Social media sites were the most popular place these individuals posted travel photos. Destination management organizations need to be aware of the influences of tourist photos on the industry and future visitors. National park

destinations and park photography in online social media sites is no different. “When communicating with photographs from a mobile phone, there is often a connection between the physical setting and the act of communication. The photograph is, after all, captured in a definite place, and with the aid of the mobile phone it can be shared right from the spot immediately after capture” (Villi, 2015, p. 9). Pearce and Moscardo (2015) discuss what they call tourist selfies, suggesting that management of selfie issues be driven by three notions of what a selfie is:

(1) “selfies are about making connections between tourists and places, tourists and audiences and the audience and the place” (2) “selfies are fundamentally social rather than selfish” (3) “selfies are part of a larger complex social systems not just simple swift acts of isolated individuals” (p. 67).

As researchers we need to focus on selfies as a form of communication, meaning making, and identity management that impacts not just online but also offline spaces. Pearce and Moscardo (2015) also suggest different strategies for managing selfies in tourist destinations. They suggest providing information for “safe selfie taking,” tell stories of place, and target tourists before and after their visit as ways to influence behavior.

Photography, then is a social act of visual communication that’s purpose is to assist individuals in negotiating, presenting, and performing the self in online spaces. In order to use photographs as visual communication to perform the self and manage identity, it could be hypothesized, then, that high interest in online identity management will predict a higher likelihood of taking risky wildlife photographs (**H4**). One motivator of posting photographs to social media sites and sending photographs to friends and family via text messaging or instant messaging applications is the need for identity management. Another potential motivator is social capital. Social capital and identity management are closely connected. Identity management is a process of self-presentation and social capital could be one of the outcomes of a positive impression management approach. On the other hand, social capital may also be

influencing identity management practices. Therefore, motivation for posting and sharing photographs and selfies could also be contributed to social capital.

2.2 Social Capital

Social capital is the idea of assets created from our relationships between members of a group (Bourdieu, 1986). Assets imply a benefit to be gained. In order to gain that benefit, an individual will build relationships with others and one way to build relationships is to manage our identity in ways that is expected of us. When we act in ways that others expect us to, it is likely that we have a better chance of gaining more social capital resources and these resources could garner more benefits. Managing identity, then, becomes a way to increase social capital and, in turn, the assets we gain from that social capital. Social capital becomes a motivating factor for identity management. We create social capital through communicative acts. For example, Souza et al. (2015) found that selfies on Instagram increased by 900% from 2012-2014, and that they are about 1-3 times more likely to get likes and comments than other posts. These likes and comments help facilitate an online conversation between those that post that selfie and other users, creating an online social exchange. These exchanges create online relationships that constitute social capital in online spaces. Brake (2014) points out that social media use might become a prerequisite for success and for building social capital throughout the world. Online social spaces will become an important aspect of our identity and our social and professional worlds if it is not already. Gaining thousands of followers can be a major motivation for some individuals to post photographs. Gaining followers, likes, and comments is a way to build online social capital.

There are two ways of thinking about social action: (1) sociologists think of people as social beings governed by social norms, rules, and obligation while (2) most economists think of

people as having independent goals that drive action (Coleman, 1988). Coleman (1988), developed the concept of social capital to illustrate the argument that both of these ways of thinking can co-exist stating that social capital,

“accepts the principle of rational or purposive action and attempts to show how that principle, in conjunction with particular social contexts, can account for, not only the actions of individuals in particular contexts, but also for the development of social organization” (p. S96).

Social capital is a productive concept that allows for individuals to achieve certain goals and this idea of social capital has been studied extensively in offline environments (e.g. Popescu & Ljungholm, 2016; Medvedeva, 2015; Matsaganis & Wilkin, 2015), but more research is needed to fully understand online social capital. The importance of social capital, how we form these ties, and what that means for community engagement have all been researched (e.g. Medvedeva, 2015; Purnell & Jenkins, 2013). According to Ellison, Steinfield, and Lampe (2007), “when social capital declines, a community experiences increased social disorder, reduced participation in civic activities, and potentially more distrust among community members” (p. 1145).

Decreases in social capital have some clear negative consequences. The increase in social capital has also been investigated and it is known that “greater social capital increases commitment to a community and the ability to mobilize collective actions, among other benefits” (Ellison, et al., 2007, p. 1145). It is these benefits that defines social capital and makes it so valuable to our daily lives. For the purpose of this study, **online social capital** will be defined as assets created from our connections and relationships with others in online spaces.

2.2.1 Bonding, Bridging, and Maintained Social Capital

Most social capital research distinguishes between strong and weak ties or the notions of bridging and bonding social capital. Putnam (2000) defines **bridging social capital** as an inclusive social network with tentative weak tie social relationships that provide little emotional

support, but opportunity for new resources and **bonding social capital** is defined by the strength of the ties and are typically defined as close friends and family. Norris (2002) looks at bridging social capital as a form of capital that brings together people that are different from one another and that bonding social capital can have a detrimental effect associated with tight knit groups of similar others that actively exclude outsiders. This typology assumes that the “Internet draws together those from diverse social backgrounds and beliefs, widening contacts, [and] ... that this generates pure bridging groups” (Norris, 2002, p. 5). Social media sites are a ripe environment to stay connected with those we know in offline spaces, those that we do not see often, and to build new connections with others. Haythornthwaite (2002) suggest that the Internet is a useful tool for weak-tie connections. Williams (2006b) speculates “that the social capital generated by online communities is moderated by the relatively low entry and exit costs there compared to offline life [and] as a result, we should see more of the bridging function online than offline” (p. 611). Haythornthwaite (2002) discusses the benefits of computer mediated communication (CMC) for weak tie relationships by saying that:

“one of the key benefits noted for CMC has been how it provides access to a wider range of others to whom we are weakly tied... Both the reduced social overhead and the greater reach of CMC have made it an ideal means for initiating a tie with someone the communicator does not know well” (p. 388).

Other research points out that online social capital and technology is a way to stay connected with close tie connections on a more frequent basis (Ellison, Steinfield, & Lampe, 2002). For example, we may reach out to our close ties throughout the day to show we care. In these instances, it is not what we say, but the act of reaching out that creates a closer bond between people. Lin (1999) cites the Internet as increasing communication and relationship building leading to an increase in social capital.

Ellison, Steinfield, and Lampe (2007) defined a new type of social capital calling it **“maintained social capital.”** After reviewing literature on bridging and bonding social capital and the Internet, Ellison, Steinfield, and Lampe (2007) stated that they,

“...introduce an additional dimension of social capital that speaks to the ability to maintain valuable connections as one progresses through life changes. This concept, “maintained social capital,” permits us to explore whether online network tools enable individuals to keep in touch with a social network after physically disconnecting from it” (p. 1146).

This type of social capital seems to be a direct influence of technological advances like the Internet. Social media sites, Facetime, Skype, text messaging, and other means of visual communication have enabled individuals to move across the country and the world while simultaneously staying in close contact with friends and family that they left behind.

There are both direct and indirect outcomes from our relationships with others (our social capital). Individuals are creating social capital in online spaces by gaining more connections to other people and interacting in ways different from offline relationship building. We like, comment, and share in hopes to increase our social capital and as a way to confirm our online social identities. Williams (2006b) points out that “as people spend more time online, researchers have sought to understand what happens to offline social networks and what kind of new networks form online” (p. 593). Social capital has the potential to be a motivator for online identity management. It seems that one of the ways in which we manage our online identities in order to create social capital is through photography, visual communication, and selfies. According to Lobinger and Brantner (2015), “selfies and self-photographs are important elements with regard to identity work and the construction of authenticity in online environments” (p. 1848).

When it comes to social capital, Pearson (2009) proposed strong and weak ties as the motivation for performative acts in social media sites:

“But even at the level of weak ties, such actively chosen engagements create low cost ways to engage in interpersonal exchanges that facilitate network maintenance. Weak ties are characterized by less intimate, more casual exchanges – passing acknowledgements of low-level bonds with individuals distant but still within our extended social networks. These online performative spaces, linked to both public and private, provide an open platform from which to acknowledge these ties, whilst at the same time demanding little expenditure of capital, time, emotional involvement. The most distant weak ties can be maintained easily. Interpersonal distance is collapsed; performative spaces allows users to develop a sense of cybernetic immediacy that fosters weak tie bonds” (para. 26).

Most research up to this point focuses on the Internet as a place to foster and maintain weak ties or bridging social capital. More research is needed in this area to determine the impacts of all types of social capital on online identity management behaviors and the likelihood of taking risky photographs. The current study begins filling in this gap in the literature. It examined how motivation for social capital gains in online spaces may increase individuals’ need to maintain and manage their online identities. It seems plausible that taking risky photographs in offline spaces like national parks to post in online spaces is one way individuals are managing online identity and maintaining and increasing their online social capital. It also seems plausible that online social capital and online identity management are linked. In other words, participants with high online social capital will also have high interest in online identity management (**H2**). Argued earlier, identity is strongly tied with our interactions and communications with others. Building social capital and maintaining our online identity then has the potential to be heavily influenced by social norms.

2.3 Social Norms

Social norms play a significant role in behavior theories and behavior research.

Psychology, sociology, communication, and other disciplines have all looked into the impacts of social norms on human behavior and decision making. Ardoin and others (2013) point out that

“humans are careful observers of the world around them and tend to model their own actions on the actions of others ... When people are not sure how to behave, they often look for clues about their environment or what other people around them are doing to help guide them” (p. 46).

The environment and those around us play a role in our decision making. Social norms research often reviews this practice of viewing others behaviors as a guide for one’s own behavior. As noted earlier, symbolic interactionism and social constructionism illustrate the importance of peers and interactions with others on our behavioral decisions.

Social norms play a role, not only in our lives offline, but also in online spaces. According to Boyd and Ellison (2008), in online social media sites “friends [connections] provide context by offering users an imagined audience to guide behavioral norms” (p. 220). In other words, people can utilize, not only a real audience, but also an imagined audience as a guide to behavior. Klein and Boster (2006) define social norms as the “normative expectations of important others” (p. 3). Shulman and Levine (2012) define social norms by stating “that people make behavioral decisions based on perceptions of how relevant others act” and that “in order for social norms to operate, a referent group is necessary” (p. 536). Often in the case of online spaces, the referent group is an imagined or perceived audience. For this research, **social norms** will be defined as the influence of a real or perceived audience on an individual’s behavioral decisions.

2.3.1 Theory of Planned Behavior

One well-tested theory in behavior research that includes social norms is the Theory of Planned Behavior (TPB). TPB predicts individuals' intention to perform a behavior. It states that attitude toward the behavior, subjective norms, and perceived behavioral control all impact intention to perform a behavior (Ajzen, 1991). Intention to perform a behavior and perceived behavioral control both directly impact one's actual behavior. The National Cancer Institute and the National Institutes of Health (2005) put out a guide for health promotion that discusses behavioral change theory and social norms. They point to the Theory of Planned Behavior (TPB) as a way to understand one's intention to perform a behavior and state that "beliefs about social standards and motivation to comply with those norms affect subjective norms" (National Cancer Institute, 2005, p. 18). In other words, not only do norms impact intention to perform a behavior, but one's motivation to comply with those norms. This theory posits that there is a "causal chain of beliefs, attitudes, and intentions" that drive behavior (National Cancer Institute, 2005, p. 18).

Environmental communication and, more specifically, human-wildlife interaction research has often utilized TPB as a way to evaluate one's intention to perform certain behaviors. For example, Sinclair, Mazzotti, and Graham (2003) conducted a survey based on TPB in order to understand land-use decision makers' motivations to use scientific information for planning and regulation purposes finding that social norms are specifically important when making decisions. They found that three out of the four predicted variables used in their study explained behavioral intention when it comes to seeking information about threatened and endangered species. The study showed that past behavior, attitude toward the behavior, and social norms explained 42% of the variance in behavioral intention. The authors added past behavior to the TPB model because "it was expected intention to seek information would increase with greater

experience in locating the relevant documents...” (p. 51). Sinclair, Mazzotti, and Graham (2003) believe that a natural component of decision making in land-use roles is social due to colleagues, supervisors, and sometimes the public providing feedback on those decisions and, therefore, social norms tend to have a more significant impact on intention to perform behaviors in this setting. When behavioral decisions are grounded in social environments and are likely to receive social feedback, social norms might play an even more significant role compared to other behavioral decision making. It could be assumed that the combination of the sociality of online spaces mixed with the immediacy of social feedback within these environments is increasing the likelihood or importance of social norms when making decisions about online identity management behaviors such as taking risky photographs and posting those in online spaces.

Other studies in environmental communication turn to TPB to investigate nuanced motivations for certain pro-environment behaviors (e.g., Witzling, Shaw, & Amato, 2015; Ho, Liao, & Rosenthal, 2014). Ho, Liao, and Rosenthal (2014) surveyed adults from Singapore to investigate factors that influence green-buying and environmental civic engagement. They found that only environmental civic engagement was influenced by social norms, and specifically descriptive norms (among other variables tested). Possibly, the social aspects of civic engagement influenced the predictive power of social norms. Along with descriptive norms, attitude, media dependency, Internet attention, and interpersonal communication were all positively related to environmental civic engagement in their study. These kinds of studies can help assist in further understanding individuals’ motivations and assist in creating messages designed to influence those motivations and behavioral intentions.

Ardoin, Heimlich, Braus, & Merrick (2013) summarized the complex nature of human behavior change when it pertains to environmental contexts. They stated that researchers

“continue to learn more about what motivates people to act, but behavior is complex, multifaceted, and changes depending on the individual and situation” (p. 8). Knowledge and attitude are not enough to predict behavior change. While they do play a role, other factors such as social norms are important to factor in for environmental behavior change. “Research indicates that several factors influence why and how some people act and others do not, and many of these factors are related to individual motivations as well as the social and environmental context” (Ardoin, et al., 2013, p. 8). While there are many factors that may or may not be influencing people’s decision to take risky wildlife photographs, it seems plausible with the high social nature of visual communication today, that social norms play a significant role in the choice to take a photograph or not to take a photograph. While researchers do not necessarily agree on one model for behavior change, the Theory of Planned Behavior has been used in many research studies within environmental communication and is one of the most parsimonious theories to implement for message design and behavior change.

2.3.2 Descriptive, Injunctive, and Subjective Social Norms

Often, social normative approaches to communication messaging and behavior research have been confusing and inconclusive due to the different definitions of social norms. TPB mainly describes subjective norms, which are beliefs about what one’s peers or important others expect them to do (Ajzen, 1991). In other words, **subjective norms** are the expectations that we think others have of us to perform certain behaviors. However, Klein and Boster (2006) tested a rationale for three different types of norms, including subjective norms, and concluded that each type is its own separate construct. The additional two types of norms they identified are descriptive norms and injunctive norms. **Descriptive norms** are the behaviors that one believes

their peers would perform themselves, and **injunctive norms** are the behaviors that one believes their peers approve or disapprove of.

Miller and Prentice (2016) reviewed case studies that used norm-based interventions to change people's behaviors. In their review, they note that these interventions tend to focus on the outcomes of behavior rather than the behavior itself, but they point out that, "evidence from norm-based interventions designed to reduce environmental harm is encouraging" (Miller & Prentice, 2016, p. 351). Miller and Prentice (2016) also found that combining injunctive norms and descriptive norms work better than either on their own, and they point out that norm-based interventions are complex. By combining the knowledge of social norms with actually increasing the ease of the behavior one can be more effective in their behavioral change intervention (Miller & Prentice, 2016). This indicates that norms and self-efficacy or the belief in one's ability to change behavior are important. In general, behavior change is more likely when a social norm is tied to a value people already hold. Connecting social norms to previously held beliefs and values seems to be an easier route than trying to directly impact or change beliefs and values. "The knowledge that most others engage in a behavior will have its greatest impact on those who already embrace the value that guides the action but simply had not recognized that their peers perceive the targeted action as a concrete desideratum of that value" (Miller & Prentice, 2016, p. 354). In other words, combining different types of social norms such as descriptive and injunctive, tying those norms to a pre-existing value, and increasing the ease of performing the desired behavior would be most effective in changing one's behavior. Therefore, utilizing multiple types of social norms as a measure of social norms in general is a better nuanced definition and measurement of the impacts of norms on behavior.

Up to this point, this review has looked at different types of norms, attitudes, behavioral control, knowledge, and the complexity when it comes to influencing people's behaviors. Park and Ha (2014) introduce awareness of consequences with other, more familiar, variables that impact behavior. They proposed four variables influence behavioral decisions: subjective norms, personal norms, awareness of consequences, and attitudes. Subjective norms precede personal norms "because subjective norms, which validate whether a specific behavior is socially right, guide a person to determine his belief as to whether the behavior is right for himself" (Park & Ha, 2014, p. 282). This research found that attitudes, personal norms, and behavioral control predict behavioral intention, but that awareness of consequences impacts attitudes, personal norms, and subjective norms and that subjective norms impact personal norms, attitude, and behavioral control. All of these variables have the potential to influence behavior. The present study examines online identity management and offline risky photography and how they relate to each other. When it comes to environmental behaviors, norms have proven to be important factors. It can also be assumed that the more social a behavior or context is, the more likely that norms will play a role in decision making. Since social norms seem to play a role in most decision making and behavioral intention research with the addition of a mix of other variables and because this study is focused on an online social space (that is inherently social), the focus on social norms as a motivating factor for online identity management and the likelihood of taking risky wildlife photographs seems reasonable. In other words, it seems reasonable to hypothesize that participants with a referent group that encourage online wildlife photography (social norms) will also have a high likelihood of taking risky wildlife photographs (**H5**) and have a higher interest in online identity management (**H1**).

The research by Park and Ha (2014) and Miller and Prentice (2016) indicated the importance of all three types of social norms. Subjective norms drive personal decision making as indicated by Park and Ha (2014), but Miller and Prentice (2016) also illustrated that injunctive and descriptive norms in combination tend to be more effective in behavior change.

“As much as people might like to think of themselves as unique individuals, unhampered by what other people may think, humans are social creatures – we’re wired to fit in ... Research suggests that the need to belong is powerful, and belonging to a group increases cooperation and builds motivation” (Ardoin, et al., 2013, p. 46).

For this research, all three types of norms were used to as a broad indicator of social norms. Not only do social norms have the potential to impact our online identity, but also they have the potential to influence risk perceptions. When it comes to taking photographs of wildlife in national parks, a major factor involved are the risk perceptions of getting closer to wildlife in order to do so.

2.4 Risk Perceptions

When we use online spaces as a way to communicate with others, we create a space that requires identity management techniques. Argued earlier, social capital and social norms have the potential to be linked to online identity management. Social norms also have the potential to be linked to an individual’s risk perceptions. Because this research is conceptualized in risky wildlife photography, this next section will lay out what risk perceptions are and how social norms may influence those perceptions.

2.4.1 History of Risk

According to Dominic Golding (1992), risk research is the study of the “relationship between humans and their environment” (p. 23). This is a rather broad definition of what risk entails, but Golding, a geographer, almost exclusively studied risk analysis and wrote about the history of risk research in the early 1990s. Early risk research was mainly funded through the

National Science Foundation and it was not an explicit area of research until 1979 when the Technology Assessment and Risk Analysis Program (TARA) was formed (Golding, 1992). TARA created ten questions for risk management and according to Golding (1992), “overall, the list would seem to be fairly robust, but with hindsight two notable themes appear to be absent – risk communication and the social and cultural context of risk, which have since become prominent areas of research in the social sciences” (p. 27). It was in the mid-1980s that the TARA program pushed risk research into a more social science perspective. Risk analysis is an interdisciplinary interest ranging from physical sciences to the social sciences. The interdisciplinary nature of risk research has created multiple definitions of risk and multiple ways risk has been or can be evaluated.

Renn (1998) noted that “there is no commonly accepted definition for the term risk – neither in sciences nor in public understanding” (p. 50). Even with no common definition, there are some commonalities among the different definitions. Risk deals with the reality in front of us and the possibility of what could happen in the future (Renn, 1988). Risk was first defined using a technical assessment of actual threat to risk. Natural hazards research and psychometric risk studies assume that individuals are passive recipients of risk stimulus (Rayner, 1992). Rayner (1992) pointed out that at the time, “the dominant model of risk communication essentially is one of information transmission with the goal of educating the recipient [and] the main concern is how to pass quantitative information about the probabilities and consequences of events...” (p. 82). However, information transmission is not the whole story. Communication also involves “developing shared meaning among individuals, institutions, and communities and establishing relationships of trust” (Rayner, 1992, p. 82). Social sciences have often criticized the technical definitions of risk (Renn, 1998). As illustrated earlier, human behavior is complex and an

individual's values, beliefs, and social norms can drive decisions, including risky ones. Because of the complicated nature of human behavior, human-wildlife interaction is bound to be more complex than just calculating the probability of harm.

In the 1980s social sciences started evaluating risk in more earnest and economic, psychological, sociological, and cultural definitions emerged. Risk research started with mathematical equations to assess risk, but often people did not evaluate risk based on actual threat. "Since risk refers to a potential of 'real' consequences, it is both a social construction and a representation of reality" (Renn, 1998, p. 51). The closest comparison to a technical definition of risk within social sciences is the economic definition of risk. Economic theory posits that individuals are risk-averse and will make decisions based on his or her own self-interest (Douglas, 1992). "The economic risk concept constitutes a consistent and coherent logical framework for situations in which decisions are being made by individuals and in which decision consequences are confined to the decision maker" (Renn, 1998, p. 56). This concept looks at risk as an individual concept and that each person will do what is best for him or herself. Using a cost-benefit analysis, risk can be evaluated and a decision made that is best for the individual. In other words, "...the economic concept of risk is based on probabilities, a social definition of undesirable effects based on individual utilities, and the treatment of these effects as real gains or losses to individuals or society" (Renn, 1998, p. 57).

Psychological risk research found multiple biases that people hold when they evaluate risk. The availability bias states that individuals will evaluate risk based on ideas that readily come to mind when faced with a risk decision (Renn, 1998). The anchoring effect shows that risk judgements are often based on salient or available information (Renn, 1998). The representativeness bias shows that individuals will judge a threat as riskier if it has happened

near you or to you before, rather than basing that judgement on frequencies or probability (Renn, 1998). Finally, psychological risk research has shown that individuals will try to avoid cognitive dissonance and, in order to do this, they will often downplay risks that are counter to their already held beliefs (Renn, 1998).

Psychological risk research made way for sociological risk research. “The sociological perspectives include undesirable events that are socially defined and in some cases socially constructed” (Renn, 1998, p. 61). In other words, risk and the consequences from risk are mediated through our social worlds. They are linked to values, beliefs, interests, and social judgments. Sociological perspectives link social risk judgments to individuals. Cultural theories of risk link risk assessments to cultural patterns (Renn, 1998). “Cultural analysis of risk looks beyond the perception of physical risks to the social norms or policies that are being attacked or defended ... of all the things people can worry about, they will be inclined to select for particular attention those risks that help to reinforce the social solidarity of their institutions” (Rayner, 1992, p. 93). For instance, an individual that has high online social capital and/or high online identity management behaviors will be more likely to be concerned with posting photos in online spaces and an individual that is around others that tend to place high value on wildlife or nature will probably be more likely to pay attention to the risks associated with being in a national park. “Cultural theory is fundamentally a social theory concerned first with relationships among human beings and second with societal relationships with nature” (Rayner, 1992, p. 86).

Cultural theory looks at the impacts of our cultural groups on risk. Renn (1998) notes:

“Risk perceptions differ considerably among social and cultural groups. However, it appears to be a common characteristic in almost all countries, in which perception studies have been performed, that most people perceive risk as multi-dimensional phenomenon and integrate their beliefs with respect to the nature of the risk, the cause of the risk, the associated benefits, and the circumstances of risk-taking into one consistent belief system” (p. 60).

Risk, then, is a multi-faceted human perception. For example, what risks are perceived by someone will be different depending on the individual and context. Also, the acceptability of risk will vary depending on the social context. Sometimes, a threat is not apparent to people. Other times, people perceive a risk when there is no “real” threat. There are also different rewards and drawbacks to different risks depending on social context (Thompson, 1980). “The evaluations that different people place on risks vary according to where those risk are situated in time and according to the degree of control an individual feels he has over events in time” (Thompson, 1980, p. 6). As mentioned earlier, belief in one’s behavioral control, social norms, and cultural factors all influence risk and other behavioral decisions.

Decision research founded in 1976 was “largely responsible for introducing the notion of perceived risk” (Golding, 1992, p. 43). Risk research “has found that ‘the public’ definitely does not see risks in the same way as the experts” (Douglas, 1992, p. 11). Experts, like national park staff for example, would view the risk of getting too close to wildlife in terms of the harm that could potentially be caused to both human and wildlife alike. However, individuals make decisions to get close to wildlife based on other factors such as, social constructions and culture. The finding that experts and lay people view risk differently was eye opening at the time and gave way to more research in risk perception. When it comes to behavior choices, the perception of risk is often, if not always, more important than the actual risk. Gore, Knuth, Curtis, and Shanahan (2007) define risk perception as “the degree to which citizens believe that they are or may be exposed to some hazard or danger” (p. 133). Risk perception by definition considers not just the technical assessment of risk, but also how individuals perceive risk. Researchers aiming for objectivity have kept the individual isolated in risk research. However, “anger, hope, and fear are part of most risky situations [and] no one makes a decision that involves costs without

consulting neighbors, family, [or] work friends” (Douglas, 1992, p. 12). There seems to be, then, an inherently social aspect to risky decisions.

Danger and risk are different things. “Note that the reality of the dangers is not at issue. The dangers are only too horribly real... this argument is not about the reality of dangers, but about how they are politicized” (Douglas, 1992, p. 29). Real danger exists, but risk is a perception or a judgement based on how dangerous something is and how vulnerable one feels to a danger. Factors that impact one’s perception range from social factors to the ability to rebuild or survive a dangerous situation. “To invoke very low probabilities of a particular dangerous event makes surprisingly little difference to the understanding of a choice. This is not because the public does not understand the sums, but because many other objectives which it cares about have been left out of the risk calculation” (Douglas, 1992, p. 40). The original question when it came to risk research was to ask “how safe is safe enough?,” but to examine risk through a social and cultural lens means asking “how safe is safe enough or this particular culture” (Douglas, 1992, p. 41).

