THESIS

HUMAN-WILDLIFE INTERACTIONS AND INSTAGRAM CREDIBILITY

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ABSTRACT

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Wildlife selfies are becoming a more common occurrence on social media platforms today. However, approaching wildlife with the intent to use them as a photo prop can be detrimental to both the humans and the wildlife involved. By utilizing source credibility and familiarity, this study works to identify an effective method that dissuades individuals from taking wildlife selfies and posting them on Instagram, mainly by analyzing the self-reported behavioral beliefs and intentions of participants. This study varied source credibility on three levels in terms of trust and authority while also varying how familiar different wildlife species are to Colorado university students.

Results determined comment author source credibility and wildlife species familiarity did not significantly affect the behavioral intent or beliefs of respondents when it comes to wildlife selfies. However, the interaction between comment source credibility and wildlife species familiarity did significantly affect the behavioral intentions and beliefs of respondents. The mixed findings of this study as thus able to contribute to and expand upon existing literature, while also providing evidence of a need for more research in this area in order to better understand social media credibility and best practices for advocating for individuals keeping their distance from wildlife, especially when it comes to posting these close encounters online.

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CHAPTER 1. INTRODUCTION

1.1 Overview and Rationales

Social media has become increasingly prevalent in the world today, with more and more people turning to various online platforms over other traditional sources of media. However, the ease of access to the online lives of other people can also perpetuate some dangerous behaviors. Trends on social media are patterns of posts that encourage users to imitate or engage with a specific theme or concept. They experience surges of popularity that are considered influential on user motivations to post specific types of content. Although trending topics may motivate people to try new things, they can also lead to reckless behavior, such as stealing, trying dangerous tricks, or consuming dangerous substances.

One of these behaviors that have grown in popularity online is the phenomenon of individuals taking up-close photos or videos of themselves with wildlife or "wildlife selfies" and posting these to an image-sharing social media platform, like Instagram. The trend of the wildlife selfie has become more popular over time (Pagel et al., 2020; Wang et al., 2021) and works to encourage people to get close to animals (Pearce & Moscardo, 2015), even though doing so involves safety risks and can be viewed as wildlife harassment. Wildlife management professionals are concerned that these acts can disrupt feeding and breeding habits, harm the animals, and harm people as well. In a statement from 2016, the National Oceanic and Atmospheric Association (NOAA) commented on the issue of wildlife selfies by stating, "And while it may seem perfectly harmless to sidle up to a sea turtle that appears to be 'hanging out,' the few seconds it takes to snap a photo can have a compounded and lasting impact on the life of a wild animal." Through further examination of these types of Instagram posts and the

cognitions and behaviors they can evoke in others who see them, it will become clear how these dangerous behaviors can be addressed in a manner that lessens their amount and affect in the future. Throughout the rest of this introductory chapter, the topic of this study will be better defined, gaps in existing literature will be identified, and the overarching research question driving this study will be introduced.

In visual media, wildlife is being increasingly shown as friendly (Pagel, 2020), as if they are merely photographic props and not actual animals. To change this frame of mind, we must examine potential alternatives. One possibility is to change the behavior of taking wildlife selfies by promoting an alternative to a selfie. For example, promoting forced perspective photos or simply taking photos of the animal from further away could be presented as replacement behaviors. Behavioral changes have been researched previously, with findings suggesting that the promotion of replacement behaviors may be successful in changing behavior as long as the new behavior is seen as desirable (Cheung et al., 1999; Slater, 1999). However, when it comes to social media, there is a lack of people online that are seen as credible leaders that can effectively promote some of these changes. These individuals would be referred to as gatekeepers and there is a lack of them online, which makes it difficult for everyday users to tell who is credible and trustworthy (Abbasi & Liu, 2013; Mitra et al., 2017; Samantray & Pin, 2019). It is for these reasons that there exists a gap between establishing credibility online, influencing behavioral intentions, and promoting better behaviors when it comes to human-wildlife interactions.

While some of this study is based on common phenomena, some novel concepts will be explored as well. For this study, Instagram will be the primary social media platform studied since it promotes image sharing more so than any other frequently used social media site.

Additionally, a "wildlife selfie" will refer to an image taken that depicts a person in the same frame and in close proximity to a wild animal, sometimes with the person in the photo being the one taking the photo. Human-wildlife interactions will refer to the close proximity in which the activities of humans and animals occur to one another, consequently humans, wildlife, or both can be affected by these interactions (Leong, 2009; Lischka et al., 2018; Peterson et al., 2010). Finally, the term credibility will be used to refer to a feeling of trust, believability, or reliability one holds towards another individual (either online or in-person).