2.4.2 Risk Research

Dickman (2010) points out three factors that influence individual assumptions versus their actual behavior when it comes to human-wildlife conflict: perceptions of risk, responses to those risks, and social influences. Risk perception and risk-taking behavior is an important factor when it comes to approaching wildlife in national parks. Not only do our perceptions of the risk matter, but also the social influences or social norms that drive behavior impact how we react to risk. Dickman (2010) found that people are 1,000 times more likely to accept a risk they choose versus a risk that was imposed upon them. Risk is influenced by social and cultural perceptions, values, history, and ideology. The notion of “selfie culture,” technological advances, creating

social capital in online spaces, and managing online identity could potentially be influencing individuals' risk-taking behaviors, and specifically, risky wildlife photography in national parks. Risk perceptions must become more salient than the notion of online identity management in order to reduce the likelihood of taking risky photographs in national parks. Pearce and Moscardo (2015) point out that "...posting photographs through social media to a global audience may provide an additional force encouraging risk taking behavior to match already posted images" (p. 64).

Utilizing the notion of self and identity, individuals could potentially be posting risky photographs in online spaces to increase their social capital and individuals with higher levels of risk perceptions about approaching wildlife in national parks would be less likely to do so. In other words, people that have higher levels of risk perceptions will be less likely to approach wildlife (for photography or other motivations) because their online identity is not as important or salient as the risks they associate with getting too close to a wild animal. Also important to point out is that online posts can remain indefinitely. "...This longevity makes the calculation of risk from online revelations much more uncertain" (Brake, 2014, p. 13). Risk calculations of posting images and risk calculation of getting too close to wildlife for a risky photo are two different ways risk communication might impact the target behavior of this research. Wildlife management often looks at the likelihood and severity of a risk. Sandman (1993) clarifies the difference between a hazard and outrage. This clarification seems to be in line with the differences noted earlier regarding risk and danger. To Sandman (1993) a hazard is how experts define risk and states that "to experts in risk assessment, risk is a multiplication of two factors: magnitude times probability" (p. 6). Outrage, then, is the public's perception of risk and includes "all the things that people are worried about that the experts ignore" (p. 6). In other words, risk,

to Sandman (1993), is really the hazard plus the outrage. An individual's risk perception is different from the actual threat of a risk and understanding this is a good first step in mitigating some of the risks associated with human-wildlife interactions in national parks.

Bath and Enck (2003) discuss the importance of understanding your audience and what their risk perceptions are or are not about certain human-wildlife interaction in parks. Risk perceptions are influenced by both cognitive and affective risk judgements. In other words, the probability of a risk event occurring and the level of fear an individual associate with that risk event are both factors taken into account when evaluating risk. "An elevated risk perception can occur if people's affective risk judgement is high, even if they know that the actual probability of a terrifying event is very low" (Bath & Enck, 2003, p. 16). Risk is not just about minimizing harm. "People are willing to suffer harm if they feel it is justified or if it serves other goals ... context matters" (Renn, 1998, p. 65). Risk perceptions and risk analysis involves an individual's judgements and those judgements are influenced by psychological, social, and cultural factors. Sometimes a risk, even judged or perceived as highly risky, is worth the potential benefit or outcome.

Renn (1998) points out that, "the dual nature of risk as a potential for physical change and as a social construction demands a dual strategy for risk management" (p. 66). The risk of humans approaching or getting too close to wildlife for photography then should be managed by using real physical changes in the national parks or in online spaces, and by how the culture and social structures define these events. Culture and social norms dictate what information each person digests. "Culture affects risk perceptions by conditioning people to notice and value certain interactions, relationships, and objects" (Decker, et al., 2010, p. 257). Therefore, when it comes to risk perceptions, how we evaluate risk is linked to our social structures and culture. It

seems likely, then, that those with a referent group (social norms) that are likely to get close to wildlife will be negatively correlated with an individual's wildlife risk perceptions (**H3**). Social norms impact our identity as well as our risk perceptions. If an individual's social connections are deeply rooted in their online identity, then the ability to post images and share information in those online spaces to create and maintain online social capital will be more important or more salient than the risk that they perceive they face in doing so. Therefore, those with a referent group (social norms) that are likely to get close to wildlife will have a higher likelihood of taking risky wildlife photographs (**H6**) and an individual with high wildlife risk perceptions will be less likely to take risky wildlife photographs (**H7**).

If communication shapes identity and culture, it can be assumed that it, also, shapes our worldview as a whole (Kahan, 2012). People's perceptions of risk are dependent, then, on their worldview. When it comes to wildlife risk perceptions, individuals will have different perceptions based on his or her worldview, life experiences, and social pressures. Considering the complicated history and nature of risk perceptions and how it applies to this research, **risk perceptions** is defined as a socially constructed evaluation of the threats associated with a certain behavior. The danger itself is real, but the evaluation of what that danger means to someone is socially constructed based on psychological, social, and cultural factors. Asking an individual to evaluate his or her own risk perceptions about a specific situation is the best way to measure or understand someone's evaluation of risk. As Thompson (1980) points out, "risk, though it has some roots in nature, is inevitably subject to social processes" (p. 18).

2.4.3 Disruption Information Seeking and Processing Model

This research is focused on risky photography in national parks. Risky photo taking behaviors are potentially influenced by individual's risk perceptions. Risk perceptions can

involve risk information seeking and processing which can often be a complicated process. It is evident that risk perceptions are formed using a lot of different factors including self-efficacy, norms, problem recognition, level of involvement, behavioral constraints, information processing, information sufficiency and more. The development of technology, a selfie-culture, social media, and identity presentation all have the potential to play a role in the likelihood of taking risky wildlife photographs in national parks. This study examined whether a connection between risk perceptions and online identity is influential in behavioral decisions in national parks. The Disruption Information Seeking and Processing Model (DISP) explains and supports how risk perceptions and identity might be intertwined by looking at risk information seeking behaviors, risk perceptions, and how identity might influence both of those.

Risk Information Seeking and Processing Model (RISP) was proposed by Griffin, Dunwoody, and Neuwrith (1999) as a way to integrate multiple theories to predict information seeking behaviors in relation to risk and hazard situations. Braun and Niederdeppe (2012) proposed an extension of the RISP model that includes disruption and identity management. This model is based on the premise that risk management is embedded in the notion of identity and self. The current study is also aimed at the connection between risk perceptions and identity. However, for this study, the central argument is based on how identity impacts risky behavior in the form of photography of/or with wildlife and DISP proposes that our perceived risks are based on, or dependent on how much that risk disrupts our identity. In other words, DISP is about how our perceptions of risk change based on how much that risk disrupts our sense of self. The current study proposes that our sense of self is what is driving risky behavior. Braun and Niederdeppe (2012) do point out some interesting and relevant connections between the two concepts that apply, both to the DISP model and to the research presented here.

Braun and Niederdeppe (2012) state that RISP is the most successful attempt at integrating multiple theories for information management behavior and risk, but they point out three critiques: individual characteristic's predictive ability is limited, there is a limited view on receiver perceptions of risk versus expert opinion of risk, and sometimes when it comes to risk, less information is desired versus more information. They believe that these critiques all go back to RISP's lack of attention to identity and identity management. People will not only seek out information about the risk itself but also about how to manage his/her identity to "maintain our sense of self in the face of a hazardous environment" (Braun & Niederdeppe, 2012, p. 145). They propose that risk disrupts our sense of identity. If risk and identity are connected, and if social norms and social capital are influencing these variables, then there is potential for impacting change through those channels. For example, a national park visitor might know better or realize that trying to take a selfie with a bear is risky, but they do it anyway. They do it, not because they do not think they can stop their behavior, but because a salient aspect of their identity, and in particular, their online identity matters more than the risk or what they judge the risk to be. The risk seems to be "worth it" to uphold or represent identity in a certain way. The combination of technology and online identity management is potentially creating a risky photography culture.

The overall goal of DISP is not to figure out how best to get across predetermined messages, but instead to think about how humans make sense of disruptions to their identity. According to this model, disruption in identity happens when someone has a high vested interest in the action or activity but he or she also feels like they have no control or that they lack self-efficacy to change their behavior in ways that would avoid the risk and maintain identity (Braun & Niederdeppe, 2012). This research is interested in the risk that is likely unknown or less salient because another salient identity management activity is overshadowing the risk. If we have low

self-efficacy and an individual cannot do anything about a particular risk, they may avoid information in order to reduce negative emotion or affect. In DISP, low self-efficacy and high vested interest leads to disruption and this disruption leads to cognitive reappraisals or norm trumping (changing the narrative), which could potentially be a form of information avoidance behavior (Braun & Niederdeppe, 2012). Norm trumping is when an individual makes one norm more salient than another in order to avoid cognitive dissonance (Braun & Niederdeppe, 2012). It is not that the original norm goes away, but that it becomes less important than a different norm that fits the situation one find themselves in.

When our identity is disrupted, we go through a process where we re-write our own narrative story in a way to align with the disruption. This process isn't about replacing norms, but about reorganizing. It's not a rejection of cultural expectations but promoting something different that is still acceptable within the culture and community. "Rather, they are asserting that other norms simply take precedence of those that they cannot follow" (Bruan & Niederdeppe, 2012, p. 149). In other words, one norm will be more salient than another. This research proposed an interaction effect between an individual's risk perceptions and their online identity management and how that impacts their likelihood to take risky wildlife photographs (**H8**). The proposed exploratory model will also propose that social norms directly influence the likelihood of taking risky wildlife photographs but that they also potentially influence both interest in online identity management and wildlife risk perceptions. Perhaps, utilizing social norms and the behavior of norm trumping can help influence the likelihood of taking risky photos. We must first identify if these are truly motivating factors in the likelihood of taking risky wildlife photographs. It is possible that social norms around photography and identity in online spaces do not need to change, but other norms around how to behave in national parks to avoid the risk of

getting too close to wildlife need to “trump” the norms of online identity management and photography. DISP is a rather complicated model of risk information seeking and processing behaviors, but for the purpose of the present study, it does help illustrate that identity and risk have the potential to impact each other.

2.5 Summary and Proposed Theoretical Model

Online spaces and social media sites are “imagined” worlds with “imagined” audiences. We can never be sure who is looking at our posts. The current research proposed that people’s need for validation and need for an online social network influences offline behaviors. Online influences such as an imagined online audience are potentially overriding offline influences like known risks. People that do not understand their risky behaviors need to be informed. People that do understand they are making a risky or environmentally unsound choice but do it anyway, may need to increase their risk perceptions. It is possible that these people either do not think the risk is inherently risky for them personally and/or in the moment of decision making, the idea of feedback in online spaces and showcasing or presenting the self in place is more important and more salient. Behaviors are highly driven by several social norms. It is understanding where these norms come from and how they can shift in order to influence healthy behavior choices that is of interest. The norms of being in online spaces and giving and receiving instant feedback is potentially stronger than offline norms of risk aversion. The riskier the photograph, the more likely to receive feedback. That feedback increases a sense of community in online spaces and fosters the growth of our online social capital or social networks. Posting and getting feedback does validate our sense of self and identity, but it is also a way that we feel connected to others and part of a community, an online community. Community is an important piece of being human and a major factor in how we define who we are. The notion of identity management and

the self are forever linked and intertwined with social interaction and community building. As Frunzaru and Garbasevski (2016) point out, "...online identity can no longer be regarded as a separate construction, an antithesis with offline identity, but as an integral part of the individual's identity system, being influenced by and at the same time influencing the whole" (p. 4).

The first hypothesis in the current study deals with social norms and identity. Identity management is the way that we construct and perform our identity that is in line with agreed upon social norms in a particular setting or culture. Online identity management, then is defined as the way we construct and perform our identity in online spaces that is in line with agreed upon social norms. Frunzaru and Garbasevski (2016) discuss online identity management as akin to "digital labor." It is the effort individual's put in in order to maintain a certain identity or "self" in online spaces.

Specifically, when asking about social norms regarding online photography, participants were asked about wildlife photographs. Those with an identity tied closely to the environment would know that online photographs with wildlife are dangerous or unhealthy. Individuals with identities like this won't have social norms around online wildlife photography. However, they might have a more general social norms regarding online photography. Therefore, asking specifically about wildlife photography social norms will illustrate how social norms and online identity are related for the scope of this research. Therefore, the first hypothesis states that social norms around online wildlife photography (posting, commenting, and engaging with photos online) will be positively correlated with interest in online identity management (**H1**).

This research proposed that one of the reasons people would put effort and energy into maintaining and constructing an online identity is to gain and maintain online social capital resources. In order to create and maintain online social capital, people engage in online

communicative acts. In other words, online social capital and online identity management will be positively correlated (**H2**). Another factor that might lead to risky wildlife photography is risk. Risk is a multi-faceted human perception influenced by an individual's worldview and social pressures. Social pressures can come in the form of social norms. Therefore, the next hypothesis states that social norms that encourage risky wildlife behaviors will be negatively correlated with wildlife risk perceptions (**H3**).

The next four hypotheses all deal directly with the likelihood of taking risky wildlife photographs. Due to advances in technology, a big piece of online identity management is the ability to quickly post and comment on photographs in online social media sites. Because online social spaces have become photo-centric, it is likely that those with high interest in managing their online identities will be more likely to take photographs to post in these online spaces. It could be assumed, then, that they will also be more likely to take risky wildlife photographs when compared to those that have lower online identity management and lower need for photographs to post online. Therefore, the fourth hypothesis predicts that those with high interest in online identity management will be more likely to take risky wildlife photographs (**H4**). As mentioned earlier, in order to maintain identity and maintain social capital in online spaces, one must communicate (often using photographs) based on agreed upon social norms. Social norms around online wildlife photography then is proposed to have a major influence in the ways we maintain our online identities. Social norms may also impact the likelihood of taking risky wildlife photographs. The Theory of Planned Behavior (TPB) states that subjective norms will impact behavioral intention. Therefore, high online wildlife photography social norms (posting, commenting, and engaging with photos online) will predict a high likelihood of taking risky wildlife photographs (**H5**).

The sixth hypothesis is also rooted in TBP. High wildlife risk social norms will predict a high likelihood of taking risky wildlife photographs (**H6**). Subjective norms have been tested and theorized to influence behavioral intention and the intent or likelihood of taking risky wildlife photographs shouldn't be different from other environmental and risk research. Finally, risk perceptions shape an individual's view and, specifically, an individual's wildlife risk perceptions will shape his or her view on wildlife. Therefore, the seventh hypothesis states that high wildlife risk perceptions will predict a low likelihood of taking risky wildlife photographs (**H7**).

The final hypothesis for this study states an interaction effect between an individual's online identity management and their wildlife risk perceptions and how that impacts the likelihood of taking risky wildlife photographs (**H8**). *Figure 1* illustrates the proposed connection between online identity management and wildlife risk perceptions as a grid. Each line is a continuum and an individual could fall anywhere within these spaces. For example, someone that has high wildlife risk perceptions and low online identity management will be less likely to take risky wildlife photographs. However, an individual that has high wildlife risk perceptions and also has high online identity management is harder to predict. This individual might be easier to sway by activating their ability to use norm trumping. If, for example, messages are designed to prime their risk perceptions, that norm might trump the norm of online identity management and discourage risky photography behaviors.

This research investigated how our online identity has the potential to impact the likelihood of taking risky wildlife photographs in national parks. People whose identity in online spaces is more salient than the risk perceptions they have about wildlife will be more likely to take risky wildlife photographs. When it comes to interest online identity management, this

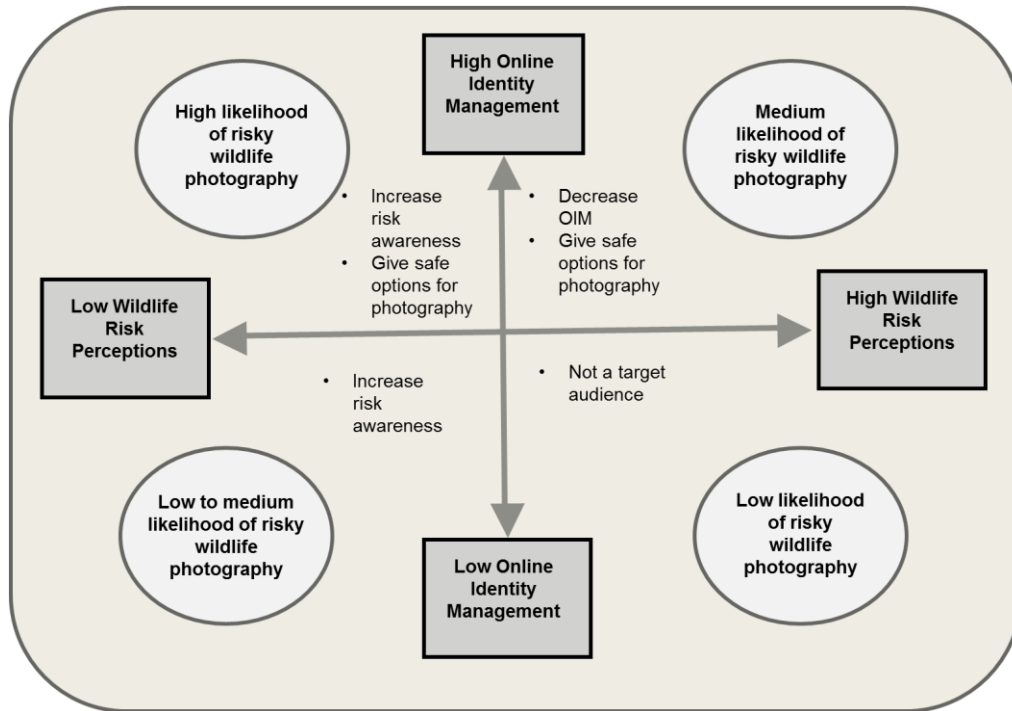


Figure 1. Online Identity Management and Wildlife Risk Perception Grid

could also be an important tool or guide for message strategy aimed at reducing the likelihood of individuals taking risky photographs. If we can understand how identity and self-image impact behavioral intent, perhaps we can utilize that understanding to create communication that taps into these identity influences. Technology is rapidly changing, but the underlying influences on behavior based on identity management and risk seem to be less fluid. *Figure 2* illustrates the proposed theoretical model.

The proposed Wildlife Risk Perception and Identity Model suggests that wildlife risk perceptions and interest in online identity management will have an interacting effect on risky wildlife photography taking. The proposed grid and model lead to eight distinct hypotheses stemming from the broader research question surrounding motivations for risky wildlife photography. Following these hypotheses, three more research questions were posed to investigate the impacts of gender and park familiarity on the likelihood of taking risky wildlife photographs as well as investigate what strategies might help keep people a safe distance from

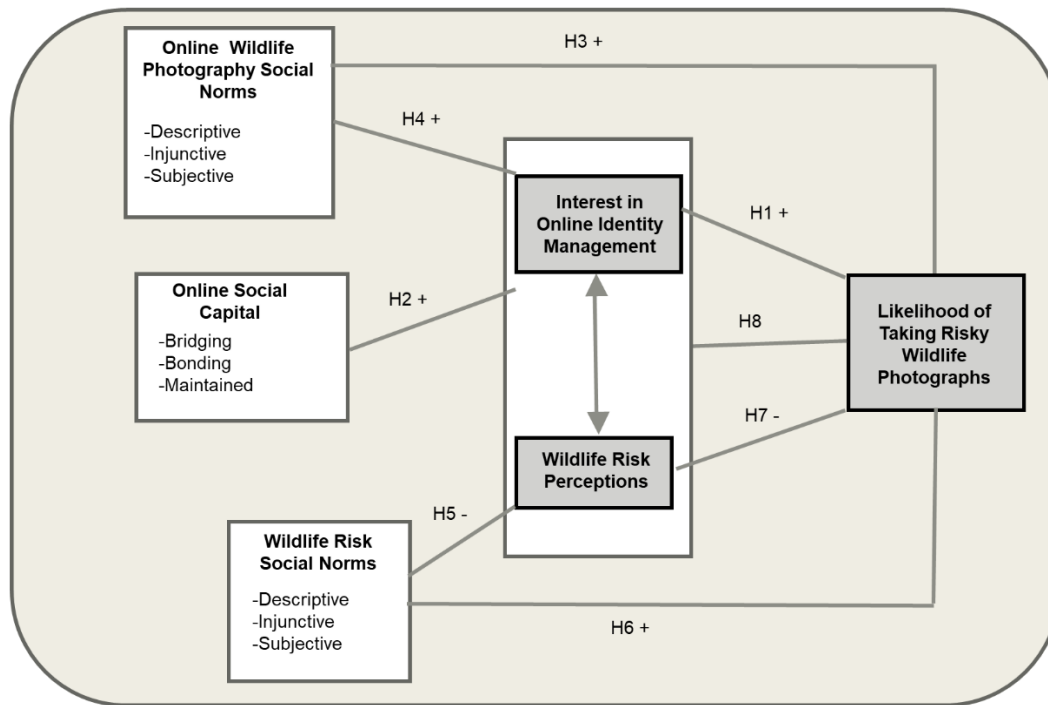


Figure 2. Wildlife Risk Perception and Identity Model

wildlife. Previous research had indicated gender differences in online identity (Dominick, 1999; Stern, 2004), risk perceptions, (Nan, 2012; McQueen, Vernon, Meissner, & Rakowski, 2008), and other behavioral decision making (Hew, Badaruddin, & Moorthy, 2017; Nikolova & Lamberton, 2016). It would be pertinent to include gender as a potential factor impacting the likelihood to take risky wildlife photographs. Another demographic variable that may be influencing people's risky photography decisions is familiarity with national parks. It can be assumed that individual's that have been employed by a national park or by NPS have had different training when it comes to how to behave in parks that might influence decision making around risky wildlife photographs. Also, those that have been to a national park more often might also have a higher vested interest in parks and in the wildlife. This research explored some of these demographic variables and how they also might impact the likelihood of taking risky wildlife photographs. Finally, the overall aim of the current study is to understand what factors are motivating people to take risky wildlife photographs in national parks. One reason for this is

to create better communication and message strategies for parks to alleviate human-wildlife interactions. Therefore, the current study also explored and addressed a specific research question about the different strategies that might help keep people a safe distance from wildlife in national parks.

2.6 Research Questions and Hypotheses

Research Question 1: What factors are motivating people to engage in risky wildlife photography in national parks?

- **Hypothesis 1:** Social norms that value online wildlife photography will be positively correlated with interest in online identity management.
- **Hypothesis 2:** : High online social capital will be positively correlated with interest in online identity management.
- **Hypothesis 3:** Social norms that value the inherent dangers of wildlife will be negatively correlated with high wildlife risk perceptions.
- **Hypothesis 4:** High interest in online identity management will predict a high likelihood of taking risky wildlife photographs.
- **Hypothesis 5:** High online wildlife photography social norms will predict a high likelihood of taking risky wildlife photographs.
- **Hypothesis 6:** High wildlife risk social norms will predict a high likelihood of taking risky wildlife photographs.
- **Hypothesis 7:** High wildlife risk perceptions will predict a low likelihood of taking risky wildlife photographs.
- **Hypothesis 8:** There will be an interaction effect between wildlife risk perceptions and online identity management in how they influence the likelihood of taking risky wildlife photographs.

Research Question 2a: Does gender impact the likelihood of taking risky wildlife photographs?

Research Question 2b: Does familiarity with national parks (measured as park visitation frequency and past/current employment) impact the likelihood of taking risky wildlife photographs?

Research Question 3: What strategies might help keep people a safe distance from wildlife in national parks?

CHAPTER THREE: METHODS

Our identities as humans, and as individuals, is grounded, not just in the offline world, but also in online spaces. As researchers of human behavior, we need to be cognizant that we are answering the questions we are asking the appropriate ways considering both online and offline worlds and how those spaces work tangentially and, at the same time, how they work together. This overall study investigated motivations for risky wildlife photography in national parks. It also examined the relationship between risk perceptions and online identity management and its impact on people's intent to engage in risky wildlife photography. In order to examine these relationship, the current study utilized survey methodology to investigate how online identity, online social capital, social norms, wildlife risk perceptions, gender, and park familiarity impact the likelihood of taking risky wildlife photographs. The survey also investigated broader research questions about why people might move closer to wildlife for photographs and what strategies could potentially keep people a safe distance from wildlife in national parks. According to Fowler (2014), "the purpose of a survey is to provide statistical estimates of the characteristics of a target population..." (p. 8). Furthermore, Kelly, Clark, Brown, and Sitzia (2003) point out that descriptive studies are often best suited for survey methodology. "Descriptive research is a most basic type of enquiry that aims to observe (gather information on) certain phenomena, typically at a single point in time." (Kelley, Clark, Brown, & Sitzia, 2003, p. 261). The current study examined the likelihood of taking risky wildlife photographs (situation) by investigating factors that may lead to risky photography such as online identity management.

A survey also allows a timely way to measure the characteristics that were hypothesized to lead to the likelihood of taking risky wildlife photographs in the target population. Surveys are an easy tool for data collection via online software systems. According to Smyth and Pearson (2011), distributing a survey online saves both time and money and requires less burden on participants. There are, of course, some limitations to collecting survey data online: issues with Internet access can become a problem for response rate and differences in technology can cause problems creating standardized surveys that look the same for each participant. While the Internet can provide autonomy and privacy for participants, it is also a changing and dynamic space where participants might get distracted (Smyth & Pearson, 2011). Another disadvantage of surveys is the lack of details or depth in responses (Kelley, et al., 2003). Therefore, the current research used an online survey that, not only measured the hypothesized variables, but also included open-ended qualitative questions to add richness and depth. Understanding motivating factors for risky wildlife photography is complicated because human behavior is based on context (Cialdini, Kallgren, & Reno, 1991; Johns, 2006). To further understand motivating factors for taking risky wildlife photographs outside of measuring predicted variables, this research also asked broad open-ended questions as a way to gather insights that theory might not be able to predict and as a way to give context to the predicted variables. Quantitative research stems from a positivist perspective while the qualitative data considers the intersubjectivity of human beings.

A positivist perspective is based on the assumption that knowledge is something we can discover and that knowledge exists outside of human behavior. Positivists believe in an objective reality. This position in research stems from the natural or “hard” sciences. “Positivists see the world in terms of cause-and-effect relationships and believe that by making assumptions

(hypotheses) and then testing them, it will be possible to prove what is true” (Savin-Boden & Howell, 2013, p. 3-4). This type of research provides insights into what factors impact the dependent variable for the current study, likelihood of taking risky wildlife photographs. The value of quantitative research comes from the ability to provide statistical analysis. However, the challenges with a positivist approach comes from the nature of human behavior. When social science research began to understand and make meaning of human interaction, new thought and approaches to scientific research emerged. “The way in which individuals experience the world directly influences the way in which they think about it” (Savin-Boden & Howell, 2013, p. 5). Because the current study investigated people, a qualitative piece was included in order to provide the richness and dimension that is the nature of human behavior. In the 1960’s researchers started to look at research in a more holistic way and began to think of human behavior in an intersubjective way (Savin-Boden & Howell, 2013). Shotter (1993) summarized it best by saying that:

“instead of the study of the inner dynamics of the individual psyche (romanticism or subjectivism), or the already determined characteristics of the external world (modernism and objectivism) ... it is contingent flow of continuous communicative interaction between human beings which becomes the central focus of concern: a self-other dimension of interaction” (p. 12).

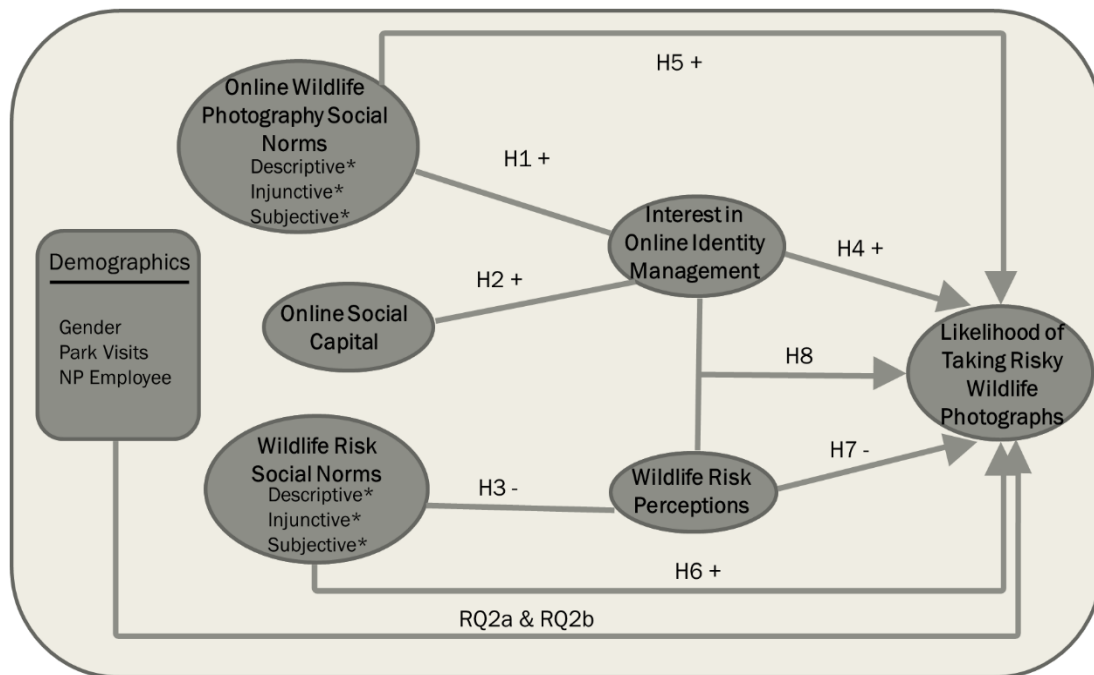
It is this pull between objectivity and subjectivity where the intersubjectivity of human behavior lies.

“Facts about behavior may be established but those facts are always context bound and do not apply to all people at all times in all situations” (Savin-Boden & Howell, 2013, p. 6).

Therefore, the open-ended question assisted in understanding the current research participants and how they understood and viewed their likelihood to take risky wildlife photos. The open-ended questions of the current study not only provided “thick” data or richness to the quantitative

analysis but they also provided triangulation. Triangulation is the study of a phenomenon from multiple viewpoints or angles. A mixed-method approach allows for both a quantitative analysis and a qualitative analysis of the likelihood of taking risky wildlife photographs. According to Jick (1979) triangulation allows researchers to be confident in their results, help create inventive or new methodology, help to discover outliers of a phenomenon, and lead to an integration of multiple theories. This mixed methods approach to survey data collection allowed for a more nuanced understanding of the likelihood of taking risky wildlife photographs in national parks.

Figure 3 summarizes the hypotheses for this study into a conceptual model of wildlife risk perceptions and identity. The conceptual model helps illustrate the proposed connections between the measured variables. These variables were all measured using Likert-style questions. The measures used are explained in further detail below.



*Exploratory analysis included in a regression model

Figure 3. Conceptual Model of Wildlife Risk Perceptions and Identity

3.1 Measures

Multi-item measures were used to assess interest in online identity management, wildlife risk perceptions, likelihood of taking risky wildlife photographs, online social capital, wildlife risk social norms, and online wildlife photography social norms. A combination of existing and researcher-developed scales were used; details of each follow.

3.1.1 Online Identity Management Scale

Frunzaru and Garbasevschi (2016) created a measure to test interest in online identity management. Their measurement scale, while new, is based on the notion of commodification of the self. It was established earlier that online social spaces have blurred the lines between our online and offline selves creating a space where we want to, on the one hand, represent an authentic version of ourselves, but at the same time, present the best or ideal version of ourselves. These online social spaces, then, have created a new space for identity research. According to Frunzaru and Garbasevschi (2016), “without too much error, we can affirm that no other social milieu has had such a rapid and dramatic effect on the project of the self than the *Social Web*, nowadays a main site for self-presentation and impression management” (p. 5). In other words, interest in online identity management seems to be an important piece of identity research. The interest in online identity management scale, developed by Frunzaru and Grabasevschi (2016) was originally tested with a reliability of .79. The scale consists of four questions asking participants about the importance of online social media and other online content to their identity and sense of self. For example, one question in the scale asked participants to rank the following statement from 1 (strongly disagree) to 5 (strongly agree): “through everything I post online, I want to send a certain message about myself.” The full scale

was used to measure individuals' interest in online identity management for the current study and can be found in **Appendix B**.

3.1.2 Online Social Capital Scale

In order to measure online social capital, the current study drew from Williams' (2006b) Internet Social Capital Scale. Williams (2006b) created an Internet Social Capital Scale (ISCS) that addresses both bonding and bridging types of social ties. This scale was developed from the framework of social capital and was created to account for both online and offline social interactions. The scale developed by Williams (2006b) consists of ten questions each for bridging and bonding, asked for both online and offline social ties. This research is focused on online social capital and will, therefore, only be looking at the scales that investigate individuals' online social capital. The ten questions for bridging social capital in online spaces asked participants to rank a variety of statements from 1 (strong disagree) to 5 (strongly agree) that deal with weak tie social relationships such as, "interacting with people online makes me interested in what people unlike me are thinking." The ten questions for bonding social capital in online spaces asked about relationships that are more akin to our strong tie connections such as, "the people I interact with online would share their last dollar with me." These scales can both be found in full in **Appendix B**. The ISCS was tested and validated using a thorough process. First Williams (2006b), did a confirmatory factor analysis to eliminate concepts, change wording, and make sure the questions fit the concepts of bridging and bonding. The final scale items were then tested using the Goodness of Fit Index, parsimony ratio, and the Root Mean Square Error for Approximation. Construct validity was tested and positive correlations between similar concept measures for each scale were found. "Results from a large sample indicated that the final 10-item scales are valid and reliable" (Williams, 2006b, p. 610). Ellison, Steinfield, and Lampe (2007)

developed a scale to measure maintained social capital as a third type of online social capital. The original scale was aimed at maintaining connections with high school acquaintances via Facebook. This research draws on a broader understanding of online social capital outside of Facebook alone. Also, the scale was developed in 2007 and newer social media sites have emerged since then. Therefore, a more general understanding of online social media behaviors and maintained social capital is needed. The maintained social capital scale used by Ellison, Steinfield, and Lampe (2007) was adapted for the purpose of this study to better illustrate a broad understanding of online social capital. In the original scale, mentions of Facebook were altered to either read “social media sites” or “online.” For example, the scale asked participants to rank five statements from 1 (strongly disagree) to 5 (strongly agree) including “I would be able to stay with an acquaintance I know online if traveling to a different city.” The full scale can also be found in **Appendix B**.

3.1.3 Wildlife Risk Perceptions Scale

In order to measure wildlife risk perceptions a review of risk communication literature was conducted finding that risk perceptions have been measured in many different ways. Typically risk measurements are dependent on the risk situation itself or they are measured as a way to quantify overall risk perceptions about a specific risky situation. For example, Vaske, Timmons, Beaman, and Petchenik (2004) measured risk for chronic wasting disease, Gore and Knuth (2009) measured risk toward black bears, Weber and Hsee (1998) measured risk perceptions regarding financial decisions, and Renner and Schwarzer (2005) measured health risks. Ho, Shaw, Lin and Chiu (2008) measured risk ratings and risk perceptions by asking the riskiness of six common hazardous events. More recent risk research has looked at risk perception as a dual process that includes both cognitive and affective impacts (Trumbo, et al.,

2016). Sitkin and Pablo (1992) created and tested a model of risk perception that focuses on decision making. Other researchers have used a single item measure of risk perception (Payne, 1975; Weber, Eblais, & Betz, 2002). The single item measure asks “how risky is this prospect?” There are a lot of potential factors involved in risk perception and because risk perception is based on an individual’s view, his or her self-report on the perception of risk is the best way to consider all of the possible influences for each particular risk.

Therefore, to measure wildlife risk perceptions, the current study asked participants to self-report on how risky multiple different situations are when it comes to wildlife and national parks. Furthermore, keeping a safe distance from wildlife is documented on most national park websites and the national park service’s website. For example, Yellowstone National Park reminds visitors to stay at least 100 yards (91 meters) away from bears and wolves and at least 25 yards (23 meters) away from all other animals, including bison and elk. Distance regulations vary by park and species and often account for context of the interaction. Many parks’ regulations state 25 yards or any distance that changes the animal’s behavior, for law enforcement purposes. Some parks also have additional distance laws written for specific species. The laws may differ from what the park communicates due to safety concerns for visitors and/or wildlife that have emerged over the years since the laws were set. Because there are no shared standards in distance regulations or messaging, the distances in the questions for different types of wildlife were set based on what are commonly observed across parks in how they communicate distances from different types of wildlife.

The wildlife species included in this scale each represent different animals people may encounter or hold interest in photographing (i.e., broadly popular) in a U.S. national park. They were: bears, wolves, elk, deer, seal, nesting birds, and wild horses. Furthermore, these types of

wildlife are based on what national park service's employees and national park staff are currently concerned about when it comes to human-wildlife interactions in national parks. Most questions within this scale asked participants how risky they feel it is to get within a certain distance of certain wildlife. There are also statements that asked participants to more broadly rank how risky it is to be in a national park and around wildlife. The full scale can be found in **Appendix B**.

3.1.4 Social Norms Scales

Social norms scales for this study were built based off the scales used by Klein and Boster (2006). Klein and Boster (2006) measured differences between three types of social norms: injunctive, descriptive, and subjective. They measured each type of norm for three different situations. For subjective norms, Klein and Boster asked participants in their study to think of people whose opinions matter to them, and then asked if they would behave in ways that those people or that person would want them to. A similar approach was taken for the current study asking participants on a scale of 1 (strongly disagree) to 5 (strongly agree) if they would do what their referent group wanted them to do when it comes to approaching wildlife and/or taking photographs of wildlife in a national park. To measure descriptive norms, Klein and Boster asked open-ended questions about what participants' peers would do. For this research, a similar approach was used altering the procedure by using Likert-style questions in order to keep measures consistent with the other scales used in this study. Finally, for injunctive norms, Klein and Boster (2006) asked questions about what was expected of the participants. A similar structure was utilized in this study, but tailored to measure wildlife risk social norms and online wildlife photography social norms. The full scale can be found in **Appendix B**.

3.1.5 Likelihood of Taking Risky Wildlife Photographs Scale

Finally, risky wildlife photography was measured by asking individuals a list of questions regarding photography in national parks. Some of these questions also utilized the common safe distance measures taken from national parks across the country used in the wildlife risk perception scale. Bears, wolves, elk, deer, seal, nesting birds, and wild horses were used given the concern national park staff and National Park Service staff have when it comes to these types of wildlife and for consistency with the wildlife risk perception scale. This scale asked participants to rank a series of statements from 1 (not at all likely) to 5 (extremely likely). Each statement refers to getting closer to certain wildlife for a photograph. For example, “if you saw a deer in a national park, how likely would you be to move within 25 yards of the wildlife to take a closer photograph?” The full scale can be found in **Appendix B**.

3.1.6 Qualitative Measures

The survey also included qualitative open-ended questions to further understand motivating factors for moving closer to wildlife to take photographs. Participants were first asked if they could imagine a scenario in which they would want to move closer to wildlife for a photograph. Participants that responded “yes” were then asked a series of three questions. The first question asked participants to “describe 1-2 scenarios [they] have either experienced or could easily imagine in which [they] would move closer to wildlife in a national park to take a picture.” This first question also asked participants to “consider including the type or types of animals and why [they] want to (or did) move closer to it for the picture in each scenario.” Participants were then asked a follow up question to expand on or add more detail to the first question. Finally, participants were asked, “what do you think might help you (or others like you) stay a safe distance from wildlife in national parks, even if that meant not getting the type

of picture you would like to have of your experience? For example, are there types of information, ideas or experience that might make you more likely to keep a safe distance?” Participants that responded “no” to the original question asking if they could imagine getting closer to wildlife were only asked the final open-ended question regarding the strategies that might help keep people a safe distance from wildlife. These questions helped give depth to the quantitative data and addressed the broad research questions in this study.

3.1.7 Summary of Measures

All variables were measured using 5-point Likert-style questions using the scales described above. Interest in online identity management, online social capital, and the two social norms scales were all measured on a scale ranging from 1(strongly disagree) to 5(strongly agree). The wildlife risk perception scale was measured on a scale ranging from 1(not at all risky) to 5(extremely risky). Finally, likelihood of taking risky wildlife photographs was measured on a scale ranging from 1(not at all likely) to 5(extremely likely). Cronbach’s Alpha tested the reliability of each scale by checking for consistency among the questions. Face validity was checked by a panel of five experts (the lead researcher’s committee). Before initial data collection, questions regarding face validity of some scales arose. Therefore, edits were made to the survey and a second data collection was conducted. Details regarding the two different data collections will be addressed below. Finally, open-ended questions helped address any issues with depth and assisted in adding detail to the quantitative data collection.

3.1.7.1 Data Collection: Round One

The original survey was distributed in the spring of 2017 to multiple courses offered by a communication department. The full survey can be found in **Appendix B**. Due to the face

validity concerns, the survey was edited and a second round of data collection was deemed potentially useful prior to analyzing data from this first round.

3.1.7.2 Data Collection: Round Two

The second round of data collection was conducted in the summer of 2017. The scales for online identity management and online social capital stayed consistent from dataset one to dataset two. Because the social norms scales had a limited number of questions in the first round of data collection, one was added for each type of social norm in order to potentially extrapolate the different types of norms. Finally, both wildlife risk perceptions and the likelihood of risky wildlife photography scales had questions that included multiple wildlife. For example, the wildlife risk perception scale asked “how risky do you believe it is to get within 100 yards (length between two end zones of a football field) of bears or wolves in a national park.” Because this question asks about two different species of wildlife, it may have been confusing for participants to answer, so they were separated into two questions. The likelihood of taking risky wildlife photographs scale included a similar question involving both wolves and bears. Again, a new question was added to separate each type of wildlife. One other question for both the likelihood of taking risky wildlife photographs scale and the wildlife risk perceptions scale asked about bison and elk. For this question, bison was removed but another question was not added in order to avoid a lengthy survey that could cause survey fatigue. The full version of the second survey can be found in **Appendix C**.

3.2 Sampling and Participants

College students were considered a convenient but also appropriate population. According to the Pew Research Center, roughly “seven-in-ten Americans use social media to connect with one another, engage with news content, share information and entertain

themselves” (Pew, 2017, para. 1). This Pew research shows that 86% of 18-29 year-olds on the Internet are using social media platforms compared to 80% of 30-49 year-olds and 64% of 50-64 year-olds. The Pew Research Center also reports that 78% of college graduates use at least one social media site, 73% of Americans with some college education use at least one social media site, and 59% with a high school diploma or less use at least one social media site. It seems that social media sites are still more popular with younger, college-educated people. Since this research aimed to investigate online identity management, college students were considered a logical population to sample from given the likelihood of their social media use.

Furthermore, the National Park Service (NPS) launched their “Find Your Park” campaign in 2016 aimed at attracting a more diverse audience to national parks. Part of that effort was targeted at Millennials to increase their interest in and likelihood of visiting national parks. Thus, the visibility of national parks among this age group and the likelihood they have visited one relatively recently may have been higher due to the campaign (although, no data to confirm this exists presently). The timeliness of the NPS campaign and the study’s application to risk perceptions and risky behavior regarding wildlife in national parks adds additional support for the rationale to sample from college students.

A convenience sample of college students in an upper-level writing course that fulfills degree requirements at a large university in the western United States was drawn from. To incentivize participation, all students were offered extra credit for their course if they completed the survey. The original survey was distributed to 531 college students in the spring of 2017. There were 425 initial responses but 7 of those were incomplete and discarded leaving the total participants for the study at 418 (78.7% response rate). The modified second survey was sent to

240 college students in the summer of 2017, a semester in which class sizes are much smaller, thus offering a smaller pool of participants. There was a 75.4% response rate and 181 total participants.

3.3 Procedures

Lead instructors for several sections of an upper-level writing requirement course for a large university were approached for recruitment. Instructors that allowed recruitment from their course also allowed an incentive of extra credit for taking the survey. Announcements were made in each class regarding the purpose of the survey and the extra credit offering. Next, an email was sent to the pool of students inviting them to take the survey. The email included a link to the survey in Qualtrics. All students received a reminder email one week later asking them to take the survey if they hadn't already done so. Finally, a third email was sent only to students that had not yet completed the survey. The survey was open for two weeks.

The participants first read a brief consent form and then were asked to confirm their participation in the survey based on consent. If they agreed, they were taken to the main survey. Each scale of questions was on a separate page within the survey in order to avoid survey fatigue and to allow for greater accuracy of the Likert-style scales. Following the Likert-style questions, there was a series of open-ended questions and then demographic questions. The survey ended with a thank you note and a link to a separate survey that allowed participants to input their name and email in order to earn the extra credit incentive. The separate link for name and email allowed the researcher to keep identifying information separate from the main survey responses. By using an online survey tool, Qualtrics, participants were also able to answer the survey questions when it was the most convenient for them. Both data collections (spring 2017 and summer 2017) were downloaded from Qualtrics into separate Excel spreadsheets. Any

unfinished responses were deleted. Data was uploaded into SPSS for both datasets. Two questions for online social capital were reverse coded. All scales were examined for reliability and the multi-item indices were computed into single variables.

Because of the differences in sample sizes between the first (N = 418) and second (N = 181) rounds of data collection and relatively minor changes from the first to the second draft of the survey, it was decided it would be useful to examine whether the two datasets could be combined for better statistical power/reliability (Fowler, 2014) and a simplified presentation of the results. Independent sample *t*-tests were conducted to test if there were differences in the study's variables between the first and second rounds of data collection. Results showed that the two data collections were not statistically different (see **Table 3** in Data Analysis section).

3.4 Data Analysis

3.4.1 Quantitative Data Analysis

First, independent sample *t*-tests were conducted to analyze if the scales from the first survey to the second were statistically significantly different. T-tests showed that there were no statistically significant differences between the two data collections for any of the scales (**Table 1**); therefore, the two datasets were combined into one to test the hypotheses.

Once the datasets were combined, Cronbach's Alpha Reliability was run on all scales. All scales came back reliable at .7 or higher (**Table 2**). The wildlife risk social norms scale and the online wildlife photography social norms scale had lower reliability scores. Removing questions from each of these scales did not improve reliability. Once scales were known to be reliable, Pearson's correlation coefficient and a multiple linear regression were conducted to test the proposed model and corresponding hypotheses. Correlation analyses were conducted to test hypotheses one through three. These first three hypotheses examine relationships between some

Table 1*T-Tests Comparing Datasets 1 and 2*

Outcome	Group						<i>p</i>	<i>t</i>	df
	Dataset 1			Dataset 2					
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
Interest in Online Identity Management	3.76	0.89	417	3.70	0.82	181	0.402	0.838	596
Online Social Capital	3.48	0.75	394	3.51	0.71	178	0.635	-0.475	570
Wildlife Risk Social Norms	3.95	0.77	411	3.95	0.78	178	0.970	-0.037	587
Online Wildlife Photography Social Norms**	3.97	0.82	402	4.01	0.71	178	0.520	-0.643	385.79
Wildlife Risk Perceptions	3.28	0.73	396	3.28	0.66	176	0.926	-0.093	570
Likelihood of Taking Risky Wildlife Photographs**	2.7	0.98	407	2.83	0.87	181	0.111	-1.596	385.23

**Levine's was below .05 so "equal variances not assumed" statistics are reported for these scales.

of the independent variables in order to further understand how these variables might interact before testing how they impact the main dependent variable, the likelihood of taking risky wildlife photographs. A regression analysis can only examine contributions of the independent variables to the dependent variables and cannot examine any relationships between the independent variables. Therefore, correlations were conducted. In order to examine hypotheses four through seven and research questions 2a and 2b, a single multiple regression analysis was conducted. Multiple linear regression with interaction effect was also conducted to test hypothesis eight. In order to understand an interaction effect, a separate regression was conducted. While it is not common to exclude variables in a regression analysis, it was the only

way to test for an interaction in the current study. Finally, ANOVAs were used in order to connect the quantitative and qualitative data and to better address the third research questions.

Table 2

Reliability of Scales

	Number of Items	Cronbach's Alpha
Interest in Online Identity Management	4	$\alpha = 0.797$
Online Social Capital	25	$\alpha = 0.919$
Wildlife Risk Social Norms	6	$\alpha = 0.691$
Risky Wildlife Photography Social Norms	6	$\alpha = 0.748$
Wildlife Risk Perceptions	12	$\alpha = 0.867$
Likelihood of Taking Risky Wildlife Photographs	8	$\alpha = 0.898$

3.4.2. Qualitative Data Analysis

The current study uses thematic analysis to look for themes in the open-ended responses. “Thematic analysis is a search for themes that emerge as being important to the description of the phenomenon” (Fereday & Muir-Cochrane, 2006, p. 82). Often, this type of analysis is used to classify and identify patterns in a systematic way. “It allows the researcher to associate an analysis of the frequency of a theme with one of the whole content. This will confer accuracy and intricacy and enhance the research’s whole meaning” (Ibrahim, A., 2012, p. 40). Thematic analysis was conducted for the open-ended questions (Strauss, 1987; Patton, 2002; Sonenshein, DeCelles, & Duttun, 2014). A thematic analysis is a “method for identifying, analyzing, and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 82). These patterns or themes are then used as a way to interpret different aspects of a research topic, or, in the case of this research, as a way to enrich and give detail to quantitative data and as a way to address the third research question. Rather than be bounded by theory as in grounded theory, thematic analysis allows for a more “accessible form of analysis” (Braun & Clarke, 2006, p. 85). In thematic

analysis a theme intends to answer or address some important aspect of the data or the research question (Braun & Clarke, 2006).

Each question was first read through by the author. Categories were developed based on the initial reading of the responses for each question. Each response was then labeled with one or more categories. No response was left un-coded, but responses could be coded into more than one category. Each category was analyzed by how many responses fell into that category and patterns were identified in the data. These patterns were further organized into themes. These themes grouped the categories into meaningful constructs for further analysis. It allowed the researcher to take the participants' conceptual ideas and group them into theoretical concepts (Sonenshein, DeCelles, & Dutton, 2014). A list of themes and their corresponding categories can be found in **Table 5** and **Table 6** within the Findings chapter.

An initial question was asked to sort the participants into two groups prior to the open-ended question(s). This initial question was, "could you imagine a situation in which you might want to move closer to wildlife to take a picture?" 593 participants responded to this question (98.8% response rate) with 481 (81.1%) saying yes and 112 (18.9%) of them saying no. A review of the data was conducted and respondents that did not answer the open ended questions were deleted. After this, the response rate was 528 with 437 (82.8%) yes responses and 91 (17.2%) no responses. The data was then organized by "no" responses and "yes" responses. Those that answered yes were then asked three open ended questions. Those that answered no were asked only one open ended question.

Each group will be discussed separately below. For the "yes" group, only questions one and three were be coded. Question two was a follow up question that did not provide any more

insight into the data than the first question alone. For the “no” group, only question three was asked and then, subsequently, coded.

CHAPTER FOUR: FINDINGS

The following research questions and hypotheses were proposed for the current study.

Pearson's Correlation Coefficient was conducted for H1-H3, regression analyses were conducted for H4-H8 and as part of an exploratory analysis, and ANOVA's were conducted to connect the quantitative and qualitative data.

Research Question 1: What factors are motivating people to engage in risky wildlife photography in national parks?

- **Hypothesis 1:** Social norms that value online wildlife photography will be positively correlated with interest in online identity management.
- **Hypothesis 2:** High online social capital will be positively correlated with interest in online identity management.
- **Hypothesis 3:** Social norms that value the inherent dangers of wildlife will be negatively correlated with high wildlife risk perceptions.
- **Hypothesis 4:** High interest in online identity management will predict a high likelihood of taking risky wildlife photographs.
- **Hypothesis 5:** High online wildlife photography social norms will predict a high likelihood of taking risky wildlife photographs.
- **Hypothesis 6:** High wildlife risk social norms will predict a high likelihood of taking risky wildlife photographs.
- **Hypothesis 7:** High wildlife risk perceptions will predict a low likelihood of taking risky wildlife photographs.
- **Hypothesis 8:** There will be an interaction effect between wildlife risk perceptions and online identity management in how they influence the likelihood of taking risky wildlife photographs.

Research Question 2a: Does gender impact the likelihood of taking risky wildlife photographs?

Research Question 2b: Does familiarity with national parks (measured as park visitation frequency and past/current employment) impact the likelihood of taking risky wildlife photographs?

Research Question 3: What strategies might help keep people a safe distance from wildlife in national parks?

4.1 Quantitative Data

4.1.1 Sample Characteristics

With the combined data from rounds one and two of data collection, the sample size was 599 participants. Eleven participants did not report gender but of those that did, 295 (49.2%) were male, 284 (47.4%) were female, and 9 (1.5%) identified as other. Participants ranged in age from 18 to 51 and the mean age was 22 ($SD = 2.98$). Participants were also asked how many times they have visited a national park within the past three years. The majority ($n = 204$, 34.1%) had visited a national park 1-3 times (**Table 3**). Finally, participants were also asked if they are currently or have been employed by a national park or NPS in the past three years; the majority ($n = 571$, 95.3%) indicated “no”.