Literature on the topic of wildlife selfies and how to prevent them from circulating online indicate that while social media has both positively and negatively influenced animal welfare, it is still highly influential on the perceptions people develop about wild animals (Lenzi et al., 2020; Wu et al., 2018). One positive implication is that social media has been found to increase mobilization among individuals when implemented by both private and public sector organizations (Anderson-Wilk, 2009; Cockerill, 2013), which indicates that these online platforms can be used to garner public support for a cause, like wildlife conservation. The popularity of selfies, especially tourists' selfies has grown over the years (Pagel et al., 2020), however, there are still questions surrounding the audience of these pictures and why this phenomenon has become so popular (Carder et al., 2018; Pearce & Moscardo, 2015). This could be explained somewhat by the idea that pictures tend to resonate more with readers than words do, especially in younger generations, who make up most social media users (Larkin & Simon, 1987; Pittman & Reich, 2016; Wu et al., 2018).

Research on the topic of wildlife selfies has also credited ecotourism with creating and perpetuating some of the dangerous behaviors that are now trying to be prevented. Previous research suggests wild animals have been prevalently used as props in wildlife tourism to attract

tourists and tourism dollars, even though these encounters can be detrimental to the animals' welfare (Carder et al., 2018). Additionally, wildlife protection and tourism organizations have collected data and compiled evidence suggesting the wildlife tourism economy, potentially driven in part by wildlife selfies, is now out-competing poaching, pet, and zoo economies for wildlife (World Travel and Tourism Council, 2019; World Society for the Protection of Animals, 2017). One organization compiled evidence from Latin America showing wildlife are being baited, habituated, and even captured and held captive for tourists to have the illusion of a wild animal encounter (World Society for the Protection of Animals, 2017). Though not possible to disentangle cause and effect between the prevalence of wildlife selfies and the rise in wildlife tourism and up-close wildlife encounters, wildlife selfies may perpetuate risky behavior that has potential long-term negative consequences on wildlife.

While wildlife selfies are becoming a more well-known issue, there are still few studies that have looked into the link between wildlife selfies and the harm they can cause when it comes to animal welfare and even animal conservation (Lenzi et al., 2020). World Society for the Protection of Animals (2017) collected and analyzed wildlife selfies from Instagram, Twitter, and Facebook from 2014 to 2017 and found most were "bad selfies" (as opposed to showing a positive and safe interaction or advocating for species protection). They called attention to posts by five U.S. celebrities making a "bad selfie" with a wild animal that, given their number of followers, had potential to reach 1 billion views. Some conservation activists and conservation groups have reacted to what is viewed as a causal relationship between social media and wildlife selfies (and other over-use and abuse of public lands) through a variety of tactics. Organizations that create guidelines, ethical principles, or campaigns with aim of protecting wildlife and natural areas have incorporated messaging or guidelines to discourage geotagging, to seek out

responsible tour operators, to specifically take photos/videos with wildlife conservation in mind (from an appropriate distance, without luring/baiting, nor harassing/disturbing wildlife), and even to encourage public shaming via social media. Government agencies have even established enforcement practices encouraging submissions of social media-based evidence of wildlife harassment and monitoring social media for legal violations (Sullivan et al., 2019). While some agencies are using social media for wildlife harassment monitoring, even more are implementing social media to connect and inform the public (Khan et al., 2014; Picazo-Vela et al., 2012). No current research has been done on how credibility plays a role in the phenomenon of wildlife selfies and there has also been no research into how differing credibility of commentors on a wildlife selfie post affects attitudes and behavioral intentions of Instagram users. That is where this study aims to provide information. The wildlife selfie phenomenon is a problem; as people venture closer to wild animals, both the animals and people can be put in harm's way.

The research outlined in this study is important because it not only looks into the credibility associated with different individuals on Instagram but also examines a possible solution to curbing the wildlife selfie trend on social media (Instagram). When it comes to social media, a lack of gatekeepers online makes the probability of spreading misinformation likely (Ismail & Latif, 2013; Li & Suh, 2015; Viviani & Pasi, 2017). If misinformation is being spread around and gaining popularity it makes the issue of credibility even more important, especially since more and more information can easily be found on social media (Ismail & Latif, 2013). Typically, the concept of credibility is broken down into medium, message, and source credibility (Ismail & Latif, 2013; Kang, 2010), with sources (like social media commenters) being seen as credible when they convey both expertise and trustworthiness (Wilson, 2007). Establishing credibility on social media can assist people in making more informed decisions

(Wu et al., 2016). Examining the comments to original social media posts can help gauge the online public opinion of a topic (Lee & Chun, 2016) and act as a way to persuade others to change their behavior through social validation. Depending on what a social media comment says and who the author of the comment is could influence people's feelings and likelihood to engage in a behavior in the future. The background of why a source can influence feelings of credibility and behavior change intentions will be described in more detail in Chapter 2 of this report.

Further examining credibility online is important due to a lack of gatekeeping taking place online. If individuals who are seen as credible and having authority can help curb the trend of wildlife selfies on social media, this could lead to more trustworthy information on social media and promote safe wildlife viewing practices. This project examines the trend of wildlife selfies on social media to explore if and how efforts to stop them can be successful. By studying what makes authors or content creators on social media persuasive, this project hopes to identify effective techniques for communicating the danger of wildlife selfies.

1.2 Goals and Research Question

To further examine how to mitigate potentially harmful human-wildlife interactions that occur through wildlife selfie photography, this research examines the effects of different communication strategies within the Instagram platform and Instagram credibility, the trends of wildlife selfies on social media, and if/how efforts to stop these posts can be successful. For this project, a wildlife selfie again will refer to a picture taken of a person standing next to or touching a wild animal. This project aids in identifying the techniques for communicating the danger of wildlife selfies.

Wildlife selfies have become a trend on social media recently, especially on Instagram, which is why it was selected as the social media platform of interest for this study. These new kinds of selfies encourage people to approach wildlife and this increased number of interactions between humans and wildlife can promote wildlife harassment, doing more harm than good when it comes to conservation efforts.

Through this research, information was gathered that sheds light on the differing levels of credibility that exist for different users on Instagram, which can point to what kinds of users are found to be most credible on this platform for this topic. This research also examines whether commenting on wildlife selfie posts is an effective way to reduce the acceptability, desirability, and likelihood of taking wildlife selfies among viewers of the Instagram post and comments. The commenters in this study will be a government agency along with a more "regular" Instagram user that is geographically connected to participants and an individual scientist. Individuals who are seen as having authority are typically viewed as being more credible according to source credibility (Lin et al., 2016), and a governmental agency would have the most authority associated with it. The commenter geographically close to the target audience was chosen to represent a user with a more personal connection to participants, since finding one user who could be considered a universal online "friend" to all participants was not feasible for this project. This regular user would have less perceived authority on the topic of wildlife selfies and wildlife harassment but having close geographic proximity to participants would make the commenter feel less like a stranger that could be easily dismissed for not being relevant to the participant at all. The goals of this study are what led to the research question developed on this topic.

Research Question: Does the credibility of social media comment authors influence audience intentions to change their behavior in human-wildlife interactions?

This study looks solely at wildlife selfies on Instagram and how comments made on these posts by different authors with different levels of assumed credibility can influence the behavioral beliefs and intentions of other Instagram users.

While this study hopes to find a significant way to deter wildlife selfies for the sake of the safety and protection of humans and wildlife alike, there are also some ways in which these findings could be beneficial to both industry and academia. For example, if it is found that a governmental agency does have enough credibility to significantly affect the behavior of other users, some agencies may want to more frequently employ the use of commenting on Instagram posts to lead to a desired behavior. Results here could also advance how academics and other researchers view credibility online and even spark interest in figuring out how to create more online credibility and gatekeeping to make sure correct and accurate information is being disseminated throughout the social media community.

In order to accurately address the research question, two main methods were used to drive this study. Both source credibility theory and the Elaboration Likelihood Model (ELM) provide insight into how participants may react to the credibility of comment authors on social media and how this can influence behavior change intentions when it comes to human-wildlife interactions. Source credibility theory helps explain credibility and how communication persuasiveness is affected by the credibility of the communicator (Abbasi & Liu, 2013; Wu et al., 2016). The ELM examines how individuals process and are persuaded by information, specifically, this model explains what factors influence how information is perceived (Li & Suh, 2015; Petty & Cacioppo, 1986)

To address the research question, an experiment was administered using an online survey tool. Participants were randomly assigned to view a fictitious Instagram post with comments made by authors with varying credibility and then, asked questions regarding their attitudes towards the post, their future behavioral intentions regarding wildlife and wildlife selfies, and how credible they perceived the commenter on the post to be.