Table 3

Participants' Park Visits

Park Visits	<i>n</i>	%
None	37	6.2%
1 – 3 times	204	34.1%
4 – 6 times	137	22.9%
7 – 9 times	67	11.2%
10 or more times	142	23.7%

4.1.2 Main Findings

Interest in online identity management, online social capital, wildlife risk social norms, and online wildlife photography social norms scales were all measured using a range from

1(strongly disagree) to 5(strongly agree). The wildlife risk perceptions scale ranged from 1(not at all risky) to 5 (extremely risky). Finally, the likelihood of taking risky wildlife photographs scale ranged from 1(not at all likely) to 5(extremely likely). Interest in online identity management, online social capital, and the two social norms scales have means ranging from 3.49 to 3.98 on scales ranging from 1 to 5 (**Table 4**). In other words, most participants seem to have moderately strong interest in online identity management, high online social capital resources, strong wildlife risk social norms, and strong online wildlife photography social norms. Wildlife risk perceptions and likelihood of taking risky wildlife photographs had average responses closer to the center of the scales with means of 3.28 and 2.74 respectively (**Table 4**).

Table 4

Descriptive Statistics for all Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>
Interest in Online Identity Management	598	3.74	0.87
Online Social Capital	572	3.49	0.74
Wildlife Risk Social Norms	589	3.95	0.77
Online Wildlife Photography Social Norms	580	3.98	0.79
Wildlife Risk Perceptions	572	3.28	0.71
Likelihood of Taking Risky Wildlife Photographs	588	2.74	0.95

Pearson's correlation analyses were conducted to test H1-H3, which predicted relationships among the independent variables in the model. Hypothesis 1 predicted a positive relationship between social norms that value online wildlife photography and interest in online identity management. The correlation analysis indicated a weak, positive relationship, confirming hypothesis 1, $r(580) = .346, p < .01$. Hypothesis 2 predicted a positive relationship between high online social capital and interest in online identity management. The correlation indicated another weak, but positive relationship, $r(572) = .271, p < .01$. Finally, hypothesis 3

was also supported showing a weak, but negative relationship between social norms that value wildlife risk and wildlife risk perceptions, $r(564) = -.131, p < .01$. *Figure 4* further illustrates these findings.

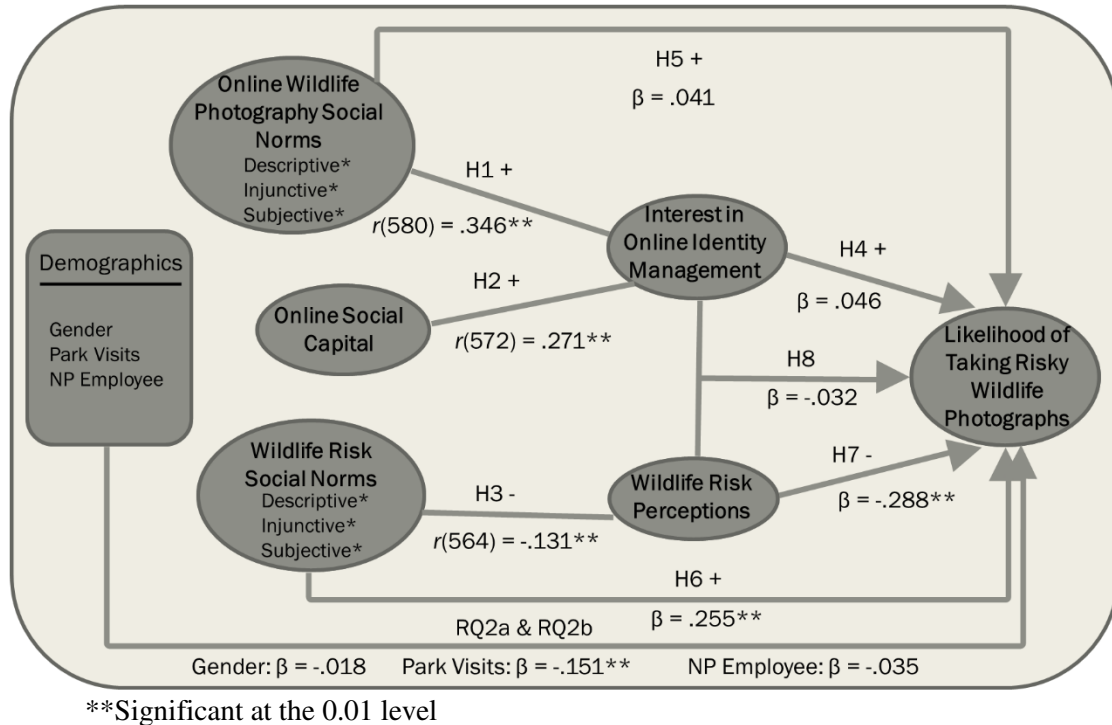


Figure 4. Wildlife Risk Perception and Identity Model Findings

To examine what factors predict the likelihood of taking risky wildlife photographs, a regression analysis was conducted to test H4-H7 and answer RQ2a and RQ2b. The independent variables tested in the regression model were interest in online identity management, online social capital, wildlife risk social norms, online wildlife photography social norms, wildlife risk perceptions, gender, national park employee status, and national park visits. The dependent variable was likelihood of taking risky wildlife photographs. The model accounted for 21.3% of the variance in the likelihood of taking risky wildlife photographs ($R^2 = .213, (F = 8, 517) = 17.214, p < .01$). The analysis indicated that park visits ($\beta = -.151, p < .01$), wildlife risk social norms ($\beta = .255, p < .01$), and wildlife risk perceptions ($\beta = -.288, p < .01$) were the only significant predictors in the model. It seems that individual's that visit a national park more often

are less likely to take risky wildlife photographs. These results also indicate some predictive power when it comes to wildlife risk perceptions and wildlife risk social norms. Those with a referent group that encourage risky wildlife behaviors are more likely to take risky wildlife photographs. Finally, those with high wildlife risk perceptions are less likely to take risky wildlife photographs. High wildlife risk perceptions and familiarity with a national park seem to help discourage visitors from taking risky wildlife photographs while individual's with a referent group encouraging risky wildlife behaviors tend to take more risky photographs themselves.

Table 5

Multiple Linear Regression Model

Variable	Likelihood of Taking Risky Wildlife Photographs		
	<i>B</i>	<i>SE B</i>	β
Interest in Online Identity Management	.050	.046	.046
Online Social Capital	-.038	.055	-.030
Wildlife Risk Social Norms	.311	.058	.255**
Online Wildlife Photography Social Norms	.049	.061	.041
Wildlife Risk Perceptions	-.387	.056	-.288**
Gender	-.032	.072	-.018
Park Visits	-.109	.029	-.151**
National Park Employee	-.218	.249	-.035
<i>R</i> ² (<i>Adjusted</i>)		.213	
<i>F</i>		17.214**	

* $p < .05$. ** $p < .01$

Multiple linear regression with an interaction effect was used to test hypothesis 8 (**Table 5**). Hypothesis 8 predicted an interaction between online identity management and wildlife risk perceptions in how they impact the likelihood of taking risky wildlife photographs. It is possible that online identity management is having a buffering effect on wildlife risk perceptions in how it correlates with the likelihood of taking risky wildlife photographs. In other words, interest in online identity management might be moderating the effect of wildlife risk perceptions on the likelihood of taking risky wildlife photographs. In order to avoid issues with collinearity, both

online identity management and wildlife risk perceptions were centered. These new centered variables were then multiplied together in order to run a multiple linear regression to investigate an interaction effect. The results of this analysis showed that interest in online identity management predicted risky wildlife photography, $\beta = .111$, $t(595) = 2.733$, $p < .01$. Risk perceptions predicted risky wildlife photography, $\beta = -.349$, $t(595) = -7.085$, $p < .01$. The interaction effect did not significantly predict the likelihood of taking risky wildlife photographs. In other words, when online identity management and risk perceptions interact, the impact on the likelihood of taking risky wildlife photographs disappears. If an individual has high interest in online identity management, they are more likely to take risky wildlife photographs. However, when they have high online identity management and high wildlife risk perceptions, it cannot be predicted whether or not they will be likely to take risky wildlife photographs. The predictive power of these relationships is weak and this regression analysis was conducted ignoring other pieces of the model. Therefore, these results should be taken with caution. In fact, the entire regression accounted for just 11.9% ($R^2 = .119$, $(F = 3, 595) = 26.306$, $p < .01$) of the variance in likelihood of taking risky wildlife photographs.

Table 6

Multiple Linear Regression with Interaction Effect

Variable	Likelihood of Taking Risky Wildlife Photographs		
	<i>B</i>	<i>SE B</i>	β
Interest in Online Identity Management	0.121	0.044	.111**
Wildlife Risk Perceptions	-0.469	0.054	-.349**
OIM x Wildlife Risk Perceptions	-0.047	0.058	-.032
R^2 (Adjusted)		0.119	
<i>F</i>		26.306**	

* $p < .05$. ** $p < .01$.

4.1.3 Exploratory Analyses

In order to better understand the nuances of the different types of wildlife risk social norms (descriptive, injunctive, and subjective) and the different types of wildlife photography social norms (descriptive, injunctive, and subjective) another multiple linear regression model was conducted.

Table 7

Multiple Linear Regression Model Including the Different Types of Social Norms

Variable	Likelihood of Taking Risky Wildlife Photographs		
	<i>B</i>	<i>SE B</i>	β
Interest in Online Identity Management	.099	.053	.090
Online Social Capital	-.033	.060	-.027
Wildlife Risk Social Norms, Subjective	-.038	.042	-.044
Wildlife Risk Social Norms, Descriptive	.072	.050	.070
Wildlife Risk Social Norms, Injunctive	.208	.034	.322**
Online Wildlife Photography Social Norms, Subjective	.031	.037	.045
Online Wildlife Photography Social Norms, Descriptive	.016	.065	.012
Online Wildlife Photography Social Norms, Injunctive	.016	.042	.078
Wildlife Risk Perceptions	-.296	.065	-.222**
Gender	-.056	.082	-.032
Park Visits	-.096	.032	-.137**
National Park Employee	-.290	.281	-.047
<i>R</i> ² (Adjusted)		.253	
<i>F</i>		11.808**	

* $p < .05$. ** $p < .01$

The model accounts for 25.3% of the variance in the likelihood of taking risky wildlife photographs ($R^2 = .253$, ($F = 12, 370) = 11.808$, $p < .01$). As indicated in the original regression model both national park visits ($\beta = -.137$, $t(370) = -3.007$, $p < .01$) and wildlife risk perceptions ($\beta = -.222$, $t(370) = -4.533$, $p < .01$) significantly predict likelihood of taking risky wildlife photographs. Wildlife risk social norms and online wildlife photography social norms were broken down into the three different types of social norms. Of the six different types of social

norms, injunctive wildlife risk social norms was the only one that significantly predicted the likelihood of taking risky wildlife photographs ($\beta = .322$, $t(370) = 6.127$, $p < .01$). In the original regression model, wildlife risk social norms significantly predicted likelihood of taking risky wildlife photographs. This model indicates that injunctive wildlife risk social norms is the only type of norm that impacts this behavior. In other words, increased park visits and increased wildlife risk perceptions seem to predict a lower likelihood of taking risky wildlife photographs and a high level of injunctive wildlife risk social norms seem to predict a higher likelihood of taking risky wildlife photographs. Injunctive norms are those behaviors that our peers approve or disapprove of. It seems approval of risky wildlife behaviors from peers predicts the likelihood of performing risky wildlife behaviors when the behaviors that our peers perform themselves and the behaviors that our peers expect us to perform don't seem to impact the likelihood of taking risky wildlife photographs. In other words, it seems actual judgment of behaviors (whether they are viewed positively or negatively) seems to impact behavior in this situation rather than behaviors that others perform or expect us to perform. Perhaps there is something about the judgement of a behavior that is more impactful on influencing decisions for risky wildlife photography versus actions (real or imagined).

Because both the wildlife risk perception scale and the likelihood of risky wildlife photographs scale included statements about different types of wildlife, an exploratory analysis was conducted to determine if risk perceptions about different wildlife correlated with their likelihood of taking risky wildlife photos. **Table 8** and **Table 9** indicate descriptive statistics for both of these scales.

Table 8*Descriptive Statistics for the Wildlife Risk Perception Scale Items*

Scale Question	N	Mean	SD
Leave food out	591	4.34	.946
Feed wildlife	591	4.17	1.03
Not move away	590	3.83	1.08
Elk – 25 yards	593	3.78	1.17
Bear – 100 yards	595	3.76	1.13
Wild horses – 25 yards	593	3.35	1.25
Approach wildlife	593	3.27	1.15
Seal – 25 yards	593	2.99	1.21
Deer – 25 yards	592	2.85	1.25
Nesting bird – 25 yards	591	2.69	1.26
Camp or stay at a NP	594	2.27	1.01
Visit a NP	597	1.89	.936

Note. Higher means correspond to higher risk perceptions.

Table 9*Descriptive Statistics for the Likelihood of Taking Risky Wildlife Photographs Scale Items*

Scale Question	N	Mean	SD
In your vehicle	595	3.26	1.24
Move closer to a bird	595	2.95	1.28
Move closer to a deer	594	2.93	1.24
Move closer to a seal	594	2.90	1.22
Not move away	595	2.77	1.24
Move closer to a horse	594	2.54	1.23
Move closer to an elk	593	2.44	1.24
Move closer to a bear	594	2.13	1.26

Note. Higher means correspond to greater likelihood of engaging in the risky wildlife photography.

In order to better understand if the different types of wildlife differ in the ways they impact the likelihood to take risky wildlife photographs, direct correlations were conducted between the types of wildlife in wildlife risk perceptions and the types of wildlife in the likelihood of taking risky wildlife photographs. For example, correlations were conducted between risk perceptions for bears and likelihood of taking risky photographs of bears. They were all found to be negatively correlated, meaning the higher the wildlife risk perception for a

specific wildlife, the less likely an individual would be to take a risky wildlife photograph of that particular animal. See **Table 10**.

Table 10

Correlations of Wildlife Risk Perception and Likelihood of Taking Risky Wildlife Photographs by Wildlife

IV	DV	N	Pearson's r	Significance
Risk Perception, Birds	Risky Photos, Birds	589	-.371	$p < .01$
Risk Perception, Horses	Risky Photos, Horses	590	-.362	$p < .01$
Risk Perception, Elk	Risky Photos, Elk	589	-.361	$p < .01$
Risk Perception, Seals	Risky Photos, Seals	590	-.344	$p < .01$
Risk Perception, Deer	Risky Photos, Deer	589	-.308	$p < .01$
Risk Perception, Bears	Risky Photos, Bears	592	-.271	$p < .01$

4.2 Qualitative Data

When asked if participants could imagine a situation in which they would move closer to wildlife to take a photo, 437 indicated “yes” and just 91 indicated “no”. Of the 528 participants that answered the open-ended questions the majority of them (82.76%) could see themselves getting close to wildlife. This large number indicates that the majority of people within this study would move closer to wildlife to take photographs. Because the current study is focused on motivating factors for moving close to wildlife for risky photography, the qualitative analysis will first focus on the large majority of participants that said they would do just that.

4.2.1 “Yes” Group: Those that Could Imagine Moving Closer to Wildlife

The “yes” group were asked three questions. The second question was a follow up question to the first one that did not add richness or insight to the data outside of what the first question contributes. Therefore, it will not be discussed here. All responses were coded into at least one category with some of the responses being coded into multiple categories.

4.2.1.1 Question One Analysis: Motivations for Getting Close to Wildlife

Question one asked participants:

Describe 1-2 scenarios you have either experienced or could easily imagine in which you would move closer to wildlife in a national park to take a picture.

Consider including the type or types of animals and why you want to (or did) move closer to it for the picture in each scenario.

This question aims to give a more nuanced understanding of why participants have in the past or may approach wildlife in the future for a photograph. When participants talked about getting closer to wildlife no matter the reason, they often talked about specific wildlife and gave examples of the types of animals they would move closer to. Even if they thought it was risky, it seems the participants of this study all had an idea of the kinds of wildlife they would like to see closer up. The threat that participants feel from certain animals also varies. For instance, one participant wrote “I could imagine taking a photo if certain animals approached me while I was in my car. Things like bears or seals I would probably stick around for, but not more common or dangerous animals like elk or bison” (Y285). Another participant thought elk were safer than bears and stated, “I have moved closer to take photos of chipmunks or elk, but if I saw a bear, wildcat, or snake, I would be very quick to move away” (Y287).

Nineteen categories were identified with ten of those including at least 20 responses or more. **Table 11** lists all categories in order from the least responses to the most responses. After categories were identified within the data, themes emerged from these categories. These themes allow for grouping of the categories to match with theoretical concepts. The theoretical concepts or themes that emerged from this dataset allowed for better connections between the quantitative and qualitative data which, in turn, allowed for more nuanced understanding of the motivations

Table 11*Qualitative Responses to Motivations for Getting Close to Wildlife by Category*

Categories	Count	Percentage
Small, perceived non-threatening	84	16.09%
Medium-large, perceived non-threatening	69	13.22%
Vehicle/building/boat	58	11.11%
Animals in cages/barriers/safe distance	52	9.96%
Rare wildlife/animals they've never seen before	41	7.85%
Get a clear photo or better view	39	7.47%
Example with no reason or motivation	38	7.28%
Attractive wildlife	28	5.36%
Not applicable	27	5.17%
Familiarity/ feeling of comfort, safety	20	3.83%
Photo as a keepsake/memory/show family and friends	12	2.30%
Accidently	11	2.11%
With other people/others are doing it	11	2.11%
With a guide/safe circumstance	9	1.72%
Escape route planned	7	1.34%
Distracted wildlife/risk taking	6	1.15%
Express regret	5	0.96%
Wildlife is trapped, in danger, or hurt	4	0.77%
Hunting	1	0.19%

for moving closer to wildlife for photography. The nineteen categories were grouped into five major themes. *Figure 5* illustrate each major theme. While participants varied on the types of wildlife they would move closer to, these themes were not based on types of wildlife but on larger theoretical concepts such as social norms and risk perceptions. It should be noted that some respondents might feel safe around certain wildlife while others do not. This distinction is not accounted for in the major themes but was addressed in an exploratory analysis of the quantitative data. A review of each theme will follow.

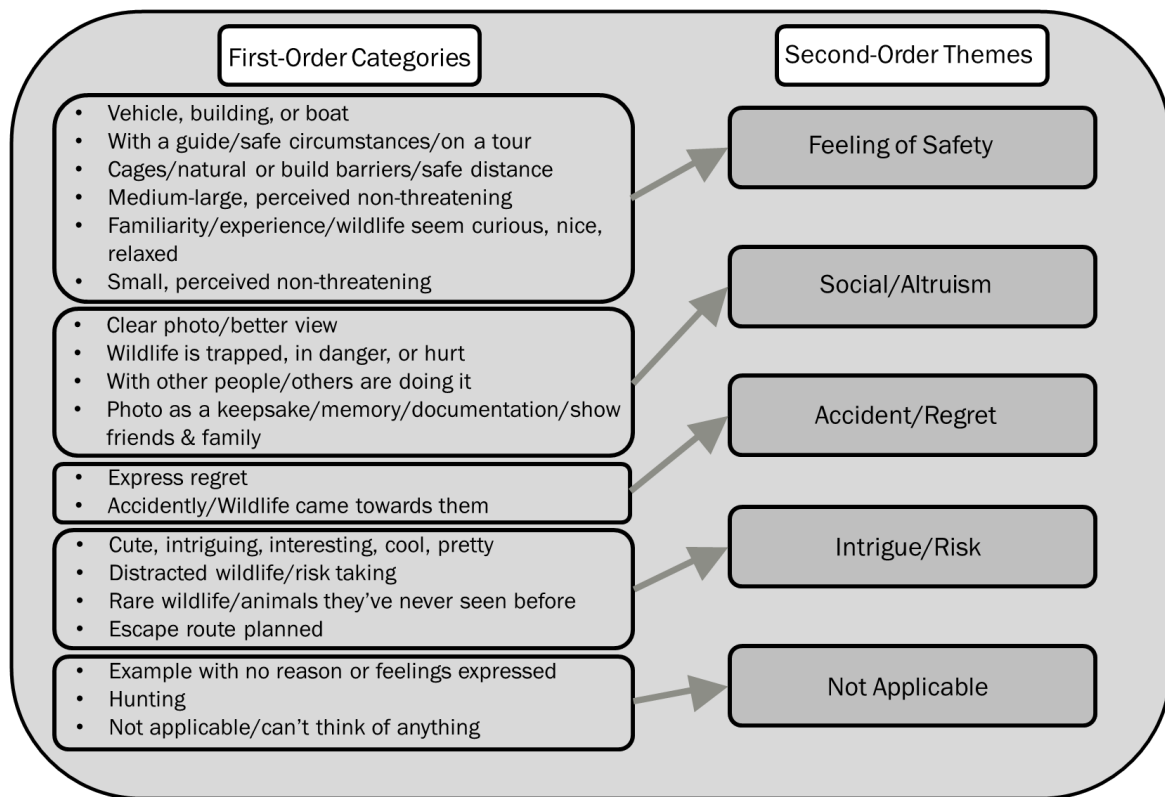


Figure 5. Motivations for Moving Closer: Structure of Qualitative Data Themes and Categories

4.2.1.2 “Feeling of Safety”

Six categories make up the theme “Feeling of Safety.” This theme encompasses responses where participants’ indicated feeling safe either because the wildlife were not perceived as risky, they were behind some sort of physical barrier, or the participant had experience with wildlife. This feeling of safety implies a lack of risk awareness for both the wildlife and the individual’s own safety. This theme included responses about familiarity with wildlife, the wildlife coming across as curious, nice, relaxed, or calm and any time a respondent referred to wildlife interactions as a “normal occurrence” for them. For example, one respondent wrote, “I would move closer to wild horses on a beach or in a national park because I am familiar with their behavior and know what causes them to be easily scared away” (Y122). Another respondent wrote they would move closer to wildlife “if the animal is nice and seems curious” (Y150). This sense of comfort with wildlife can be a dangerous mindset. For instance, one

respondent wrote they took pictures of themselves with elk because “the elk seemed calm and undisturbed” (Y181). It can be hard to predict wildlife behavior because they are wild animals and those that have a sense of comfort around these animals in wild settings like national parks can potentially be threatening to both the human and wildlife. Nine other responses addressed getting close to wildlife on a tour or with a guide of some kind. These tours and guides give a feeling of authority and safety.

Participants also mentioned getting close to wildlife if there was a natural or man-made barrier in place like a river, a cage, or a fence. These responses were all in the vein of staying safe. Such as, “a small animal with some sort of barrier between us like a fence” (Y58) or “I would only get closer to deer or elk if they’re behind a fence or other barrier” (Y86). Another participant responded, “if there was a large geological feature dividing us such as a river or valley and I was on one side and wildlife was on the other I would get closer to the edge of the dividing but would never cross” (Y397). Similar to this idea of a barrier or safe distance, other participants mentioned getting close if they were in a vehicle, building, or a boat. These were often examples of getting close to wildlife such as “I was driving in a car with my friends when a baby bear crossed the road right in front of us so we drove the car closer to where we saw it and kept the windows up and watched as the bear was about 20 feet away from us” (Y411). Another participant wrote, “I was driving through the black hills and saw a buffalo in the ditch, so we pulled over the car and took a few pictures” (Y421). Some of these responses were about pulling over to view animals and others were about driving by them.

Finally, the most common responses revolved around getting close to perceived “non-threatening” wildlife. For example, “if I deem the animal non-threatening I may move closer” (Y133). Another participant wrote, “if I came across animals including deer or elk, because they

are not omnivores and would feel less in danger” (Y155). Other participants wrote specifically about smaller wildlife. For example, “I try to move closer to small animals all the time – chipmunks and birds, etc.” (Y205). Another participant stated, “I could see myself getting within 25 yards to smaller and non-threatening animals, like a bunny or fox, in order to get a better quality photograph” (Y212). Whether wildlife was perceived as non-threatening or there was some sort of barrier in place, when participants in this study felt safe they indicated moving closer to wildlife for a photograph. This feeling of safety seems to be important in people’s decision making when it comes to wildlife photography. However, a feeling of safety can be very different for different individuals. As mentioned earlier, types of wildlife vary as well as context regarding what makes people feel safe. Further understanding of what makes people feel safe would help communication practitioners and park staff keep people from approaching or getting close to wildlife in national parks.

4.2.1.3 “Social/Altruism”

The next main theme included four categories. This theme was titled “social/altruism” and included categories that were social in nature. These categories included any responses where individuals wanted a better photograph or view to share with others or to keep a photograph as a memory often to share with others. It also included a category where wildlife were trapped or hurt and participants’ felt the wildlife needed help. They either wanted to help the wildlife, share their experiences with others, or take photographs to remember the moment.

There were 11 responses that referenced social norms in some way. They talked about getting close if there were other people or if they saw other people doing it. This theme included responses such as, “the pictures were used to describe how close we were and as keepsakes” (Y129). Another respondent wrote, “I would move closer for the photo just to show all my

relatives and friends I've been this close to the animal before" (Y2) These responses all indicate taking a photo as a means of preserving the experience to share with others and/or to save for later use. These types of responses seem to reference social norms around photography, sharing experiences with others, and/or helping wildlife that are in need. These responses also seem to lack awareness about how getting close to wildlife might harm the wildlife they are trying to help or take a photograph of.

4.2.1.4 "Accident/Regret"

Two categories encompass the theme "accident/regret." These responses were all about coming across wildlife on accident, wildlife approaching the individual, or regretting being close to wildlife. This theme really illustrates comments about not wanting to be close to wildlife. Five responses expressed regret in getting close to wildlife. There were 11 responses that gave examples of wildlife moving towards them or coming upon wildlife accidentally.

4.2.1.5 "Intrigue/Risk"

The next theme titled "intrigue/risk" included four categories that all entail responses about being attracted to wildlife because they are intriguing or because of the risk of getting close to the animals. Six responses talked about getting close to wildlife that are distracted or not looking at the person and therefore creating a false sense of safety. These participants seem to realize it is dangerous to be close to wildlife but they do it anyway. Similar to having a distracted wildlife, seven others talked about how they would approach wildlife or get close to wildlife for a photograph if they had an "escape route planned" or if they could "easily get away." Again, these comments implied a sense of risk but with a guise of feeling safe. The participants realized it was a risky thing to do but seem to think taking the risk would be worth it.

Twenty-eight responses described wanting to get closer to wildlife because they are cute, intriguing, interesting, cool, and/or pretty. This implies that individuals find wildlife to be attractive in some way but do not fully understand that getting close to that wildlife might harm the animal that they find attractive in the first place. There were three responses in this theme that explicitly state they would move closer to baby animals. For example, “if there are babies and I wanted to see them” (Y229) and “if there were baby animals I might move closer to take a picture” (Y131). Another response that sums up this theme well was, “I would have to take pictures of wildlife because it is so authentic and honestly, just pretty cool” (Y142). Participants also mentioned getting close to animals they have never seen before or rare wildlife. One participant responded, “seeing a rare animal, I would move closer” (Y158). Another wrote, “I wouldn’t want to get too close and be harmed just for a picture, but if it’s a rare opportunity I think is cool, I want to get the best picture I can to remember it” (Y214). One other participant wrote, “if it were an animal that was rare like a white buffalo” (Y357). Finally, another response was, “if it’s a creature I have never seen before” (Y368). The risk seems to be worth it to participants that think wildlife are attractive, rare, or if they have an escape route planned. There is a sense of risk under a guise of feeling safe. Responses in this theme seemed to illustrate some sort of understanding of risk but either the risk itself or something else about the wildlife (attraction) pulled them closer anyway.