1.3 Organization of Proposal

The following chapters will further lay out the background, methodology, and results of this study. Chapter 2 will delve more in-depth into the background of this topic as well as the current literature that exists in this area. This chapter will also lay out the theoretical framework driving this study by examining how previous literature on credibility and behavioral change intentions can assist in dissuading Instagram users from taking and posting wildlife selfies. In Chapter 3, the methods section, background information on the methods for the study will be explained. Recruitment and data collection processes will also be expanded upon in this chapter. Chapter 4 will address the processes that occurred for data and statistical analysis. Finally, Chapter 5 will provide further discussion and implications of the results of this study.

CHAPTER 2. LITERATURE REVIEW

2.1 Human Intrusion on Wildlife

Humans have been increasingly encroaching upon wildlife. These encroachments upon wildlife habitats and environments by humans lead to more frequent interactions between humans and wildlife. Most mainstream news about these interactions center around the conflicts that occur (Wilson, 2007) and the subsequent fallout that typically follows. While these conflicts show the more negative side of human-wildlife interactions, wildlife is increasingly being portrayed as "friendly," especially online (Pagel, 2020).

2.1.1 Physical Contact with Wild Animals

Wildlife tourism is a popular industry in certain parts of the world that allows people visiting the chance to see and sometimes get close to, potentially "exotic" animals. This act of reeling in visitors with the promise of encountering new wildlife has generated significant revenue where it is prevalent (Brockington & Duffy, 2010; D'Cruze et al., 2018). However, wildlife tourism also works to turn natural resources, like landscapes and wild animals, into items marketed to those who are willing to pay for them (Brockington & Duffy, 2010; D'Cruze et al., 2018), thus commoditizing the natural environment.

This transformation of wild animals into a sold product has led to tourists coming in physical contact with these animals in some cases, harming the welfare of these same animals (Arena et al., 2014; Carder et al., 2018; Plotnik & de Waal, 2014). Previous research into the human handling of wild animals found that sloths who were held by tourists were frequently handled in a manner that endangered their welfare (Carder et al., 2018) and found that when sloths were being held, they performed new behaviors never previously seen in their natural

habitat (Carder et al., 2018). This example of animals changing their behaviors when in contact with humans indicates how impactful these interactions can potentially be to the animals themselves. Most human-wildlife interactions do not involve people directly handling them, but this example with wild-caught now captive sloths for tourism dollars illustrates one harmful outcome of the wildlife selfie trend. Most human-wildlife interaction events do not involve physical contact but are still potentially harmful, nonetheless, as the next sections detail.

2.1.2 Human-Wildlife Interactions: Consequences and Fallout

After an initial interaction, humans have been seen to be more compelled to seek interactions with wild animals in the future (Vail, 2018). Unfortunately, these forced encounters often lead to consequences experienced by both the humans and wildlife involved (Vail, 2018). Potential consequences can include anything from wildlife being seen as a mild nuisance to more threatening risks to people, like wildlife attacking people or pets, or even the passing of zoonotic diseases from wildlife to humans (Conover & Vail, 2014; Vail, 2018). While those previously listed consequences mainly impact the humans involved, there are also adverse impacts that can be experienced by wildlife. For example, frequent close encounters between tourists and wildlife can negatively impact the breeding and foraging behaviors of wild animals (D'Cruze et al., 2018; Jacobson & Lopez, 1994; Meissner et al., 2015), which can negatively impact their ability to survive.

While some interactions are deliberately created, some factors bring humans and animals closer together that are out of any one individual's control. There are currently numerous ecological and social factors that are at play when thinking about human-wildlife interactions, indicating that there is no one single cause of these encounters (Dickman, 2010; Lischka et al., 2018). Population growth rates and urbanization are two such factors bringing humans and

wildlife closer together (Goumas et al., 2020). There is also an increase in competition between humans and wildlife for suitable, livable habitat space (Pătru-Stupariu et al., 2020). As this amount of suitable habitat decreases, an increase in interactions between humans and wildlife is expected to occur (Bhatia et al., 2020; Nyhus, 2016). Along with the decrease in usable land, the shrinking of suitable habitats due to climate change is another factor that can increase the number of human-wildlife interactions (Bhatia et al., 2020; Nyhus, 2016). The complex web of factors that influence human-wildlife interaction and the social-ecological system of human-wildlife interactions are depicted in Figure 1 (Lischka et al., 2018).

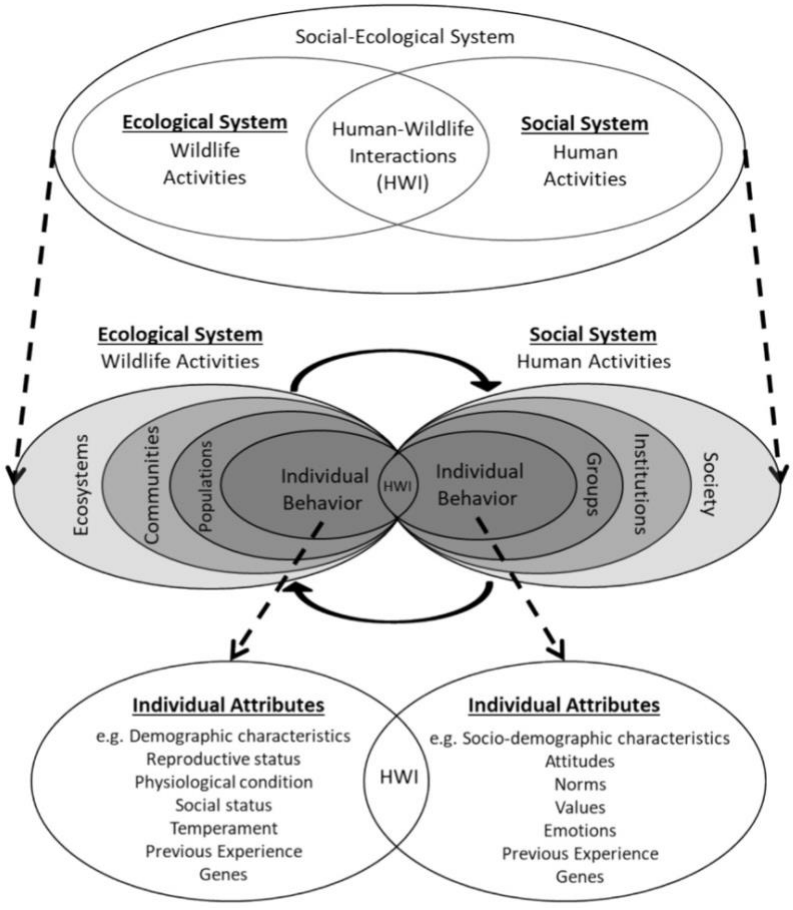


Figure 1. SES model of human-wildlife interactions. The top level describes the overall SES model of human-wildlife interactions, while the bottom two levels show influences on individual attitudes and behaviors (Lischka et al., 2018)

2.1.3 Consequences of Anthropomorphized Animals

One way in which animals are made to seem approachable is through anthropomorphism. The anthropomorphizing of wild animals works to "humanize" them and make them seem more domesticated or tame, which ultimately leads people to seek out wild animals as pets (Lenzi et al., 2020; Vail, 2018). Some common characteristics used to anthropomorphize animals include portraying them as cute and cuddly (Newsome et al., 2005; Pagel et al., 2020). When people view wildlife as human-like, they also perceive them to be approachable, leading to people attempting to feed, touch and take pictures of wild animals in their natural environment (Gallagher & Hammerschlag, 2011; Lück & Porter, 2018; Pagel et al., 2020). With the prevalence of the internet today, there is also the risk that videos and other images showing wild animals as "tame" could allow people to incorrectly see them as pets and increase the desirability to bring wildlife into a domestic environment or interact with them as a trusted, domesticated animal (Clarke et al., 2019; Lenzi et al., 2020).

2.1.4 Forced Wildlife Photography

When animals are characterized as cute and said to display emotions, it can be assumed that people would want to capture these human-like features and actions on film. Through the anthropomorphism of animals, they have not only become desired pets but photo props as well. However, using animals as a mere prop negatively impacts their welfare, and is harmful to their survival (Carder et al., 2018). Consequently, having a souvenir photo of a wildlife encounter has worked its way into today's tourism culture and the increased desirability to have these photographic memories has led to an increase in the illegal animal trade so there are enough animals to go around and be used as photo props (Carder et al., 2018; D'Cruze et al., 2018).