4.2.1.6 “Not Applicable”

Finally, the theme “not applicable” included three categories that all included responses that either did not answer the question that was asked or were responses that were not helpful to the aim of the analysis in the current study. For instance, one response fell into the category “hunting.” While this is a unique response and unique reason for approaching wildlife, it is not a

response for getting close for a photograph and does not seem pertinent to the current study. Other responses included variations of not having an idea of when they would move closer to wildlife or responses with examples but no real reason or motivation for getting close to wildlife.

4.2.1.12 Question Three Analysis: Strategies for Staying a Safe Distance from Wildlife

Question two asked participants to expand on question one and, in particular, their feelings about getting closer to wildlife to take a photograph. The initial analysis indicated that this question did not add depth to question one for the purpose of this research and will not be analyzed here.

Question three asked:

What do you think might help you (or others like you) stay a safe distance from wildlife in national parks, even if that meant not getting the type of picture you would like to have of your experience? For example, are there types of information, ideas, or experiences that might make you more likely to keep a safe distance?

Fifteen categories were identified and grouped into five major themes. Three of the fifteen categories were unique to the “yes” group. *Figure 6* summarizes each theme with the three unique categories italicized. A review of each theme follows.

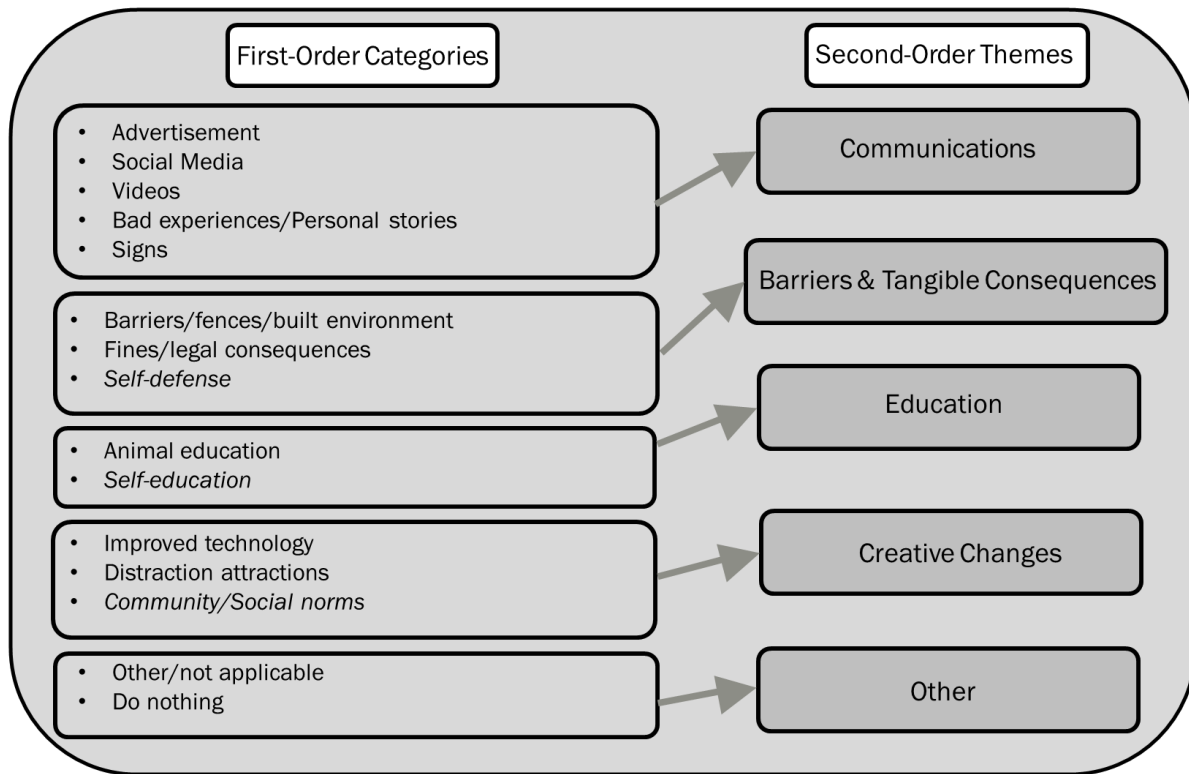


Figure 6. Strategies for Staying a Safe Distance: Structure of Qualitative Data Themes and Categories

4.2.1.13 “Communications”

The theme “communications” included all categories that discussed different types of communication strategies as a way to help keep people a safe distance from wildlife. This includes advertisements, social media, videos, anecdotes, and signage. Social media campaigns and paid advertisements weren’t as common as other communication strategies such as videos, signs, and anecdotes or personal stories/experiences. Sixteen participants responded with suggestions for “videos” of some kind. This theme often talked about videos showing the dangers of wildlife. For example, one participant stated, “I think maybe an educational video about the dangers may help people realize the risks they are taking” (Y272). Another participant responded more graphically by stating, “I think warning videos of people getting mauled/stomped by animals would deter many people from being too close to wildlife” (Y291).

The three most common responses were in the categories “bad experiences,” “signage,” and “animal education.” “Bad experiences” had 58 responses. This theme encouraged using past experiences, statistics, or photos of what happens when you get too close to wildlife. This theme also included responses where the participants talked about how an experience helped them realize the dangers of getting close to wildlife. One respondent suggested that “perhaps hearing other’s experiences of close encounters with dangerous animals might sway my decision” (Y167). Another participant stated that “to help me stay a safe distance from wildlife in national parks, I think historical experience might help. If I heard people are seriously injured by wildlife, I will try to stay safe” (Y345). Signage was the second most popular suggestion from these participants. Eighty-six responses fell into this theme. For example, “signs as constant reminder to leave nature (including the animals) alone” (Y367). Another participant stated, “put up signs that say what is a safe distance to stay away from each type of wildlife” (Y393). One other participant noted that “posting signs about what to do when you see/come across wildlife so that the person can get out of the situation safely” (Y397) would be a good idea.

4.2.1.14 “Barriers and Tangible Consequences”

Some participants suggested building barriers, creating or enforcing legal consequences, or having some sort of self-defense like a gun. These types of suggestions were more tangible consequences to getting close to wildlife. Rather than educating people or informing people of the dangers, they suggest making it impossible to get close by creating barriers or creating harsh consequences if you do get close such as law enforcement. Twenty-eight responses fell under the theme “built environment.” This theme discusses fencing and other barriers. One participant articulated this by saying, “I think barriers and fences would be a good way to keep a safe distance” (Y17). Other participants made comments about how fencing can hinder wildlife and

their habitat making a good counterargument to the notion of fencing and other barriers. A national park is not the same thing as a zoo and fencing or other barriers might get in the way of wildlife's natural habitat. Twenty-eight responses talked about enforcement, legal consequences, fines, and park rangers in the area. There were a handful of these responses that didn't know if there were already rules, regulations, or laws in place for safe distances from wildlife. For instance, "people are gonna do what they want to do unless there's a law or something" (Y77) or "if there was a law or if I was informed of a law prohibiting moving a certain distance of wildlife I could be much more likely to stay a safe distance from wildlife" (Y117). There were only three responses in the self-defense theme but they were all unique compared to any other theme and often referred to using guns to protect yourself in the wild.

4.2.1.15 "Education"

Two categories encompass the theme "education." They include either providing educational opportunities for park visitors or expectations about park visitors educating themselves before they visit a national park. "Animal education" seemed to be a rather popular response for these participants with 132 responses. These suggestions all entailed some sort of educational response such as "education is always a prime piece of preventing people from doing things that are not helpful to them or wildlife. A class is a great idea, or maybe creating areas that keep people back, but are more likely to see wildlife" (Y398). Another participant thought that the "most important thing to assist wildlife in many situations, including this one, is education" (Y415). Most of these responses did not include how or who would administer this type of education. Finally, there were 20 responses for "self-education." These responses were similar to animal education except that they wanted individuals to inform themselves, google information, or come to the parks more prepared rather than suggesting that the parks or others help educate

them. For example, “I think people need to do their research before interacting with wildlife on how aggressive they are and what their behavioral tendencies can be” (Y408).

4.2.1.16 “Creative Changes”

The theme “creative changes” included responses for improved technology and changes in social norms or community values. Some participants suggested better cameras in order to take good photographs from a safe distance. The category “distraction attractions” included 11 creative responses such as handing out wildlife photographs for free or renting out nice cameras as way to discourage people from getting too close to wildlife while still getting a good photograph. While there weren’t a lot of responses in this category, it did entail some creative ideas and creative thinking that might leave some room for further exploration in the future. Another suggestion that came up a couple of times was having viewing areas for people to go to in order to see wildlife. There were nine responses for community/social norms. These suggestions were either creative ideas about creating community involvement or suggestions about creating new social norms around social media and photography. None of these gave tangible ways to do this but they were definitely a different approach compared to a lot of the other types of response. For example, one participant wrote, “somehow make apparent all the benefits that can come from each individual contribution. Also by creating a community like aspect, maybe people will be more inclined to do what others are doing” (Y65).

4.2.1.17 “Other”

The final theme here included responses that had no real suggestions for keeping people a safe distance. They were either not applicable responses that didn’t answer the question or they were suggestions for “do nothing.” There were 26 responses that seemed to be rather angry or pessimistic. This category was titled “do nothing.” These responses all seemed to think signs and

information won't help and that people will do what they feel like doing no matter what they are told. Others often talked about "natural selection" and letting people get hurt or even worse killed by wildlife. These responses often ignored the threat getting close to wildlife poses for the wildlife and focused on the dangers to humans instead. For example, one participant stated, "I think you should let natural selection run its course and anybody who is dumb enough to approach an animal that could kill them deserves what they get" (Y195).

4.2.1.17 Unique Categories

As mentioned previously, three categories were identified in this group of participants that were not identified in the "no" group of participants. They were "self-education," "self-defense," and "community/social norms." These three categories were not identified into just one specific theme and there doesn't seem to be a common theoretical concept associated with them. These three categories could be due to the fact that this group is more likely to move closer to wildlife and have more nuanced ideas from their own personal experiences or it could be because the sample size for this group was much larger and, therefore, produced more diverse ideas.

4.2.2 "No" Group: Those that Could Not Imagine Moving Closer to Wildlife

The group of participants that responded "no" when asked if they would get closer to wildlife for a photograph were asked only one open-ended question. They were asked the third question from the "yes" group which investigated the types of messaging or strategies one might use in order to keep people a safe distance from wildlife. Twelve categories were identified for these participants and were grouped into the main five themes discussed previously. Again, the "yes" group had the same 12 categories plus three extra categories that were not identified for this group ("self-defense," "self-education," and "community/social norms").

4.2.2.1 *"Communications"*

The "communications" category included all responses mentioning some type of communication strategy to help keep people a safe distance from wildlife. For example, one participant wrote, "videos to show how violent wild animals can be once spooked" (N83). Using past experience and personal anecdotes came up often. This was the idea that witnessing, being a part of, or illustrating negative human-wildlife experiences would help people understand and learn to stay a safe distance from wildlife in national parks. One participants stated, "real life examples of how getting close to wildlife can be risky would help stay a safe distance from wildlife" (N27). Another participant wrote, "listing all the negative impacts and outcomes from approaching wildlife. Bad experiences would be very discouraging" (N36). There were a total of 13 responses within this category and it was the third most popular category for this group. It was also the third most popular category in the "yes" group indicating some consistency between the two groups as far as the types of messaging or strategies that might help keep people a safe distance from wildlife.

Another major communication category identified was "signs." There were 19 responses that referred to using signs or posters to remind or inform people to keep a safe distance from wildlife. This was the second most popular category for both the "yes" group and the "no" group. Within the "no" group some responses talked about setting a specific distance like this one, "maybe a sign setting a specific distance needed between wildlife and humans before entering the national park" (N43). Others talked about using signs to inform people of the dangers of wildlife such as this response, "signs with the dangers of moving close to wildlife" (N54). One participant was very passionate about the topic choosing to respond in all capital letters, "A big red sign at every park entrance that says (in caps lock and in bold) PEOPLE HAVE DIED

TAKING PICTURES OF WILDLIFE THEY'VE GOTTEN TOO CLOSE TO. YOU ARE NOT GOD. THE NEAREST HOSPITAL IS (insert time) AWAY IF YOU GET ATTACKED. THINK YOU'LL MAKE IT THERE IN TIME WHILE GUSHING BLOOD? DON'T BE STUPID. MAKE GOOD LIFE CHOICES” (N89). This response and others like it show that at least some participants are very passionate about this topic.

4.2.2.1 “Barriers and Tangible Consequences”

“Barriers and tangible consequences” all refer to some sort of built environment or legal fines as a way to deter park visitors from moving too close to wildlife. For instance, “fines/legal consequences” were comments such as enforcing current regulations in the parks, and “built environment” were comments that suggested building a safer and more regulated environment for viewing wildlife. One participant even noted, “greater enforcement from park rangers” (N90) as a way to keep people a safe distance.

4.2.2.1 “Education”

The most responses for one category was “animal education” where individual’s spoke a lot about respect for wildlife and educating the general public about the dangers and importance of wildlife and the ecosystem. This was the most popular category (excluding “not applicable” responses) for both groups. Most of these responses did not give details on how they would educate people but there were 22 responses here indicating that education seems to be important to this group of individuals. For example, one participant wrote, “understanding the capabilities of the animals and the importance of respecting and observing them from a safe distance” (N21). Another respondent wrote, “I think educating others regarding the fragility of ecosystems in national parks, and how people can negatively impact the wildlife by trying to get to intimate

with it. A good example would be Hanging Lake in Colorado, and the issues that have been brought up regarding tourists swimming in the lake” (N38).

4.2.2.1 “Creative Changes”

“Creative changes’ included things like “improved technology” such as using your zoom on your camera. Participants would respond with things like, “use the zoom on your camera/buy a better camera” (N25). There was one unique response that suggested a “distraction attraction” by stating “maybe having stuffed animals to get close to and look at would be good, or having a way to view the wildlife at long distances with binoculars or something like that” (N76).

4.2.2.1 “Other”

There was a large majority of individual’s that responded with things that were not applicable to the question. In other words, they didn’t really answer the question that was being asked. There were 24 responses like this. For example, one participant simply responded, “not take pictures” (N64). Others would respond with personal examples or information on why wildlife are dangerous and not really addressing what could be done to help keep people at a safe distance. One other participant suggested doing nothing at all and wrote, “if people want to do something, they will do it and they should be responsible for the consequences. Survival of the fittest, right? More information is just going to be ignored like the rest” (N17). This response suggests a lack of awareness of the dangers to the wildlife and focuses on the dangers to the humans only. All of these responses didn’t give any advice or suggestions on ways to keep people a safe distance from wildlife.

4.2.3 Mixed Methods Analysis

ANOVAs were conducted to compare the different qualitative themes with the quantitative data. The first question asked participants to describe a time they have or could

imagine in which they would move closer to wildlife for a photograph. Based on the qualitative data, there were 19 first-order categories that rolled up into six second-order themes for their motivations for moving closer to wildlife for a photograph. These six themes were used to compare if they differed significantly based on wildlife risk perceptions and the likelihood of taking risky wildlife photographs. These themes or groups were: a feeling of safety, social/altruism, accident/regret, intrigue/risk, and not applicable. In other words, do individuals that express a feeling of safety as motivation to get closer to wildlife for a photograph differ in their likelihood to take risky wildlife photos from individuals that express social or altruistic motivations?

The different groups for the first question were not statistically significantly different from each other when it came to risk perceptions ($F(5,405) = 1.044, p = .391, \eta^2 = .013$) or likelihood of taking risky photographs ($F(5,417) = 1.596, p = .160, \eta^2 = .019$). Question number three (two wasn't coded) asked participants what might help keep people a safe distance from wildlife. For this question, there were 15 first-order categories and six second-order themes. These themes were: communications, barriers and tangible consequences, education, creative changes, and other. Again the ANOVA showed no statistically significant difference among the six groups when it came to risk perceptions ($F(5, 495) = 1.016, p = .407, \eta^2 = .010$) or likelihood of taking risky photographs ($F(5, 506) = 1.211, p = .303, \eta^2 = .012$).

Another one-way ANOVA was conducted to see if there were differences between gender when it came to risk perceptions and likelihood of taking risky photographs. The gender groups were male, female, or other. There was a significant difference in risk perceptions ($F(2,564) = 11.454, p < .01, \eta^2 = .039$) but there was no difference in likelihood of taking risky photographs ($F(2,580) = 1.423, p = .242, \eta^2 = .005$). A Tukey post hoc test revealed that the

mean score for females ($M = 3.13$, $SD = .69$) was significantly different than the mean score for males ($M = 3.42$, $SD = .71$). Effect size was calculated using the means and standard deviations of each group. A moderate effect size was calculated, $d = .414$, $r = .203$. However, those that identified their gender as “other” did not significantly differ from those that identified as “male” and those that identified as “female.” Males indicated a higher level of wildlife risk perceptions than females in this study. Another analysis showed there was also a difference between gender when it came to interest in online identity management ($F(2,585) = 12.789$, $p < .01$, $\eta^2 = .042$). A Tukey post hoc test indicated that females ($M = 3.93$, $SD = .82$) were statistically more likely to have higher interest in online identity management when compared to males ($M = 3.58$, $SD = .88$). Again, those that identified as other were not statistically significantly different. A one-way ANOVA also showed differences between males and females when it comes to wildlife photography social norms ($F(2,569) = 10.723$, $p < .01$, $\eta^2 = .036$). A Tukey post hoc test indicated females ($M = 4.13$, $SD = .72$) are more likely to have a referent group that is more encouraging of taking and posting wildlife photography in online spaces when compared to males ($M = 3.83$, $SD = .82$). There was no difference for online social capital ($F(2,414) = 2.340$, $p = .098$, $\eta^2 = .011$) or wildlife risk social norms ($F(2,577) = 2.515$, $p = .082$, $\eta^2 = .009$). It seems females have lower risk perceptions, higher interest in online identity and high wildlife photography social norms when compared to the males in this study.

Further analysis was done in order to connect the quantitative and qualitative data by investigating the themes from question three with interest in online identity management ($F(5,510) = 2.039$, $p = .072$, $\eta^2 = .02$), online social capital ($F(5,364) = 1.178$, $p = .319$, $\eta^2 = .06$) and wildlife risk social norms ($F(5,505) = .319$, $p = .901$, $\eta^2 = .003$). No significant differences were found. Also investigated were themes from question one with online wildlife photography

social norms ($F(5,408) = .669, p = .647, \eta^2 = .008$), and wildlife risk social norms ($F(5,416) = .662, p = .653, \eta^2 = .008$). Again, no significant difference was found between the different themes identified. Grade and the likelihood of taking risky wildlife photographs ($F(3,573) = .387, p = .763, \eta^2 = .002$), and year in college and interest in online identity management were also taken into consideration. The only statistically significant difference was with year in college and interest in online identity management ($F(3,578) = 2.83, p = .038, \eta^2 = .014$). A Tukey post hoc test indicated a significant difference between sophomores ($M = 3.88, SD = .85$) and juniors ($M = 3.62, SD = .90$) in their interest in online identity management but no other variables were statistically significant. In other words, sophomores were statistically more likely to have higher interest in online identity management when compared to juniors.

The different qualitative themes do not seem to connect with the quantitative data. In other words, the reasons that participants stated for moving closer to wildlife for photography do not predict or correlate with participants' risk perceptions, interest in online identity, likelihood of taking risky photography, or other quantitative variables. Also, the ideas participants gave for how to keep people a safe distance did not correlate with the quantitative variables. Those that thought communication materials might help did not differ from those that suggested barriers and tangible consequences or from those that suggested education as a solution.

4.2.3.1 Summary

Excluding the responses that were “not applicable”, “signs,” “animal education,” and “bad experiences” were the most common responses for both groups. It seems most participants suggest more signage, more education about wildlife and nature, and using real life experiences as the best way to keep people a safe distance from wildlife. It is not clear where participants believe this education should come from or how it would be implemented but they do tend to

lean towards education as a solution. Signs were also common. Some sign suggestions were focused on informing people of the right distance or just warning signs about how dangerous wildlife can be. Finally, having a bad experience or witnessing other people have bad experiences with wildlife seems to be a popular suggestion as well. Participants think that being able to experience or see the consequences of getting close to wildlife might be the only way to get people to keep a safe distance. This indicates that personal experience might be a good approach to human-wildlife interaction prevention. It also indicates that this group of participants believes witnessing or understanding that these encounters happen might help increase risk awareness around getting close to wildlife. Perhaps a combination of these three themes such as signs and education materials that illustrate the consequences of getting too close would be a beneficial approach. Finally, the quantitative and qualitative data in the current study do not seem to correlate in any significant way. Some gender differences were indicated for wildlife risk perceptions, wildlife risk social norms, and online identity management.

CHAPTER FIVE: DISCUSSION

5.1 Summary

Both the quantitative data and the qualitative data can give some insights into risky wildlife photography. Research question one asked about motivating factors that influence people to take risky wildlife photographs. While this question was partially addressed through the quantitative data, the qualitative data also indicated that the following themes were all general reasons individual's in the current study might move closer to wildlife for photography: feeling of safety, social/altruism, accident/regret, and intrigue/risk. H1-H3 predicted relationships between some of the independent variables in the model. All three of these hypotheses were confirmed indicating weak relationships among these concepts. Wildlife photography social norms and online identity management were positively correlated. Perhaps those with social norms around online wildlife photography are more likely to engage in online identity management behaviors or it could be that those that already engage in online identity management behaviors have more contact with people that have high online wildlife photography social norms. Online social capital and online identity management were positively correlated. Those with high social capital also tend to have high interest in online identity management either as a way to maintain their social capital or as a result of their current high levels of social capital. This correlation indicates a relationship between our online activity and the benefits or connections we gain from that behavior further supporting other research that illustrates how online activities foster social capital and trust (Best & Krueger, 2006). Finally, wildlife risk social norms and wildlife risk perceptions were negatively correlated. In other

words, individuals with a referent group that value risky wildlife behaviors tend to have lower levels of wildlife risk perceptions.

H4-H7, RQ 2a and RQ 2b were analyzed using a regression analysis. This analysis indicated that wildlife risk social norms, wildlife risk perceptions, and park visits were the only significant predictors of the likelihood of taking risky wildlife photographs. The entire model accounted for 21.3% of the variance in the likelihood of taking risky wildlife photographs. Further, an exploratory analysis of the different types of social norms indicated that injunctive wildlife risk social norms were the only type of norms that significantly impacted likelihood of taking risky wildlife photographs. Wildlife risk perceptions predict risky wildlife photography indicating a correlation between risk and actual behaviors. Risk research seems to disagree on how to define risk and measure risk, but what is clear is that risk perceptions do impact the decision to perform risky behaviors (e.g. Lee & Bichard, 2006; Decker, et al., 2006). However, there are other factors that might also be impacting these risky decisions that are not accounted for in the current study. For instance, wildlife value orientation or personal moral norms (Teel & Manfredi, 2009; van Riper & Kyle, 2014).

Hypothesis eight was addressed using a regression analysis with interaction effect. This regression was conducted ignoring the other pieces of the model and should be taken with caution. It indicated that when wildlife risk perceptions and online identity management interact they no longer predict the likelihood of taking risky wildlife photographs. This interaction could potentially signal that those with high wildlife risk perceptions that would normally not take risky wildlife photographs might be more likely to do so if they also have high online identity management. Further research is needed to better understand this connection.

The third research question asked about the strategies that might help keep people a safe distance from wildlife. The qualitative data indicated that communication strategies, barriers or tangible strategies, education, and creative changes are the common themes participants in this study mentioned.

Further exploratory analysis indicated that wildlife risk perceptions parceled out by specific wildlife are all negatively correlated with the likelihood of taking wildlife photographs of that particular animal. In other words, wildlife risk perceptions for specific wildlife correlate directly with likelihood of taking a photograph of that particular animal. A mixed methods approach was also utilized in order to identify any connections between the quantitative and qualitative data. Both qualitative questions were analyzed for differences when it came to wildlife risk perceptions and the likelihood of taking risky wildlife photography. No significant differences were found. Participants' gender and grade were also investigated. The only significant differences found were for wildlife risk perceptions, online identity management, and wildlife photography social norms. Males in this study seem to have higher wildlife risk perceptions than females. Females have higher interest in online identity management and higher wildlife photography social norms. Previous research shows that females tend to be more likely to post on social media sites (Dominick, 1999). It is possible that females in this study were downplaying the risk perceptions they felt in order to justify answering questions about getting closer to wildlife for photographs to post on social media sites. Finally, sophomores are more likely than juniors to have high interest in online identity management. There were no significant differences between any other grades and online identity management.

5.2 Theoretical Implications

This study aimed to contribute a theoretical connection between online identity management and wildlife risk perceptions. The findings suggested no direct connection between interest in online identity management and the likelihood of taking risky wildlife photographs. However, there was some minimal evidence that online identity management buffers the effect of wildlife risk perceptions on the likelihood of taking risky wildlife photographs. In other words, this research adds to theory regarding how our online lives are impacting our offline behaviors. Evidence shows that who we are online is blurring with who we are offline (e.g. Clayson, 2016; Garbasevski, 2015; Hogan, 2010), and this study provides some initial empirical evidence that our online identity management, while not directly influencing offline behaviors, is having an effect. Perhaps, our online identities are just another factor to consider when analyzing offline risky behaviors. For instance, in order to mitigate risky behaviors such as risky wildlife photography, risk communication theory needs to not only investigate risk perceptions, threat from a risk, demographic variables, among other theoretical factors, but also our online interactions and online identity management techniques.

Risk communication theory is usually discussed in three phases: preparedness, response, and recovery (Sheppard, Janoske, & Liu, 2012). Within each of these areas of risk research are multiple theories. These theories help define the publics involved in risky situations, define how individuals process risk information, discuss ways to involve community in message dissemination, define risk perceptions, and provide risk response strategies (Sheppard, B., Janoske, M., & Liu, B., 2012). Social amplification of risk framework also guides risk research to consider social context as it pertains to risky situations (Sheppard et al., 2012). However, none of these theories directly considers online identity as a motivating factor for risky behavior. The

current study points to the importance of considering our online identities and online interactions in offline risky behaviors.