2.1.5 Wildlife on Social Media

With an increase in the desire to have one's picture taken with wild animals, there is also a want to share these images, which is where social media come in handy. Social media, including viral videos and wildlife selfies, play a role in influencing how the public perceives wildlife (Lenzi et al., 2020). These perceptions can also impact the popularity of animal encounters for tourists and even the wildlife trade (Lenzi et al., 2020). With being able to portray animals positively or negatively, social media plays a role in animal welfare and conservation, especially when trying to garner support for these causes (Lenzi et al., 2020; Nekaris et al., 2015). All in all, there needs to be a change in how humans think of and act around wild animals, for the sake of their welfare.

2.2 Behavioral Change

There have been several researched methods that promote behavioral changes. Shifts in how the public behaves and subsequently acts depend on who presents the most compelling case (Vail, 2018). One tested way to encourage behavior change is through providing a replacement behavior, however, the replacement behavior being advocated needs to be seen as desirable by the target audience (Cheung et al., 1999; Slater, 1999). Another powerful force seen when it comes to behavior change is that of peer pressure (Lin et al., 2016). If someone believes the larger group they are associated with holds the newly promoted behavior in high regard or if a majority of the group is already engaged in this behavior, a person may be more likely to change their behavior (Lin et al., 2016). The social validation that comes with conforming can have a powerful impact when it comes to garnering compliance (Cialdini, 2001). Another commonly utilized technique to advocate for a behavioral change is persuasion through authority, which tries to persuade others by touting their expertise and experience (Cialdini, 2001).

One study has also found that comments to original social media posts can act as a poll of what others online are thinking concerning the original message (Lee & Chun, 2016), making them a tool for social validation. For this study, comments on social media posts will be examined as they can be used to advocate for behavioral changes.

2.2.1 Theory of Planned Behavior

As proposed by Ajzen (2006), there are three kinds of considerations taken into account to guide human behavior, as laid out in the Theory of Planned Behavior, that can provide insight into what kinds of information are seen as compelling when it comes to human behavior. First off, behavioral beliefs, that examine the potential consequences and outcomes of a specific behavior, are taken into account (Ajzen, 2006). Second, beliefs about what is to be expected from a behavior as well as the behaviors of significant others (normative beliefs) are considered (Ajzen, 2006). Finally, beliefs of how existing factors may help or hinder performing a certain behavior, or control beliefs, are also considered (Ajzen, 2006). By understanding how humans decide whether to adopt a behavior or not, we can work to better predict if a new behavior will be adopted.

2.2.2 Behavioral Intentions

When weighing the options of whether to adopt a new or different behavior, there is the initial process of intending to display the behavior or action that is being offered. In a research capacity, it can be assumed that the intent to behave in a certain way occurs immediately before actually displaying a certain behavior (Ajzen, 2006), making admissions of behavioral intention an accurate way to measure the intended future behavior of a person (Ajzen, 1991). Previous research has shown that researchers are typically in agreement that one's behavioral intentions

are an indication of one's probability or likelihood of actually conducting a behavior (Ajzen, 1991; Ajzen et al., 2009).

While the behavioral intention is an indication of future actual behaviors, it is also important to realize that some behaviors are more likely to be adopted or performed than others. For example, behaviors seen as more favorable based on the attitude of those that will provide more perceived control, are likely to be adopted or performed by an individual (Ajzen, 2006).

2.2.3 Stages of Change

Another model put forth to examine the process of how behavioral change takes place is the stages-of-change model. This model identifies five steps that outline the path one takes when considering a behavior change. The first stage in this model is labeled as precontemplation and people at this stage are described as having no intention to change their behavior (Slater, 1999). The second stage is contemplation, where a person has at least recognized that there is a problem and are beginning to consider taking action (Slater, 1999). Next, the preparation stage describes people in a transitional stage where they have begun to attempt a behavior change but have not successfully altered their behavior (Slater, 1999). Stage four, or the action stage, occurs when a person has successfully changed their behavior for some length of time (Slater, 1999). Finally, stage five, or the maintenance stage, describes the success of a behavioral change when a person can sustain the newly adopted behavior change (Slater, 1999). As with the Theory of Planned Behavior, the stages-of-change model aids in describing the path one takes in making a behavior change and also acts as evidence of how behavioral intention leads directly to behavior change, again indicating the predictive power of measuring behavior intention.