This research also adds to the risk perception literature by indicating a connection between wildlife risk social norms, wildlife risk perceptions, and the likelihood of taking risky wildlife photographs. The actionable risk communication model focuses on utilizing community members for risk preparedness and to increase risk perceptions (Sheppard et al., 2012). The current study indicates social norms or what our reference group does or deems important to do can impact our behaviors. It also suggests that increasing risk perceptions around wildlife might help mitigate risky wildlife photography providing further evidence for theoretical foundations of risk research such as the actionable risk communication model and the importance of community, social norms, and perceptions.

This study also provided evidence that wildlife risk social norms and online wildlife photography social norms impact risky wildlife photography both directly and indirectly. Previous research into social norms illustrates the importance of significant others on our behavioral decisions (Ardoin, et al., 2013; Boyd & Ellison, 2008; Shulman & Levine, 2012). This research further solidifies the impact that others have on behavior. While social norms and wildlife risk perceptions seemed to influence behavior, the qualitative data showed participants were more likely to get close to wildlife for a photo if the wildlife seemed non-threatening or there was a barrier of some kind between the wildlife and the participant. These individuals seemed to have high risk perceptions. However, the categorization of non-threatening wildlife species varied by participant. This finding indicates that types of wildlife, the context in which people view wildlife, and other factors are playing a role in decision making when it comes to risky wildlife photography. Recall the regression model only accounted for about 21% of the

variance in respondents' reported likelihood of taking risky wildlife photos, which further supports the notion of context and other factors that play a role in this behavior.

Finally, this research also contributes to the literature on online social norms. Because social media sites and technology are changing so rapidly, it is hard to keep up with the impacts this might be having on individuals. This research illustrates a connection between online social capital and interest in online identity management. Perhaps those with higher online social capital or more "friends" in online spaces are more likely to manage their online identities. It is equally as likely that those with higher interest in online identity tend to acquire more online social capital resources. Online wildlife photography social norms are also correlated with online identity management. It seems that social norms and social capital both play a role in online identity management. It is clear that who we are online and we are offline are one and the same. Therefore, understanding our online identities and what might be influencing decisions to interact and manage our online selves is becoming more important as it can impact our offline, every-day behaviors and sense of self. Few studies have investigated factors influencing online identity management and this study provides a starting point for this inquiry.

5.3 Practical Implications

This study showed social norms play a role directly and indirectly in people's likelihood of taking risky wildlife photographs. Previous research has indicated the importance of social norms in decision making, including the extensive use of the Theory of Planned Behavior for behavior change and message design (e.g. Berkowitz, 2005; Cialdini, 2003; Miller & Prentice, 2016; Zinn, et al., 1998). These norms seem to play a slight, but significant, role in individuals' decisions to move closer to wildlife in national parks in order to take photographs. It seems social norms around online wildlife photography, social norms around wildlife risk, and wildlife

risk perceptions are all potential motivating factors that communication practitioners and national parks' staff could utilize in order to create messaging designed to alleviate human-wildlife interactions in national parks. Park staff and communication practitioners might be better off using messaging around risk perceptions and wildlife risk social norms rather than online wildlife photography social norms to curb getting closer to wildlife for photos. For example, using messaging that indicates most people view getting close to wildlife for photography as dangerous might increase risk perceptions of park visitors which, in turn, would mitigate people moving closer to wild animals for photography.

The qualitative data provided additional support for this. The majority of participants stated real-life experiences of negative human-wildlife interactions and more education about wildlife would help to keep people a safe distance. Perhaps park staff and communication practitioners could heed some of this advice by using signage, videos, or interpersonal communication that focus on risks to humans and wildlife, education about wildlife, and to illustrate real-life examples of negative human-wildlife interactions. Previous literature in message design and human-wildlife interaction has suggested focusing on behaviors that people can do rather than telling them what not to do in these situations (Mckenzie-Mohr, & Smith, 1999). Perhaps illustrating the dangers getting close to wildlife poses for the animal itself, creating a sense of self-efficacy around keeping a safe distance and creating wildlife risk social norms to increase risk perceptions are all strategies park staff could implement in messaging and interpersonal conversations with park visitors. The qualitative data also illustrates varying ideas about what species of wildlife would be considered non-threatening. This finding further illustrates the importance of animal education. Educating park visitors about the types of wildlife and the types of risks posed could be an important strategy for park staff.

It is also worth noting what was missing in the qualitative data. Few participants mentioned risks to wildlife in getting too close; the majority only mentioned risk to themselves or other people. This either shows a lack of knowledge about risks to wildlife that could arise from getting too close to them and/or the relatively less importance they place on protecting wildlife. A means to increase risk perceptions could be to point out risks to wildlife posed by getting too close to them in supportive messaging, but this idea needs to be tested. Participants also indicated a lack of knowledge about legal consequences and what defines a safe distance. However, they did seem to understand that more education would be helpful in encouraging people to keep a safe distance.

Another area of interest was in gender differences. Previous research suggested females tend to have higher risk perceptions (McQueen, Vernon, Meissner, & Rakowski, 2008). In the current study, however, males had higher wildlife risk perceptions, while females had higher interest in online identity management and higher wildlife photography social norms. Perhaps, the females in this study are downplaying the risk perceptions of getting close to wildlife because their interest in online identity management and their social norms around wildlife photography are higher. In other words, in order to justify their decisions to take risky wildlife photography to post on social media sites potentially in order to manage their online identities, they downplay the risk involved. This finding also helps illustrate the importance of perception on risk evaluation and how other factors such as online identity and social norms might impact how individuals judge a risk. Perhaps communication practitioners and park staff can utilize the knowledge of risk perceptions by tapping into factors such as online identity management and online photography social norms as a way to find more creative avenues to increase awareness around the dangers of moving close to wild animals for photography.

Finally, the qualitative data provided some creative responses worth exploring. Participants in this study suggested renting out cameras, giving out wildlife photos, providing wildlife viewing areas, and using stuffed wildlife as ways to help alleviate people getting close to wildlife as well as further education on wildlife safety.

5.4 Limitations

This study provides some practical and theoretical implications but it also has some limitations. First, it was conducted with a convenience sample of college students limiting its generalizability to the larger population. However, this age group tends to be more likely to have online social accounts and participate in social media sites. Participants were asked a series of questions about whether they would move closer to wildlife to take photographs. However, they were not asked specifically about their actual online wildlife photography behavior. Asking participants about their actual behavior such as if they have taken and posted wildlife photographs might have added some further insights of actual behavior to this study.

This study was also conducted using an online survey. While online surveys have their benefits such as privacy for participants and easy distribution, they also have some drawbacks. The Internet is a dynamic space that changes often and participants might get distracted easily while taking the survey (Smyth & Pearson, 2011). Distraction issues with online surveys might cause unreliable responses. Survey methodology also limits detail and depth that comes with more qualitative methodologies such as interviews and focus groups. Markham and Baym (2009) point out that “all studies will be bounded, to some extent, by what the researcher can practically achieve” (p. 18). A survey design was used for the current study in order to gather a large sample of data in a convenient way. The conveniences and sample size bounds the study and limits other areas of inquiry. One of the most important aspects of research methodology is making

deliberate decisions and understanding why those are the choices being made. By adding open-ended questions some depth in this analysis was kept minimizing one of the limitations with survey design.

Another limitation of survey design and behavior research is issues with self-reported behaviors. The current study focuses on the complexity of human behaviors. This complexity also applies to the accuracy and ability to report on one's own risky behaviors. Previous research has shown that people may underreport risky behaviors because of the stigma or undesirability associated with such behavior (Norwood, Hughes, & Amico, 2017). According to King and Bruner (2000), "the pervasive tendency of individuals to present themselves in the most favorable manner relative to prevailing social norms and mores has threatened to compromise research findings in the social sciences for more than 50 years" (p. 80). This social desirability bias may have impacted and limited the current research. Social desirability bias tends to be more prevalent with risky behaviors (Norwood, Hughes, & Amico, 2017). Therefore, underreporting of risky wildlife photography is a possibility. Another bias that might limit the current research is nonresponse bias. Nonresponse bias depends on those recruited that chose not to participate in the survey that might somehow be different from those that did participate in the survey in a significant way (Fowler, 2014). One way to account for this is through sample size or response rate. Response rate for this survey was high. However, there might be some factor not accounted for that nonrespondents have that respondents did not.

The current study conducted correlation analysis to understand the associations between variables. This association cannot speculate on causation. For instance, this study indicates a correlation between online wildlife photography social norms and risky wildlife photography. However, it cannot say whether photography caused the social norms or the social norms caused

the offline photography behavior. Further, this study also used a regression analysis with interaction effect as part of the data analysis. The regression analyses conducted was done so by ignoring the other pieces of the original theoretical model proposed and should be taken with caution. A regression analysis estimates relationships among variables, but in a theoretical model, such as the current study, when you leave out potential theoretically known variables the model changes. While the current research has some limitations, as an initial study investigating a connection between online identity and risk perception, it provides valuable insights both theoretically and practically in the areas of risk communication, online identity, social norms, social capital, and message design. Future research is need to better understand the motivating factors for risky wildlife photography, but the current study starts to bridge the gap between online identity and offline risky photography.

5.5 Future Research

Limitations in this study point out a potential underreporting or social desirability bias of actual risky behaviors. Future research could utilize an observational methodology to study people's actual behaviors in both online and offline spaces. More research is also needed to accurately predict how each type of social norm (descriptive, injunctive, and subjective) impacts risky wildlife photography. Research and communication practitioners would benefit from a better analysis of the different types of social norms and how they impact, not only risky wildlife photography, but also other risky behavior choices. This research would help further understanding of different kinds of social norms and their impact on risky wildlife photography. It would also provide a more nuanced approach to understanding the impacts of norms on behavior.

Qualitative insights are often used to inform quantitative studies. This data could also be used to create another study to further investigate either the suggested ways to alleviate human-wildlife interactions in national parks by participants such as using “bad experiences” or real-life examples to increase risk perceptions or to further explore motivating factors for getting close to wildlife such as perceived non-threatening wildlife. Both the qualitative insights and the quantitative data found here could be used to better understand what kinds of questions to ask next that can guide research in the right direction to further understand what other variables impact risky wildlife photography and, potentially, other risky behaviors. For example, if an individual has high wildlife risk perceptions and high online identity management, perhaps they turn to other motivating factors to help them make a decision about performing a risky behavior. Future research could investigate these other factors such as wildlife value orientation, personal norms, and other beliefs and values about wildlife, nature, and photography and how that might be impacting people’s decisions to take risky photos (Teel & Manfredi, 2009; van Riper & Kyle, 2014). Another avenue to explore would be other factors influencing one’s interest in online identity management. This research indicates some correlation between online social capital and online identity management. It also indicates some correlation between online photography social norms and online identity. Perhaps there are other factors that lead to people’s interest in managing their online identities including online photography in general rather than specifically wildlife photography. There might be something about risky wildlife photography that does not necessarily correlate with online identity management, but general photography might.

Another avenue for future research is the use of this study as a basis for creating communication messaging campaigns by targeting the motivating factors and suggested messaging identified here such as social norms, risk perceptions, and animal education. Second,

research could begin to look at broader connections between online and offline behaviors such as online identity and overall risky decision making. Theory and past case studies illustrate other ways to motivate behavior change and further research is needed to create a more thorough and detailed model that identifies motivations for risky wildlife photography. It would also be interesting to look at the ways in which people prepare for trips to national parks, where they get their information, what motivates them to go to national parks, and if they have concerns about wildlife before they arrive at the parks. NPS launched their centennial campaign in order to attract a new and more diverse audience into the parks; knowing who the audience is would be an important step in creating messaging and educational materials that can have a great impact. Also, with technological advances and the speed at which technology changes, understanding how it impacts behaviors in parks might help predict future issues before they occur.

It also seems that social norms influence online identity management which could have an indirect effect on offline risky behaviors. This is an area that needs further exploration. More research is needed to investigate how our online and offline behaviors are potentially related. The quantitative and qualitative data here imply that there are other factors involved in risky wildlife photography. However, risk communication theory should include more research that investigates the notion of online identity and technology. Environmental communication theory could also benefit from looking more closely at our online behaviors and how technology has the potential to impact behaviors. Who we are online is blurring with our offline selves. Identity and how we define the self has major impacts for all social science research. This shift in identity can have major implications for health communication, environmental communication, risk communication, and human behavior change. While online identity management did not directly influence risky wildlife photography, it does seem to have a moderating or buffering effect,

which requires further investigation within risk communication, environmental communication, and message design research.

Finally, because this study explores connections among variables in order to further understand risky wildlife photography, it could be used as a bases for a second study that further tests this theoretical model using structural equation modeling (SEM). SEM could be the next step in understanding and proving the proposed theoretical model. However, some small adjustments would need to be made such as the connection between online identity management and risky wildlife photography because it is now known that relationship might not exist.

5.6 Conclusion

This research illustrates an initial connection between interest in online identity management and risk perceptions. More research is needed to fully understand the connection between our online and offline behaviors. With the pervasiveness of personal technology devices and the increased use of social media sites, it is important to understand how these social spaces are affecting offline behaviors, especially risky ones. The current research also provides some insights into motivating factors for risky wildlife photography including social norms and risk perceptions. It is clear that wildlife risk perceptions, wildlife risk social norms, and familiarity with national parks impact the likelihood of taking risky wildlife photographs. Perhaps social psychological factors are less of a predictor when compared to situational variables such as context of the behavior and risk perceptions in making decisions about photographing wildlife.

The current study also contributes further understanding into the types of messaging that might influence people's decisions to move closer to wildlife for photography. Social norms, illustrating real-life human-wildlife interactions, increasing risk perceptions, and providing more wildlife education might be avenues that park staff and communication practitioners can use in

order to keep both people and wildlife safe in national parks. Finally, this research also provides some insight into how social norms and social capital relate to online identity management. The social norms around online behaviors and the need for online social capital might be increasing the use of social media sites. Therefore, it is pertinent to understand why people use online social media sites and the impacts these types of technologies have on human behavior in both online and offline spaces.

REFERENCES

- Administration (2016, May 23). Park rangers urge selfie-crazed public to stay away from wildlife. *Park Rangers*. Retrieved from <http://www.parkrangeredu.org/2016/05/park-rangers-urge-selfie-crazed-public-to-stay-away-from-wildlife/>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Process*, 50, 179-211.
- Andrews, T. (2012). What is social constructionism? *Grounded Theory Review*, 11(1). Retrieved from <http://groundedtheoryreview.com/2012/06/01/what-is-social-constructionism/>
- Ardoin, N., Heimlich, J., Braus, J., & Merrick, C., Eds. (2013). *Influencing conservation action: What research says about environmental literacy, behavior and conservation results*. Retrieved from http://web4.audubon.org/educate/toolkit/pdf/Influencing%20Conservation%20Outcomes%20Module%202013_National%20Audubon%20Society.pdf
- Auh, J. (2017, July 14). Following several coyote attacks, wildlife expert says they are simply misunderstood. *News 5, Cleveland*. Retrieved from <http://www.news5cleveland.com/news/after-coyote-attacks-expert-says-the-animal-is-misunderstood>
- Bath, A. J., & Enck, J. W. (2003). Wildlife-human interactions in national parks in Canada and the USA. *Social Science Research Review*, 4(1), 1-32.
- BBC News (2016, February 19). Argentina beach dolphin selfies criticized. *BBC News*. Retrieved from <http://www.bbc.com/news/world-latin-america-35606354>

- Benzies, K. M., & Allen, M. N. (2001). Symbolic interactionism as a theoretical perspective for multiple method research. *Methodological Issues in Nursing Research*, 33(4), 541-547.
- Berkowitz, A. D. (2005). An overview of the social norms approach. Published in Lederman, L. C., & Stewart, L. P. (eds.) *Changing the Culture of College Drinking: A Socially Situated Health Communication Campaign*, Hampton Press: Cresskill, NJ. Retrieved from http://www.alanberkowitz.com/articles/social_norms_short.pdf
- Best, S. J., & Krueger, B. S. (2006). Online interactions and social capital: Distinguishing between new and existing ties. *Social Science Computer Review*, 24(4) 395-410. doi: 10.1177/0894439306286855.
- Bourdieu, P. (1986). The forms of capital. *J.G. Richardson (Ed.), Handbook of Theory and Research for the Sociology of Education* (pp. 241–258). Westport, CT: Greenwood Press.
- Boyd, d. m., & Ellison, N. B. (2008). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13, 210-230. doi: 10.1111/j.1083-6101.2007.00393.x
- Brake, D. R. (2014). *Sharing our lives online: Risk and exposure in social media*. New York, NY: Plagrove Macmillan.
- Braun, J. & Niederdeppe, J. (2012). Disruption and identity maintenance in risk information seeking and processing. *Communication Theory*, 22, 138-162.
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. Retrieved from <http://eprints.uwe.ac.uk/11735>

- Burgoon, J. K., Bonito, J. A., Ramirez, A. J. R., Dunbar, N. E., Kam, K., & Fischer, J. (2002). Testing the interactivity principle: Effects of mediation, propinquity, and verbal and nonverbal modalities in interpersonal interaction. *Journal of Communication*, 52, 657-677.
- Campbell, J. E., & Carlson, M. (2002). Panopticon.com: Online surveillance and the commodification of privacy. *Journal of Broadcasting & Electronic Media*, 46(4), 586.
- Cerra, A. & James, C. (2012). Identity Shift: Where identity meets technology in the networked-community age. Indianapolis, IN: John Wiley & Sons, Inc.
- Choi, J. (2006). Doing poststructural ethnography in the life history of dropouts in South Korea: Methodological ruminations of subjectivity, positionality, and reflexivity. *International Journal of Qualitative Studies in Education*, 19(4), 435-453
- Christiansen, C. H. (1999). Defining lives: Occupation as identity: As essay on competence, coherence, and the creation of meaning. Eleanor Clarke Slagle lecture. *American Journal of Occupational Therapy*, 53, 547-558.
- Cialdini, R. B., Kallgren, C. A., & Raymond, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. *Advances in Experimental Social Psychology*, 24, 201-234.
- Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, 12, 105-109/ doi: 10.1111/1467-8721.01242.
- Clayson, J. (Host). (2016, October 19). Why what Facebook knows about you could matter offline. *On Point*. Podcast retrieved from <http://www.wbur.org/onpoint/2016/10/19/facebook-ad-tracking-targeting>

- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Decker, D. J., Evensen, D. T. N., Siemer, W. F., Leong, K. M., Riley, S. J., Wild, M. A., Castle, K. T., & Higgins, C. L. (2010). Understanding risk perceptions to enhance communication about human-wildlife interactions and the impacts of Zoonotic Disease. *ILAR Journal*, 51(3), 255-261.
- De Vries, D. A., & Peter, J. (2014). Women on display: The effect of portraying the self online on women's self-objectification. *Computers in Human Behavior*, 29, 1483-1489. doi: 10.1016/j.chb.2013.01.015
- Dickman, A. J. (2010). Complexities of conflict: The importance of considering social factors for effectively resolving human-wildlife conflict. *Animal Conservation*, 13, 458-466. Doi: 10.1111/j.1469-1795.2010.00368.x
- Dominick, J. (1999). Who do you think you are? Personal home pages and self presentation on the World Wide Web. *Journalism and Mass Communication Quarterly*, 76, 646-658.
- Douglas, M. (1992). *Risk and Blame: Essays in Cultural Theory*. Routledge: New York, NY.
- Ellison, N. B., Steinfield, C., Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12, 1143-1168. Doi: 10.1111/j.1083-6101.2007.00367.x
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes (2nd Ed.)*. Chicago: The University of Chicago Press.
- feedly (2016, April 5). Trend report: The rise of live video streaming. *Feedly Academy*. Retrieved from <https://blog.feedly.com/trend-report-the-rise-of-live-video-streaming/>

- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80-92.
- Field, A. (2009). *Discovering statistics using SPSS, third edition*. Thousand Oaks, CA: SAGE Publications Inc.
- Frunzaru, V., & Garbasevschi, D. (2016). Students' online identity management. *Journal of Media Research*, 9(1), 3-13.
- Garbasevschi, D. (2015). Online identity in the case of the share phenomenon. A glimpse into the on lives of Romanian millennials. *Journal of Media Research*, 8(2), 14-26.
- Golding, D. (1992). A social and programmatic history of risk research. In S. Krimsky, & D. Golding (Eds.), *Social Theories of Risk*. Praeger Publishers: Westport, CT.
- Goodboy, A. K., & Kline, R. B. (2017). Statistical and practical concerns with published communication research featuring structural equation modeling, *Communication Research Reports*, 34(1), 68-77. doi: 10.1080/08824096.2016.1214121
- Goffman, E. (1959). *The presentation of self in everyday life*. New York: Anchor Books.
- Geertz, C. (1973). *Toward an Interpretive Theory of Culture*. NY: Basic Books.
- Glesne, C. (2011). *Becoming Qualitative Researchers: An Introduction (4th Ed.)*. NY: Pearson.
- Gore, M. L., & Knuth, B. A. (2009). Mass media effect on the operating environment of a wildlife-related risk-communication campaign. *The Journal of Wildlife Management*, 73(8), 1407-1413. doi: 10.2193/2008-343
- Gore, M. L., Knuth, B. A., Curtis, P. D., & Shanahan, J. E. (2007). Factors influencing risk perception associated with human-black bear conflict. *Human Dimensions of Wildlife*, 12, 133-136. doi: 10.1080/10871200701195985.

- Griffin, R. J., Dunwoody, S., & Neuwirth, K. (1999). Proposed model of the relationship of risk information seeking and processing to the development of preventive behaviors. *Environmental Research Section A*, 80, S230-S245.
- Gross, L. (2005). The past and the future of gay, lesbian, bisexual, and transgender studies. *Journal of Communication*, 55, 508-528.
- Gunuc, S., & Kuzu, A. (2015). Confirmation of campus-class-technology model in student engagement: A path analysis. *Computers in Human Behavior*, 48, 114-125. doi: 10.1016/j.chb.2015.01.041.
- Hanson, H. (2016, March 8). Woman roughly drags swan out of water by the wing for selfie. *The Huffington Post*. Retrieved from http://www.huffingtonpost.com/entry/swan-selfie-bulgaria_us_56df1bbee4b0ffe6f8eb1134
- Haythornthwaite, C. (2002). Grieving for a lost network: Collective action in a wired suburb. *The Information Society*, 19(5), 417-428.
- Hess, A. (2015). The selfie assemblage. *International Journal of Communication*, 9, 1629-1646.
- Hew, J., Badaruddin, M., & Moorthy, K. (2017). Crafting a smartphone repurchase decision making process: Do brand attachment and gender matter? *Telematics & Informatics*, 34(4), 34-56. doi: 10.1016/j.tele.2016.12.009.
- Hjorth, L., & Hendry, N. (2015). A snapshot of social media: Camera phone practices. *Social Media + Society*, 1-3. doi: 10.1177/2056305115580478.
- Ho, S. S., Liao, Y., Rosenthal, S. (2014). Applying the theory of planned behavior and media dependency theory: Predictors of public pro-environmental behavioral intentions in Singapore. *Environmental Communication*, 9(1), 77-99. doi: 10.1080/17524032.2014.932819

- Ho, M., Shaw, D., Lin, S., Chiu, Y. (2008). How do disaster characteristics influence risk perception? *Risk Analysis*, 28(3), 635-643.
- Hu, L., & Bentler, P. M. (1995). *Evaluating model fit. In Structural equation modeling: Concepts, issues, and applications. R. H. Hoyle (ed.). SAGE Publications Inc.: Thousand Oaks, CA.*
- Hussain, S. M. A. (2015). Presentation of self among social media users in Assam: Appropriating Goffman to Facebook users' engagement with online communities. *Global Media Journal – Indian Edition*, 6(1-2), 1-14.
- Ibrahim, A. M. (2012). Thematic analysis: A critical review of its process and evaluation. *West East Journal of Social Sciences*, 1(1), 39-47.
- Ibrahim, Y. (2015). Self-representation and the disaster event: Self-imaging, morality, and immorality. *Journal of Media Practice*, 16(3), 211-227.
- IRMA (2015). Annual visitation summary report for 2015. *National Park Services*. Retrieved from [https://irma.nps.gov/Stats/SSRSReports/National%20Reports/Annual%20Visitation%20Summary%20Report%20\(1979%20-%20Last%20Calendar%20Year](https://irma.nps.gov/Stats/SSRSReports/National%20Reports/Annual%20Visitation%20Summary%20Report%20(1979%20-%20Last%20Calendar%20Year)
- Iqani, M., & Schroeder, J. E. (2016). #selfie: Digital self-portraits as commodity form and consumption practice. *Consumption Markets & Culture*, 19(5), 405-415.
- Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly*, 24, 602-611.
- Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review*, 31(2), 386-408.

- Johnson, D. R., & Swearingen, T. C. (1992). The effectiveness of selected trailside sign texts in deterring off-trail hiking at paradise meadow, Mount Rainier National Park. Information Systems Division, National Agricultural Library.
- Kadam, P., & Bhalerao, S. (2010). Sample size calculation. *International Journal of Ayurveda Research*, 1(1), 55-57. doi: 10.4103/0974-7788.59946.
- Kahan, D. M. (2012). Cultural cognition as a conception of the cultural theory of risk. In S. Roeser, R. Hillerbrand, P. Sandin, & M. Peterson (Eds.) *Handbook of Risk Theory: Epistemology, decision theory, ethics, and social implications of risk*. Spring Publishing. Retrieved from <http://ssrn.com/abstract+1123807>
- Kaufman, M. (2017, July 11). Why people think approaching a giant wild animal makes sense. *Inverse*. Retrieved from <https://www.inverse.com/article/32863-why-people-approach-large-animals>
- Kelley, K., Clark, B., Brown, V., & Sitzia, J. (2003). Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care*, 15(3), 261-266.
- Kennedy, H. (2006). Beyond anonymity, or future directions for internet identity research. *New Media & Society*, 8(6), 859-876. doi: 10.1177/1461444806069641.
- King, M. F., & Bruner, G. C. (2000). Social desirability bias: A neglected aspect of validity testing. *Psychology & Marketing*, 17(2), 79-103.
- Klein, K. A., & Boster, F. J. (2006). Subjective, descriptive, and injunctive norms: Three separate constructs. *Conference Papers – International Communication Association*, 1-36.
- Koliska, M., & Roberts, J. (2015). Selfies: Witnessing and participatory journalism with a point of view. *International Journal of Communication*, 9, 1672-1685.

- Koshmrl, M. (2017, June 29). People, critters clash in parks. *Jackson Hole Daily*. Retrieved from http://www.jhnewsandguide.com/news/environmental/people-critters-clash-in-parks/article_fddb1b0-1fda-5012-8c59-13d842471c84.html
- LaRose, R., & Eastin, M. S. (2004). A social cognitive theory of Internet uses & gratifications: Toward a new model of media attendance. *Journal of Broadcasting & Electronic Media*, 48, 358-377.
- Lee, M. J., & Bichard, S. L. (2006). Effective message design targeting college students for the prevention of binge-drinking: Basing design on rebellious risk-taking tendency. *Health Communication*, 20(3), 299-308.
- Lefever, S., Dal, M., & Matthiasdottir, A. (2007). Online data collection in academic research: Advantages and limitations. *British Journal of Educational Technology*, 38(4), 574-582. doi: 10.1111/j.1467-8535.2006.00638.x
- Lemus, D., Seibold, D., Flanagan, A., Metzger, M. (2004). Argument and decisions making in computer-mediated groups. *Journal of Communication*, 54, 302-320.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28–51.
- LinkedIn (n.d.). The student job hunting handbook, Part 1. Retrieved from https://students.linkedin.com/content/dam/students/global/en_US/site/img/StudentPublishMicroSite/pdfs/LNK_MM_JobSeeker_eBook_StudentEdition_Sec1_FINAL.pdf
- Lo, I. S., McKercher, B., Lo, A., Cheung, C., & Law, R. (2011). Tourism and online photography. *Tourism Management*, 32, 725-731. doi: 10.1016/j.tourman.2010.06.001.
- Lobinger, K., & Brantner, C. (2015). In the eye of the beholder: Subjective views on the authenticity of selfies. *International Journal of Communication*, 9, 1848-1860.

- Malchik, A. (2017, April 24). Grizzly bears have a human problem. *The Atlantic*. Retrieved from <https://www.theatlantic.com/science/archive/2017/04/grizzly-bears-have-a-human-problem/523653/>
- Markham, A. N., & Baym, N. K. (2009). *Internet Inquire: Conversations About Methods*. Thousand Oaks, CA: Sage Publications.
- Matsaganis, M. D., & Wilkin, H. A. (2015). Communicative social capital and collective efficacy as determinants of access to health-enhancing resources in residential communities. *Journal of Health Communication*, 20, 377-386. doi: 10.1080/10810730.2014.927037.
- Mckenzie-Mohr, D., & Smith, W. (1999). *Fostering Sustainable Behavior: An Introduction to Community-based Social Marketing*. Gabriola Island B.C., Canada: New Society Publishers.
- McGlone, M. S., & Batchelor, J. (2003). Looking out for number one: Euphemism and face. *Journal of Communication*, 53, 251-264.
- McPhedran, T. (2017, July 2). Parks Canada warning tourists to stay back from wildlife. *CTV News*. Retrieved from <http://www.ctvnews.ca/canada/parks-canada-warning-tourists-to-stay-back-from-wildlife-1.3486231>
- McQueen, A., Vernon, S. W., Meissner, H. I., & Rakowski, W. (2008). Risk perceptions and worry about cancer: Does gender make a difference? *Journal of Health Communication*, 13, 56-79. doi: 10.1080/10810730701807076.
- Medvedeva, Y. S. (2015). Business as usual? The cultural, economic, and social capital of magazines in a Russian city. *Journal of Magazine and New Media Research*, 16(1), 1-22.

- Mele, C. (2016, May 19). When humans, fueled by the selfie culture, imperil wildlife. *The New York Times*. Retrieved from http://www.nytimes.com/2016/05/20/us/when-humans-fueled-by-the-selfie-culture-imperil-wildlife.html?_r=0
- Miller, M. E. (2015, July 23). Bison selfies are a bad idea: Tourist gored in Yellowstone as another photo goes awry. *Washington Post*. Retrieved from <https://www.washingtonpost.com/news/morning-mix/wp/2015/07/23/bison-selfies-are-a-bad-idea-tourist-gored-in-yellowstone-as-another-photo-goes-awry/>
- Miller, D. T., & Prentice, D. A. (2016). Changing norms to change behavior. *Annual Review of Psychology*, 67, 339-361.
- Ming En, S. (2017, February 18). The big read: As animal encounters hit the headlines, a divide opens up. *Today, Singapore*. Retrieved from <http://www.todayonline.com/singapore/big-read-animal-encounters-hit-headlines-divide-opens-0>
- Mora, M. (2016, February 22). Peacocks die from shock after being picked up for photos, feathers plucked. *Digital Trends*. Retrieved from <http://www.digitaltrends.com/photography/peacocks-die-selfie-china-zoo/>
- Mullen, J. (2015, July 23). Bison attacks woman who was trying to take selfie with it in Yellowstone Park. *CNN*. Retrieved from <http://www.cnn.com/2015/07/22/travel/yellowstone-woman-bison-attack-selfie/>
- Mumby, D. K. (1989). Ideology and the social construction of meaning: A communication perspective. *Communication Quarterly*, 37(4), 291-304.
- Nagesh, A. (2016, February 22). Guys pull struggling shark out of ocean to pose for photographs. *Metro*. Retrieved from <http://metro.co.uk/2016/02/22/guys-pull-struggling-shark-out-of-ocean-to-pose-for-photographs-5710642/>

- Nan, X. (2012). Communicating to young adults about HPV vaccination: Consideration of message framing, motivation, and gender. *Health Communication*, 27, 10-18. doi: 10.1080/10410236.2011.567447.
- Nass, C. (2010). *The man who lied to his laptop: What we can learn about ourselves from our machines*. New York, NY: Penguin Group.
- Naylor, G. (1988). *Mama Day*. NY: Random House, Inc.
- National Cancer Institute & National Institutes of Health (2005). *Theory at a glance: A guide to health promotion practice*, 2nd ed. Retrieved from <http://www.sneb.org/2014/Theory%20at%20a%20Glance.pdf>
- Nikolova, H., & Lamberton, C. (2016). Men and the middle: Gender differences in dyadic compromise effects. *Journal of Consumer Research*, 43, 355-371. doi: 10.1093/jcr/ucw035.
- Norris, P. (2002). The bridging and bonding role of online communities. *Press/Politics*, 7(3), 3-13.
- Olson, J. (2016, January 27). America's national parks: Record number of visitors in 2015. *National Park Service Press Release*. Retrieved from <https://www.nps.gov/aboutus/news/release.htm?id=1775>
- Owen, E., & Schellenbaum, A. (n.d.) We're begging you: Stop taking selfies with wild animals. *Travel & Leisure*. Retrieved from <http://www.travelandleisure.com/articles/selfies-killing-animals>
- Padilla, A., & Vigil, T. (2017, July 9). Crews hunting bear that attacked sleeping camper in Boulder County. *Fox 31, Denver*. Retrieved from <http://kdvr.com/2017/07/09/crews-hunting-bear-that-attacked-sleeping-camper-in-boulder-county/>

- Park, J., & Ha, S. (2014). Understanding consumer recycling behavior: Combining the theory of planned behavior and the norm activation model. *Family and Consumer Sciences Research Journal*, 42(3), 278-291.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Payne, J. W. (1975). Relation of perceived risk to preferences among gamblers. *Journal of Experimental Psychology: Human Perception and Performance*, 1, 86-94.
- Pearce, J., & Moscardo, G. (2015). Social representations of tourist selfies: New challenges for sustainable tourism. *Building Excellence in Sustainable Tourism Education Network*, XV, 59-73.
- Pearson, E. (2009). All the world wide web's a stage: The performance of identity in online social networks. *Journal on the Internet*, 14(3). Retrieved from <http://journals.uic.edu/ojs/index.php/fm/article/view/2162/2127>
- Pew Research Center (2017, January 17). Social media fact sheet. Retrieved from <http://www.pewinternet.org/fact-sheet/social-media/>
- Popescu Ljungholm, D. (2016). Organizational social capital and performance management. *Linguistic and Philosophical Investigations*, 15, 108-114.
- Purnell, D., & Jenkins, J. J. (2013). Breaking bread, creating community: Food's ability to increase communal ties and relationships. *The Florida Communication Journal*, 16, 73-84.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.

- Rabinow, P., & Sullivan, W. M. (1979). The interpretive turn: Emergence of an approach. In P. Rabinow & W. Sullivan (Eds.), *Interpretive Social Science* (pp. 1-21). Los Angeles: University of California Press.
- Ranosa, T. (2015, September 20). Tourists disturb nesting sea turtles to take selfies on Costa Rica beach. *Tech Times*. Retrieved from <http://www.techtimes.com/articles/86367/20150920/tourists-disturb-nesting-sea-turtles-to-take-selfies-on-costa-rica-beach.htm>
- Rayner, S. (1992). Cultural theory and risk analysis. In S. Krimsky, & D. Golding (Eds.), *Social Theories of Risk*. Praeger Publishers: Westport, CT.
- Renn, O. (1998). Three decades of risk research: Accomplishments and new challenges. *Journal of Risk Research*, 1(1), 49-71.
- Renner, B., & Schwarzer, R. (2005). The motivation to eat a healthy diet: How intenders and nonintenders differ in terms of risk perception, outcome expectancies, self-efficacy, and nutrition behavior. *Social Psychological Bulletin*, 36(1), 7-15.
- Sandman, P. M. (1993). Responding to community outrage: Strategies for effective risk communication. *American Industrial Hygiene Association*. Retrieved from <http://psandman.com/media/RespondingtoCommunityOutrage.pdf>
- Savin-Baden, M., & Howell Major, C. (2013). *Qualitative research: The essential guide to theory and practice*. NY: Routledge.
- Seidman, B. (2015, July 27). “Rattlesnake selfie” results in a \$153K medical bill. *CBS News*. Retrieved from <http://www.cbsnews.com/news/rattlesnake-selfie-results-in-a-153k-medical-bill/>

- Senft, T. M., & Baym, N. K. (2015). What does the selfie say? Investigating a global phenomenon. *International Journal of Communication*, 9, 1588-1606.
- Sheppard, B., Janoske, M., & Liu, B. (2012). *Understanding Risk Communication Theory: A Guide for Emergency Managers and Communicators*. Retrieved from <http://www.start.umd.edu/sites/default/files/files/publications/UnderstandingRiskCommunicationTheory.pdf>
- Shotter, J. (1993). *Cultural politics of everyday life*. Toronto: University of Toronto Press.
- Shulman, H. C., & Levine, T. R. (2012). Exploring social norms as a group-level phenomenon: Do political participation norms exist and influence political participation on college campuses? *Journal of Communication*, 62, 532-552. doi: 10.1111/j.1460-2466.2012.01642.x
- Sinclair, J., Mazzotti, F., & Graham, J. (2003). Motives to seek threatened and endangered species information for land-use decisions. *Science Communication*, 25(1), 39-55.
- Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the determinants of risk behavior. *Academy of Management Review*, 17, 9-38.
- Slater, D. (2002). Social relationships and identity online and offline. In L. Lievrouw, and S. Livingstone (Eds.), *Handbook of New Media: Social shaping and consequences of icts*. Sage Publications, London, UK. pp. 533-546.
- Smyth, J. D., & Pearson, J. E. (2011). Internet survey methods: A review of strengths, weaknesses, and innovations. *Social and behavioral research and the Internet. Advances in applied methods and research strategies*. European Association of Methodology. New York: Taylor and Francis Group, 11-43.

- Sonenshein, S., DeCelles, K. A., & Dutton, J. E. (2014). It's not easy being green: The role of self-evaluations in explaining support of environmental issues. *Academy of Management Journal*, 57(1) 7-37. doi: 10.5465/amj.2010.0445.
- Stern, S. R. (2004). Expressions of identity online: Prominent features and gender differences in adolescents World Wide Web home pages. *Journal of Broadcasting & Electronic Media*, 48, 218-243.
- Strauss, A. L. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.
- Stryker, S. (2008). From Mead to a structural symbolic interactionism and beyond. *Annual Review Sociology*, 34, 15-31. doi: 10.1146/annurev.soc.34.040507.134649
- Souza, F. (2015). Dawn of the selfie era: The whos, wheres, and hows of selfies on Instagram. Proceedings from COSN '15: *Conference on Social Networks*. Doi: 10.1145/2817946.2817948.
- Taylor, C. (1979). Interpretation and the sciences of man. In P. Rabinow & W. Sullivan (Eds.), *Interpretive social science*. Los Angeles: University of California Press.
- Teel, T. L., & Manfredo, M. J. (2009). Understanding the diversity of public interests in wildlife conservation. *Conservation Biology*, 24(1), 128-139. doi: 10.1111/j.1523-1739.2009.01374.x.
- Thompson, M. (1980). An outline of the cultural theory of risk. *International Institute for Applied Systems Analysis*, Working paper. Retrieved at <http://pure.iiasa.ac.at/1292/1/WP-80-177.pdf>

- Trumbo, C. W., Peek, L., Meyer, M. A., Marlatt, H. L., Gruntfest, E., McNoldy, B. D., & Schubert, W. H. (2016). A cognitive-affective scale for hurricane risk perception. *Society for Risk Analysis*, 36(12), 2233-2246. doi: 10.1111/risa.12575
- Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. New York, NY: Basic Books.
- Turner, J. W., Grube, J. A., & Meyers, J. (2001). Developing an optimal match within online communities: An exploration of CMC support communities and traditional support. *Journal of Communication*, 51, 231-251.
- Van Dijck, J. (2008). Digital photography: Communication, identity, memory. *Visual Communication*, 7(1), 57-76.
- Van Dijck, J. (2013). 'You have one identity': performing the self on Facebook and LinkedIn. *Media, Culture, & Society*, 35(2), 199-215.
- van Riper, C. J., & Kyle, G. T. (2014). Understanding the internal processes of behavioral engagement in a national park: A latent variable path analysis of the value-belief-norm theory. *Journal of Environmental Psychology*, 38, 288-297.
- Vasalou, A., & Johnson, A. N. (2009). Me, myself, and I: The role of interactional context on self-presentation through avatars. *Computers in Human Behavior*, 25, 510-520. doi: 10.1016/j.chb.2008.11.007
- Vaske, J. J., Timmons, N. R., Beaman, J., & Petchenik, J. (2004). Chronic wasting disease in Wisconsin: Hunter behavior, perceived risk, and agency trust. *Human Dimensions of Wildlife*, 9, 193-209.
- Villi, M. (2015). "Hey, I'm here right now": Camera phone photographs and mediated presence. *Photographies*, 8(1), 3-22. doi: 10.1080/17540763.2014.968937.

- Wang, T. (2017, September). The human insights missing from big data. TED Talk. Retrieved from
https://www.ted.com/talks/tricia_wang_the_human_insights_missing_from_big_data#t-956627
- Weber, E. U., Eblais, A., & Betz, N. Y. (2002). A domain-specific risk-attitude scale: Measuring risk perceptions and risk behavior. *Journal of Behavioral Decision Making*, 15, 263-290.
- Weber, E. U., & Hsee, C. (1998). Cross-cultural differences in risk perception, but cross-cultural similarities in attitudes towards perceived risk. *Management Science*, 44(9), 1205-1217.
- Wieczorek Hudenko, H., & Decker, D. J. (2013) Perspectives on human dimensions of wildlife habituation. *Report from a workshop conducted at the human dimensions of fish and wildlife management conference, Estes Park, CO, October 1, 2008*. Natural Resource Report: NPS/BRMD/NRR – 2013/627.
- Williams, D. (2006a). Virtual cultivation: Online worlds, offline perceptions. *Journal of Communication*, 56, 69-87.
- Williams, D. (2006b). On and off the ‘Net: Scales for social capital in an online era. *Journal of Computer-Mediated Communication*, 11, 593-628. doi: 10.1111/j.1083-6101.2006.00029.x
- Witzling, L., Shaw, B., Amato, M. S. (2015). Incorporating information exposure into a theory of planned behavior model to enrich understanding of proenvironmental behavior. *Science Communication*, 53(5), 551-574. doi: 10.1177/1075547015593085
- Wolcott, H. F. (1994). *Transforming qualitative data: Description, analysis, and interpretation*. Thousand Oaks, CA: Sage.

- Wright, K. B. (2005). Researching internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Computer-Mediated Communication*, 10(3). doi: 10.1111/j.1083-6101.2005.tb00259.x
- Yee, N., & Bailenson, J. N. (2009). The difference between being and seeing: The relative contribution of self-perception and priming to behavioral changes via digital self-representation. *Media Psychology*, 12, 195-209. doi: 10.1080/15213260902849943.
- Zhang, M. (2015, June 3). Man attacked by bison after taking up-close photo with his iPad. *PetaPixel*. Retrieved from <http://petapixel.com/2015/06/03/man-attacked-by-bison-after-taking-up-close-photo-with-his-ipad/>
- Zinn, H. C., Manfredo, M. J., Vaske, J. J. & Wittmann, K. (2008). Using normative beliefs to determine the acceptability of wildlife management actions. *Society and Natural Resources*, 11(7), 649-662). doi: 10.1080/089441929809381109.

APPENDIX A: PARTICIPANT EMAIL INVITATIONS

Recruitment email to students:

Dear [STUDENT NAME],

I am reaching out to you to ask for your help with a survey for my dissertation research. You have been chosen to complete a short questionnaire about your experiences with wildlife in national parks and about your use of social media.

You will be rewarded with [#] extra credit points in your JTC 300 class for completing the survey. At the end of the survey, it will take you to a separate link that is not connected to the survey response to fill out your name and email. Your name will not be associated with your survey question response but used only for your extra credit points.

The survey will only take 10-12 minutes to complete. To begin the survey, please click this link:

This survey is confidential, and your participation is voluntary. If you have any questions, comments, or concerns, please contact me by replying to this message or calling 269.719.6250.

I sincerely appreciate your help with the survey.

Thank you,
Caitlin Evans
Caitlin.evans@colostate.edu

First reminder email to students:

Dear [STUDENT NAME],

I recently reached out to you asking for your participation in an online survey about your experiences with wildlife in national parks and use of social media.

I hope you'll participate in this 10-12 minute survey at your earliest convenience. Your responses and feedback are very valuable to me. The survey will close on May 8.

You will be rewarded with [#] extra credit points in JTC 300 for completing the survey. To access the survey, please click on this link:

If you have any questions, comments, or concerns, please contact me by replying to this message or calling 269.719.6250.

Thank you,
Caitlin Evans

Caitlin.evans@colostate.edu

Second and final email reminder for students:

Dear [STUDENT NAME],

I sent an email invitation last week asking for your participation in a survey about wildlife and social media.

While many people have already responded, my records indicate that you have not yet completed this survey. The survey is an opportunity to receive [#] extra credit points for your JTC 300 class. The survey will only be available until Monday, May 8th at noon, MST. Your response would be very valuable to me.

The survey is confidential and should only take about 10-12 minutes of your time. To access the survey, please click this link:

If you have elected to complete the alternative extra credit assignment because you do not wish to participate in this survey, remember that it is due to your instructor on or before May 8.

If you have any questions, comments, or concerns, please contact me by replying to this message or calling 269.719.6250.

Thank you,

Caitlin Evans

Caitlin.evans@colostate.edu

APPENDIX B: SURVEY, VERSION 1

Online Identity and Wildlife Risk Perception Survey

Page 1: Consent form

You are invited to participate in a brief survey about your experiences with wildlife in national parks and your usage of online social media sites. You will be asked questions about the time you spend in online social spaces and about your experiences in national parks. This survey will take no more than 10-12 minutes to complete. You will receive extra credit in your JTC 300 course as a thank you for your thoughtful responses.

Your responses to the survey questions will be anonymous. Your name will be collected separately from your survey data only so we can ensure you receive the extra credit points. Your participation in this study is completely voluntary. There is no penalty for not participating. You have the right to withdraw from the study at any time without consequences, and you can skip any question that you would prefer not to answer.

Questions about the study? Please contact: Caitlin Evans, Public Communication & Technology PhD student, Caitlin.evans@colostate.edu

Questions about your rights as a research participant in the study? Please contact: Colorado State University Research Integrity & Compliance Review office (RICRO), RICRO_IRB@mail.colostate.edu; 970.491.1553

I have read the procedure above and agree to participate in the survey.

I have read the procedure above and do NOT volunteer to participate in the survey. (Clicking this option will automatically end the survey.)

Page 2:

When it comes to online social spaces, like social networking sites, please rate the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. On social media sites (e.g., Facebook, Instagram, Twitter) it is very important for me that others see me the way I want them to.
2. Through everything I post online, I want to send a certain message about myself.
3. I am aware of the impression I make on online social media.
4. In social media, I mostly post content that puts me in a good light.

Page 3:

Answer the following questions on a scale of 1 (strongly disagree) to 5 (strongly agree) in terms of the people you interact with online.

1. There are several people online I trust to help solve my problems.
2. There is someone online I can turn to for advice about making very important decisions.
3. There is no one online that I feel comfortable talking to about intimate personal problems (reversed).
4. When I feel lonely, there are several people online I can talk to.
5. If I needed an emergency loan of \$500, I know someone online I can turn to.
6. The people I interact with online would put their reputation on the line for me.
7. The people I interact with online would be good job references for me.
8. The people I interact with online would share their last dollar with me.
9. I do not know people online well enough to get them to do anything important (reversed).
10. The people I interact with online would help me fight an injustice.

Page 4:

Answer the following questions on a scale of 1 (strongly disagree) to 5 (strongly agree) in terms of the people you interact with online.

1. Interacting with people online makes me interested in things that happen outside of my town.
2. Interacting with people online makes me want to try new things.
3. Interacting with people online makes me interested in what people unlike me are thinking.
4. Talking with people online makes me curious about other places in the world.
5. Interacting with people online makes me feel like part of a larger community.
6. Interacting with people online makes me feel connected to the bigger picture.
7. Interacting with people online reminds me that everyone in the world is connected.
8. I am willing to spend time to support general online community activities.
9. Interacting with people online gives me new people to talk to.
10. Online, I come in contact with new people all the time.

Page 5:

Answer the following questions on a scale of 1 (strongly disagree) to 5 (strongly agree) in terms of the people you interact with online.

1. Using online social media sites, I'd be able to find out about events in another town from an acquaintance living there.
2. If I needed to, I could ask an acquaintance to do a small favor for me via online social media sites.
3. I would be able to stay with an acquaintance if traveling to a different city via online social media sites.
4. I would be able to find information about a job or internship from an online social acquaintance.
5. It would be easy to find people online that I have lost touch with offline.

Page 6:

Name three people whose opinions on national parks, wildlife, or nature based activities matter to you.

[SPACE TO TYPE IN RESPONSE]

Based on the three people you named previously, please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. I care enough about this person's opinion that I want to do what he or she wants me to do when it comes to getting close to or approaching wildlife in national parks.
2. I care enough about this person's opinion that I want to do what he or she wants me to do when it comes to photography of wildlife in national parks.

Page 7:

Please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. Think of all undergraduate students at your university, do you believe the majority of them would get within 25 yards of wildlife in a national park?
2. Think of all undergraduate students at your university, do you believe the majority of them would get within 25 yards of wildlife to take a photograph?
3. If my friends get within 25 yards of wildlife in a national park, I would also get close to the wildlife.
4. If my friends get within 25 yards of wildlife to take a photograph, I would also get close to wildlife to take a photograph.

Page 8:

Name three people whose opinions on online social networks like Facebook, Instagram, and Twitter matter to you.

[SPACE TO TYPE IN RESPONSE]

Based on the three people you named previously, please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. I care enough about this person's opinion that I want to do what he or she wants me to do when it comes to photography and other posts on social networking sites.
2. I care enough about this person's opinion that I want to do what he or she wants me to do when it comes to feedback, comments, and likes on social media sites.

Page 9:

Please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. Think of all undergraduate students at your university, do you believe the majority of them would post photographs of wildlife they saw in a national park?

2. Think of all undergraduate students at your university, do you believe the majority of them would like, comment or give other feedback for wildlife photography in social media sites?
3. If my friends post photographs of wildlife in national parks, I would also post photos of wildlife I see in national parks.
4. If my friends comment, like or give feedback on wildlife photos in social networking sites, I would also give comments, likes or other feedback on similar photos.

Page 10:

Please rate the following on a scale of 1 (not at all risky) to 5 (extremely risky). For reference, 100 yards is the length of a football field and 25 yards is the length of two tour buses.

1. How risky do you believe it is to visit a national park?
2. How risky do you believe it is to camp or stay the night at a national park?
3. How risky do you believe it is to get within 100 yards (length between two end zones of a football field) of bears or wolves in a national park?
4. How risky do you believe it is to get within 25 yards (length of a swimming pool) of bison or elk in a national park?
5. How risky do you believe it is to get within 25 yards of a deer in a national park?
6. How risky do you believe it is to get within 25 yards of a seal in a national park?
7. How risky do you believe it is to get within 25 yards of nesting birds in a national park?
8. How risky do you believe it is to get within 25 yards of wild horses on a national seashore/beach?
9. How risky do you believe it is to feed wild animals in a national park?
10. How risky do you believe it is to leave open containers of food out in a national park?
11. How risky do you believe it is to not move away from wildlife that is approaching you within a national park?
12. How risky do you believe it is to approach or get within 25 yards of wildlife while you're in your vehicle within a national park?

Page 11:

Please rate the following on a scale of 1 (not at all likely) to 5 (extremely likely). For reference, 100 yards is the length of a football field and 25 yards is the length of two tour buses.

1. If you saw a bear or wolf in a national park, how likely would you be to move within 100 yards of the wildlife to take a closer photograph?
2. If you saw a bison or an elk in a national park, how likely would you be to move within 25 yards of the wildlife to take a closer photograph?
3. If you saw a deer in a national park, how likely would you be to move within 25 yards of the wildlife to take a closer photograph?
4. If you saw a seal in a national park, how likely would you be to move within 25 yards of the wildlife to take a closer photograph?

5. If you saw a nesting bird in a national park or seashore, how likely would you be to move within 25 yards of the bird to take a closer photograph?
6. If you saw a wild horse on a national seashore/beach, how likely would you be to move within 25 yards of the horse to take a closer photograph?
7. If wildlife got within 25 yards of you in a national park, how likely would you be to take a photograph without moving away from the animal(s)?
8. If you saw wildlife while inside your vehicle, how likely are you to stop within 25 yards of the wildlife to take a photograph from inside your car?

Page 12:

Could you imagine a situation in which you might want to move closer to wildlife to take a picture?

- ☐ Yes, Possibly
- ☐ No, I would never approach wildlife under any circumstances.

Page 13

Display This Question:

If question on page 12, Yes Is Selected

1. Describe 1-2 scenarios you have either experienced or could easily imagine in which you would move closer to wildlife in a national park to take a picture. Consider including the type or types of animals and why you want to (or did) move closer to it for the picture in each scenario.
[SPACE TO TYPE IN RESPONSE]

2. Could you expand more on any conflicting thoughts or feelings you have about getting closer to wildlife in a national park to take a picture?
[SPACE TO TYPE IN RESPONSE]

Page 14:

What do you think might help you (or others like you) stay a safe distance from wildlife in national parks, even if that meant not getting the type of picture you would like to have of your experience? For example, are there types of information, ideas, or experiences that might make you more likely to keep a safe distance?
[SPACE TO TYPE IN RESPONSE]

Page 15:

Demographic questions

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other

☐ What year were you born? Please enter the complete year (e.g., 1996).
[SPACE TO TYPE IN RESPONSE]

Have you lived the majority of your life within the United States?

- ☐ Yes
- ☐ No

Display This Question:

If Have you lived the majority of your life within the United States? Yes Is Selected

☐ What state within the United States have you lived for the majority of your life?
[SPACE TO TYPE IN RESPONSE]

Do you sometimes or always speak a language other than English at home?

- ☐ Yes
- ☐ No

Are you of Hispanic, Latino, or Spanish origin?

- ☐ No, not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican American, Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino, or Spanish origin (for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on).

What is your race?

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other

How many times have you visited a national park in the past three years?

- ☐ I have not visited a national park within the past three years.
- ☐ 1-3 times
- ☐ 4-6 times
- ☐ 7-9 times
- ☐ 10 or more times

Are you, or have you been an employee or volunteer with a national park or the National Park Services within the last three years?

- ☐ Yes
- ☐ No

Page 16: Thank you page.

APPENDIX C: SURVEY, VERSION 2

Changes are indicated in bold text.

Online Identity and Wildlife Risk Perception Survey Page 1: Consent form

Page 2:

When it comes to online social spaces, like social networking sites, please rate the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. On social media sites (e.g., Facebook, Instagram, Twitter) it is very important for me that others see me the way I want them to.
2. Through everything I post online, I want to send a certain message about myself.
3. I am aware of the impression I make on social media sites.
4. On social media sites, I mostly post content that puts me in a good light.

Page 3:

Answer the following questions on a scale of 1 (strongly disagree) to 5 (strongly agree) in terms of the people you interact with online.

1. There are several people online I trust to help solve my problems.
2. There is someone online I can turn to for advice about making very important decisions.
3. There is no one online that I feel comfortable talking to about intimate personal problems (reversed).
4. When I feel lonely, there are several people online I can talk to.
5. If I needed an emergency loan of \$500, I know someone online I can turn to.
6. The people I interact with online would put their reputation on the line for me.
7. The people I interact with online would be good job references for me.
8. The people I interact with online would share their last dollar with me.
9. I do not know people online well enough to get them to do anything important (reversed).
10. The people I interact with online would help me fight an injustice.

Page 4:

Answer the following questions on a scale of 1 (strongly disagree) to 5 (strongly agree) in terms of the people you interact with online.

1. Interacting with people online makes me interested in things that happen outside of my town.
2. Interacting with people online makes me want to try new things.
3. Interacting with people online makes me interested in what people unlike me are thinking.

4. Talking with people online makes me curious about other places in the world.
5. Interacting with people online makes me feel like part of a larger community.
6. Interacting with people online makes me feel connected to the bigger picture.
7. Interacting with people online reminds me that everyone in the world is connected.
8. I am willing to spend time to support general online community activities.
9. Interacting with people online gives me new people to talk to.
10. Online, I come in contact with new people all the time.

Page 5:

Answer the following questions on a scale of 1 (strongly disagree) to 5 (strongly agree) in terms of the people you interact with online.

1. Using online social media sites, I'd be able to find out about events in another town from an acquaintance living there.
2. If I needed to, I could ask an acquaintance to do a small favor for me via online social media sites.
3. I would be able to stay with an acquaintance I know online if traveling to a different city.
4. I would be able to find information about a job or internship from an online social acquaintance.
5. It would be easy to find people online that I have lost touch with offline.

Page 6:

Name three people whose opinions on national parks, wildlife, or nature based activities matter to you.

[SPACE TO TYPE IN RESPONSE]

Based on the three people you named previously, please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. I care enough about these people's opinions that I want to do what they want me to do when it comes to getting close to or approaching wildlife in national parks.
2. I care enough about these people's opinions that I want to do what they want me to do when it comes to photographing wildlife in national parks.
3. **I care enough about these people's opinions that I want to do what they want me to do when I see wildlife in national parks.**

Page 7:

Please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. Think of all undergraduate students at your university, I believe the majority of them would get within 25 yards (length of a swimming pool) of wildlife in a national park.
2. Think of all undergraduate students at your university, I believe the majority of them would get within 25 yards (length of a swimming pool) of wildlife to take a photograph.

3. **Think of all undergraduate students at your university, if wildlife moved within 25 yards of them, I believe they wouldn't move away from the wildlife.**
4. If my friends get within 25 yards (length of a swimming pool) of wildlife in a national park, I would also get close to the wildlife.
5. If my friends get within 25 yards (length of a swimming pool) of wildlife to take a photograph, I would also get close to wildlife to take a photograph.
6. **If wildlife moved within 25 yards (length of a swimming pool) of my friends and they didn't back away, I would also stay within 25 yards of wildlife that had moved closer to me.**

Page 8:

Name three people whose opinions on online social networks like Facebook, Instagram, and Twitter matter to you.

[SPACE TO TYPE IN RESPONSE]

Based on the three people you named previously, please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. I care enough about these people's opinions that I want to do what they want me to do when it comes to posting photographs on social media sites.
2. I care enough about these people's opinions that I want to do what they want me to do when it comes to feedback, comments, and likes on social media sites.
3. **I care enough about these people's opinions that I want to do what they want me to do when it comes to posting self-photographs or "selfies" on social media sites.**

Page 9:

Please answer the following on a scale of 1 (strongly disagree) to 5 (strongly agree).

1. Think of all undergraduate students at your university, I believe the majority of them would post photographs of wildlife they saw in a national park.
2. Think of all undergraduate students at your university, I believe the majority of them would like, comment or give other feedback for wildlife photography in social media sites.
3. **Think of all undergraduate students at your university, I believe the majority of them would post self-photographs or "selfies" with wildlife they saw in a national park.**
4. If my friends post photographs of wildlife in national parks, I would also post photos of wildlife I see in national parks.
5. If my friends comment, like or give feedback on wildlife photos in social media sites, I would also give comments, likes or other feedback on similar photos.
6. **If my friends post self-photographs or "selfies" with wildlife in national parks, I would also post self-photographs or "selfies" with wildlife I see in national parks.**

Page 10:

Please rate the following on a scale of 1 (not at all risky) to 5 (extremely risky). For reference, 100 yards is the length of a football field and 25 yards is the length of a swimming pool.

1. How risky do you believe it is to visit a national park?
2. How risky do you believe it is to camp or stay the night at a national park?
3. How risky do you believe it is to get within 100 yards (length between two end zones of a football field) **of bears** in a national park?
4. **How risky do you believe it is to get within 100 yards (length between two end zones of a football field) of wolves in a national park?**
5. How risky do you believe it is to get within 25 yards (length of a swimming pool) **of elk** in a national park?
6. How risky do you believe it is to get within 25 yards (length of a swimming pool) of a deer in a national park?
7. How risky do you believe it is to get within 25 yards (length of a swimming pool) of a seal in a national park?
8. How risky do you believe it is to get within 25 yards (length of a swimming pool) of nesting birds in a national park?
9. How risky do you believe it is to get within 25 yards (length of a swimming pool) of wild horses on a national seashore/beach?
10. How risky do you believe it is to feed wildlife in a national park?
11. How risky do you believe it is to leave open containers of food out in a national park?
12. How risky do you believe it is to not move away from wildlife that is approaching you within a national park?
13. How risky do you believe it is to approach or get within 25 yards (length of a swimming pool) of wildlife while you're in your vehicle within a national park?

Page 11:

Please rate the following on a scale of 1 (not at all likely) to 5 (extremely likely). For reference, 100 yards is the length of a football field and 25 yards is the length of a swimming pool.

1. If you saw **a bear** in a national park, how likely would you be to move within 100 yards of the wildlife to take a closer photograph?
2. **If you saw a wolf in a national park, how likely would you be to move within 100 yards of the wildlife to take a closer photograph?**
3. If you saw **an elk** in a national park, how likely would you be to move within 25 yards of the wildlife to take a closer photograph?
4. If you saw a deer in a national park, how likely would you be to move within 25 yards (length of a swimming pool) of the wildlife to take a closer photograph?
5. If you saw a seal in a national park, how likely would you be to move within 25 yards (length of a swimming pool) of the wildlife to take a closer photograph?

6. If you saw a nesting bird in a national park or seashore, how likely would you be to move within 25 yards (length of a swimming pool) of the bird to take a closer photograph?
7. If you saw a wild horse on a national seashore/beach, how likely would you be to move within 25 yards (length of a swimming pool) of the horse to take a closer photograph?
8. If wildlife got within 25 yards (length of a swimming pool) of you in a national park, how likely would you be to take a photograph without moving away from the animal(s)?
9. If you saw wildlife while inside your vehicle, how likely are you to stop within 25 yards (length of a swimming pool) of the wildlife to take a photograph from inside your car?

Page 12:

Could you imagine a situation in which you might want to move closer to wildlife to take a picture?

- ☐ Yes, Possibly
- ☐ No, I would never approach wildlife under any circumstances.

Page 13

Display This Question:

If question on page 12, Yes Is Selected

1. Describe 1-2 scenarios you have either experienced or could easily imagine in which you would move closer to wildlife in a national park to take a picture. Consider including the type or types of animals and why you want to (or did) move closer to it for the picture in each scenario.
[SPACE TO TYPE IN RESPONSE]

2. Could you expand more on any conflicting thoughts or feelings you have about getting closer to wildlife in a national park to take a picture?
[SPACE TO TYPE IN RESPONSE]

Page 14:

What do you think might help you (or others like you) stay a safe distance from wildlife in national parks, even if that meant not getting the type of picture you would like to have of your experience? For example, are there types of information, ideas, or experiences that might make you more likely to keep a safe distance?
[SPACE TO TYPE IN RESPONSE]

Page 15:

Demographic questions

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Other

☐ What year were you born? Please enter the complete year (e.g., 1996).
[SPACE TO TYPE IN RESPONSE]

☐ **What is your academic major? If you're a double major, please list both majors.**
[SPACE TO TYPE IN RESPONSE]

Have you lived the majority of your life within the United States?

- ☐ Yes
- ☐ No

Display This Question:

If Have you lived the majority of your life within the United States? Yes Is Selected

☐ What state within the United States have you lived for the majority of your life?
[SPACE TO TYPE IN RESPONSE]

Do you sometimes or always speak a language other than English at home?

- ☐ Yes
- ☐ No

Are you of Hispanic, Latino, or Spanish origin?

- ☐ No, not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican American, Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino, or Spanish origin (for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on).

What is your race?

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other

How many times have you visited a national park in the past three years?

- ☐ I have not visited a national park within the past three years.
- ☐ 1-3 times
- ☐ 4-6 times
- ☐ 7-9 times
- ☐ 10 or more times

Are you, or have you been an employee or volunteer with a national park or the National Park Services within the last three years?

- ☐ Yes
- ☐ No

Page 16: Thank you page.

APPENDIX D: QUALITATIVE THEME DEFINITIONS

Each response has the potential to be coded into multiple themes.

Question 1: Describe 1-2 scenarios you have either experience or could easily imagine in which you would move closer to wildlife in a national park to take a picture. Consider including the type or types of animals and why you want to (or did) move closer to it for the picture in each scenario.

Themes

Express regret

Any time a participant expresses regret, shame, or understanding that their actions may have caused harm to him/herself, others, or wildlife.

- “I was driving up the Poudre Canyon with friends and saw a bear. We pulled over and ran back to where I thought we saw the bear. We were on opposite sides of the street and the bear was on the uphill. We were taking pictures from the opposite side of the road, but other cars began to stop and walked closer to the bear. They crossed the road and a few walked up part way the mountain. I was so sad that I caused all this to happen; people and the bear's endangerment, and do not see myself recreating a "scenario" similar to that again.”

Example with no reason or feelings expressed

This theme included any examples participants gave that had no reason, motivation, or feeling expressed within them. They were relevant to the question, but did not include enough information to code them within another theme.

- “Walking a trail and seeing a deer.”

Hunting

This theme was expressed by participants that have been close to wildlife for hunting purposes.

- “I am an avid bow hunter so I consistently move within 25 yards to kill animals, specifically deer, elk, bear, and antelope. Once a shot is taken I track and walk up to the animal to take a photo of it.”

Vehicle or building or boat

Any time a participant discusses getting close to wildlife from the “safety” of a vehicle, boat, or building. Often the boating comments will be about fishing but they could be anything. This is different from other types of barriers because the individual is “inside” something.

- “I think it should be in the car. Because it is safe.”
- “When we were in Yellowstone National Park, we were stopped while in the car by a group of buffalos crossing the road. Of course, like everyone else, we rolled down the windows to take pictures. We were probably within 10 feet of them.”

Cute, intriguing, interesting, cool, pretty

This theme is defined by people's willingness to get close to wildlife that are interesting to them. Often participants will talk about how cool or how pretty an animal is. There are some comments about baby animals being cute and that is what draws the individual closer.

- "If there was a cute squirrel or something."
- "If I can be close to a baby panda, I will definitely take a photograph for it. Because it's so cute, and it won't be aggressive or mad suddenly if everything goes as usual."

Distracted wildlife/risk taking

These comments are often about taking risks when wildlife seemingly aren't paying attention or are distracted by other wildlife or humans in the area.

- "I think I would consider moving closer to wildlife if they were distracted by the other animals around them."

Not applicable/can't think of any/wouldn't take photo/use zoom

There are comments that don't contribute real ideas of when people have gotten close to wildlife. They don't answer the question that is asked.

- "I love camping."

With a guide/safe circumstance/on a tour

This theme addresses any comment regarding tour guides, tours, or other circumstances where a participant might be with a park ranger or other tourist-type event.

- "I have taken pictures of elk and bison extremely close up. However, this was only because I was at Dogwood Canyon in Missouri and part of the tour is to pour feed along the sides of the tram so the animals come closer."
- "This all depends on the situation. If you are with an expert or guide about a specific animal then yes, I would move closer to take a picture depending on the information I receive from the expert or guide."

Accidentally/wildlife came towards them

Some participants discussed times where wildlife came closer to them or times when they came up on a wildlife without realizing it until they were too close such as around a corner, etc.

- "If by happen chance I accidentally came within close proximity of a wild animal and it did not know I was present, then I might consider a photo."

Rare wildlife/animals they've never seen before

Rare wildlife or rare experiences were expressed and all fall under this theme. Participants would talk about new experiences or things they have never seen or done before as an important reason for getting close to wildlife, especially to take a photo.

- "Something you haven't seen before, something rare but not necessarily dangerous."
- "If I saw a bear or a moose or an elk or a waterfall something so beautifully majestic and completely rare to see out in the suburbs."

Animals in cages/natural or built barriers/safe distance

Anytime participants talk about animals being in cages, their being a natural barrier such as a river or mountain, or moving closer but still keeping a safe distance, it will fall into this theme.

- “I would move closer if there was a loose barrier. If there was a wooden fence or a harmless wire fence in between I’d be comfortable with moving closer to take a picture of maybe a horse, or deer, or maybe even an elk.”
- “When there is a gap or river or something like that between me and the wildlife such as bear I would move closer but not cross the river.”

Medium-large, perceived non-threatening (include deer, and non-threatening comments with no animal size reference here)

Participants discuss getting close to wildlife that they deem non-threatening. Any time a participant talks about non-threatening wildlife without referencing the size of the wildlife or a type of wildlife it will go here as well as any wildlife the size of a deer or larger.

- “If I deem the animal non-threatening I may move closer.”
- “Elks are standing and eating grass. I want to close to them, because they are not risk like a lion.”

Get a clear photo or a better view (new camera)

This theme encompasses comments and responses about moving to get a better photograph or to get a better view even if it isn’t for a photograph.

- “I would move closer simply to get a better view, especially for the more rare animals (bears, wolves, wild horses). I do not really take picture, so the intent would not be to move closer for a better photograph.”
- “I might move laterally and a little bit closer to get a better shot (avoid foliage, etc.)”

Wildlife is trapped, in danger, or hurt and “needs help”

Some participants responded by saying they would move closer to wildlife if the animal was in danger or hurting.

- “Seeing an animal in danger or trapped.”

With other people/others are doing it

This theme entails the notion of social norms. Participants make comments about getting close if they are with other people or if other people are doing it.

- “I have gotten closer to elk in Rocky Mountain National Park in my vehicle because other people were doing it, and because I felt safe in my vehicle.”
- “If a lot of other people are taking pictures up close and the animal seem calm.”

Photo as a keepsake/memory/documentation/show friends & family

This theme includes responses when participants talk about taking photographs for future use either to share with friends and family or as a memento of their experience.

- “I was in the car with some family members and we saw 5 deer getting a drink from a lake, we stopped the car where it was, and only leaned in to get some pictures to show to friends later.”
- “The pictures were used to describe how close we were and as keepsakes.”

Familiarity, experience/wildlife seems curious, nice, relaxed, calm/a feeling of comfort or safety/normal occurrence

This theme includes any response that talks about feeling safe. This involves any time participants talk about how the wildlife seem calm so the situation is safe and/or they are familiar with wildlife.

- “I was in a National Park in camping grounds. An elk walked right into our camp grounds and was already very close to us. He was very calm and was just looking for some food. I got a little closer to take a picture.”

Escape route planned

This theme is about risk and doing something risky as long as there is a safe way out if the situation gets riskier.

- “I would possibly move closer to wildlife in order to get a photograph if the animal was not super aggressive and if there was an easy escape in case the animal charged.”
- “If I saw a wild animal known to be aggressive, I would get as close as possible to take a picture while having an escape plan.”

Smaller, perceived non-threatening

This theme is any time a participant discusses moving closer to small wildlife that are perceived as non-threatening.

- “I would move closer to animals that were less threatening and smaller.”
- “I have moved closer to take pictures of smaller animals, such as marmots, fish, small birds, squirrels, or turtles.”

Question 2: Could you expand more on any conflicting thoughts or feelings you have about getting closer to wildlife in a national park to take a picture?

Not coded in order to avoid repeated codes/analysis. This information might be useful for future research that looks more in-depth at the qualitative data here. For the purpose of this study, question 2 is redundant and doesn't add value beyond what question 1 adds to the quantitative data.

Question 3: What do you think might help you (or others like you) stay a safe distance from wildlife in national parks, even if that meant not getting the type of picture you would like to have of your experience? For example, are there types of information, ideas, or experiences that might make you more likely to keep a safe distance?

Advertisement

Some participant suggested using advertisement as a way to alleviate human-wildlife interactions in national parks.

- “More publication and advertisement about the potential dangers of wild animals.”

Social Media

Any time a response includes social media as a tool to spread messaging about the dangers of wildlife and getting too close.

- “Social media postings warning and showing the dangers.”
- “Social media campaign.”

Improved Technology

Some responses talk about getting better cameras or improving the zoom on a camera as a way to keep a safe distance.

- “Getting a better camera or a camera lens adapter for a phone that turns your phone into a professional camera that way you don’t have to work as hard for the perfect shot.”

Distraction Attractions

This theme included creative responses and suggestions about ways to distract park visitors’ attention. Things like giving out photographs so people don’t feel the need to take pictures or creating safe viewing areas.

- “Maybe rent out nice cameras at national parks with a good zoom. That way people get the pictures they want while staying safe and park makes some money.”

Videos

Responses that include the mention of videos fall into this theme. Participants suggest different kinds of videos including PSA’s.

- “I think if there are realistic informational videos of the dangers that this can pose on the animal or you this would help deter people from approaching.”
- “I think it should be required upon entering a national park to view a safety video regarding the types of animals in the park and the safety measures that can be taken to avoid endangering the visitors or the animals.”

Barriers/Fences/Built Environment

Some participants suggest changing the built environment to keep people and wildlife separate and safe.

- “I think barrier and fences would be a good way to keep a safe distance.”
- “Barriers in some cases to prevent getting close to animal homes, food source, and travel routes.”

Do Nothing

There were participants that discussed the idea that nothing can be done. These comments are often pessimistic in nature suggesting that people are going to do what they want to do no matter how hard you try to help them.

- “The only thing that can fix this stupidity is natural selection. When a bear eats somebody trying to get close to it, or a moose tramples somebody to death, then at least society has one less idiot who doesn’t understand these concepts.”
- “Natural selection.”
- “Nothing. People who will listen to warning will heed them, and those who won’t will not.”

Fines/Legal Consequences

This theme entails any comments or responses about legal fees, fines, having more park rangers in certain areas or any other type of enforcement or threat of sanction.

- “Implement a fine.”
- “Our national parks are being abused. People should have to register and get a permit before being able to enter the park. Limit the # of people in the park on any given day. If we had to pay higher entrance fees to the parks. People should be prosecuted harshly for defacing natural lands and endangering animals. Maybe make everyone who gets a permit take a class taught by rangers 45 minutes about the park and how to treat her.”

Other/Not Applicable

This theme includes all responses that did not directly answer the question or were not applicable to the topic.

Bad Experiences

Participants would give comments about using real life experiences and stories as a way to influence visitors to keep a safe distance. This theme also includes examples of personal experiences that influenced the participants’ themselves to keep a safe distance or comments that suggest people need to learn from experience.

- “Definitely experiences, and warning people that it’s not only about their safety but it is important for the wildlife as well.”
- “I think that it’s really hard to convince someone to stay away from an animal unless they strongly believe that. I think that the most effective way to teaching someone a lesson would be for them to experience the fear themselves.”
- “Maybe telling or posting stories of what has happened to other people who got too close.”

Signs

Any time a comment or response mentions or discusses the use of signs, pamphlets or brochures it would be coded under this theme.

- “Information about wildlife and dangers of wildlife should be placed on larger signs.”
- “I feel like signs are a good way to inform people without being too disruptive of the wildlife.”

Animal Education

This theme includes comments and responses that discuss education. Specifically, any education comments that imply the park or other government entity should provide more education for the public and for the visitors.

- “Education on how dangerous certain animals at certain times a year can be.”
- “Education is always a prime piece of preventing people from doing things that are not helpful to them or wildlife. A class is a great idea, or maybe creating areas that keep people back, but are more likely to see wildlife.”

Self-defense

Any response that includes guns or other self-defense ideas.

- “Fences and guns.”

Self-education

This theme is similar to animal education except that these comments all allude to the public and visitors being responsible for his or her own knowledge gain. This can include comments such as “google” information, looking up information, and/or comments about becoming more educated.

- “Yes, for instance one could look up facts about how many people get attacked by wild animals a year just for trying to take a good quality picture of the animal(s).”

Community/Social Norms

Some participants will suggest creating social norms or community involvement as a way to solve dangerous human-wildlife interaction and comments or response such as these will be coded into this theme.

- “Somehow make apparent all the benefits that can come from each individual contribution. Also by creating a community like aspect, maybe people will be more inclined to do what others are doing.”

APPENDIX E: STATISTICS, DATA COLLECTION 1

Cronbach's Alpha

Scale	Number of Items	Cronbach's Alpha
Online Identity Management	4	$\alpha = 0.809$
Online Social Capital	25	$\alpha = 0.922$
Wildlife Risk Social Norms	6	$\alpha = 0.681$
Risky Wildlife Photography Social Norms	6	$\alpha = 0.761$
Wildlife Risk Perceptions	12	$\alpha = 0.88$
Risky Wildlife Photography	8	$\alpha = 0.907$

Pearson's Correlations

Hypothesis	Scales	Pearson's r	Significance
H1	Online Social Capital and Online Identity Management	$r = 0.326$	$p < .01$
H2	Risky Wildlife Photography Social Norms and Online Identity Management	$r = 0.42$	$p < .01$
H3	Risky Wildlife Photography Social Norms and Risky Wildlife Photography	$r = 0.191$	$p < .01$
H4	Online Identity Management and Risky Wildlife Photography		Not Significant
H5	Risky Wildlife Social Norms and Wildlife Risk Perceptions	$r = -0.159$	$p < .01$
H6	Risky Wildlife Social Norms and Risky Wildlife Photography	$r = 0.385$	$p < .01$
H7	Wildlife Risk Perceptions and Risky Wildlife Photography	$r = -0.324$	$p < .01$

Multiple Linear Regression with Interaction

Independent Variable	Beta	t value	Significance
Online Identity Management – Centered	$\beta = 0.115$	$t = 2.35$	$p < .01$
Risk Perceptions – Centered	$\beta = -0.343$	$t = -7.085$	$p < .01$
Online Identity x Risk Perceptions	$\beta = -0.044$	$t = -0.911$	Not Significant

**Dependent Variable = Risky Wildlife Photography*

Model Summary			
Adjusted R Squared	F Change	Significance	Durbin Watson
0.114	17.601	$p < .01$	1.929

APPENDIX F: STATISTICS, DATA COLLECTION 2

Cronbach's Alpha

Scale	Number of Items	Cronbach's Alpha
Online Identity Management	4	$\alpha = 0.767$
Online Social Capital	25	$\alpha = 0.913$
Wildlife Risk Social Norms	9	$\alpha = 0.789$
Risky Wildlife Photography Social Norms	9	$\alpha = 0.789$
Wildlife Risk Perceptions	13	$\alpha = 0.846$
Risky Wildlife Photography	9	$\alpha = 0.881$

Pearson's Correlations

Hypothesis	Scales	Pearson's r	Significance
H1	Online Social Capital and Online Identity Management		Not Significant
H2	Risky Wildlife Photography Social Norms and Online Identity Management	$r = 0.148$	$p < .01$
H3	Risky Wildlife Photography Social Norms and Risky Wildlife Photography		Not Significant
H4	Online Identity Management and Risky Wildlife Photography		Not Significant
H5	Risky Wildlife Social Norms and Wildlife Risk Perceptions		Not Significant
H6	Risky Wildlife Social Norms and Risky Wildlife Photography	$r = 0.279$	$p < .01$
H7	Wildlife Risk Perceptions and Risky Wildlife Photography	$r = - 0.336$	$p < .01$

Multiple Linear Regression

Independent Variable	Beta	t value	Significance
Online Identity Management – Centered	$\beta = 0.102$	$t = 1.379$	Not Significant
Risk Perceptions – Centered	$\beta = - 0.351$	$t = - 4.841$	$p < .01$
Online Identity x Risk Perceptions	$\beta = - 0.015$	$t = - 0.205$	Not Significant

**Dependent Variable = Risky Wildlife Photography*

Model Summary			
Adjusted R Squared	F Change	Significance	Durbin Watson
0.108	8.035	$p < .01$	2.028