2.3 Social Media

Social media can be defined collectively as websites and applications that allow those who use them to make and share content with self-defined networks (Pittman & Reich, 2016). Social media has become an online sensation that works to connect people regardless of physical distance. Social media sites like YouTube and Facebook allow people to not only upload content but police other existing content as well (Freeman & Chapman, 2007; Nekaris et al., 2015). However, because of its sheer size, it can be difficult to monitor what is occurring on social media in a large-scale capacity (Lenzi et al., 2020; Martin et al., 2018).

These social media platforms have completely changed how people connect, especially for young adults who are typically frequent users of social media (Pittman & Reich, 2016). Social media allows users to be exposed to information from a wide variety of sources, which can also be deemed interesting or important by an online network of friends (Ismail & Latif, 2013). However, as with most new technologies, social media still needs to be better understood so that users are more informed of its risks, benefits, and how to use it strategically (Picazo-Vela et al., 2012). Findings from social media research have shown that it can influence social norms (Romer et al., 2017) and even motivate people to act in certain ways (McLean et al., 2021; Scherman et al., 2015). Social media has the power to be highly influential.

2.3.1 Social Media Authors

Since social media allows users to freely create and upload their own content, there are times when content is unsuitable and can negatively impact how people feel about a topic or cause (Nekaris et al., 2013; Thaler & Shiffman, 2015; Wu et al., 2018). One such case of this occurred when celebrities began posting information about the illegal nature of trade in Slow

Lorises, however, these actions and posts ultimately decreased public support for biological conservation (Nekaris et al., 2013; Thaler & Shiffman, 2015; Wu et al., 2018).

In today's world of social media, there is a mix of content and communication that originates from both news media and public sources; however, all this information exists together online (Neubaum & Krämer, 2017; Wang et al., 2021). This is in stark contrast to the age of traditional media where individuals in the general public were solely receivers and consumers of reviewed information (Kolbitsch & Maurer, 2006; Wang et al., 2021). The new age of social media we currently reside in allows the general public to engage in content creation and distribution, without a review process (Kolbitsch & Maurer, 2006; Wang et al., 2021), giving anyone online the potential to become a leader or source of information. It can also be said that on social media, what the public deems as important and newsworthy does not usually line up with what the new media industry thinks is important (Wang et al., 2021). Authors of social media posts and response comments play a role in deciding what users see, which is why they will be further examined in this study.

2.3.2 Social Media Opinion Leaders

Opinion leaders on social media can use platforms for behavioral change. Social media opinion leaders are typically characterized by a large number of followers and social ties to the online community. Opinion leaders are usually categorized as early adopters, in two-step flow, because they receive information from the media and pass it along to others online (Choi, 2015; Dye et al., 2016; Lawry, n.d.). Some users are seen as "friends" by followers and believed to share trustworthy content (Tandoc, 2019), leading to friends acting as leaders in the dissemination of information on social media. The term friend in a social media context is typically understood to mean an individual with whom you are connected to but does not

necessarily imply the concept of friendship. Influence plays an important role in behavioral change on social media, and leaders typically influence. Social media can alter how people interact with their family and even affect their attitude, indicating that social media can change behavior (Picazo-Vela et al., 2012).

2.3.3 Natural Resource Conflicts on Social Media

Recently there have been instances of social media users or influencers creating tension online by posting or acting in ways that are detrimental to the natural environment they are utilizing as their photo backdrops (Chaudhury et al., 2021; Raffel, 2020). One example of this occurred in 2019 when a "super bloom" of poppies in California attracted so much attention on social media that the natural area where they were was inundated with people and the poppies soon trampled (Chaudhury et al., 2021; Raffel, 2020). While some more popular users received criticism for creating this destruction (Chaudhury et al., 2021), it did not dissuade more instances of this destruction of natural areas occurring globally.

There have been some solutions suggested to issues involving the harm of natural resources and wildlife, like campaign efforts that employ signage, accreditation programs for tourism companies to promote best practices, an increase in law enforcement efforts, and even the implementation of new laws (Vail, 2016). However, these efforts focus more on in-person strategies, so solutions to curb the destruction and over-use of natural areas and wildlife on social media are still needed.

2.3.4 The Use of Hashtags on Social Media

While social media is a powerful platform that can be utilized today, there is a tool utilized on social media platforms that can further impact the content of social media content, the hashtag (Saxton et al., 2015). A hashtag is defined as a word or phrase following the pound sign

that can be used on social media platforms to mark an event or movement and indicate a topic or theme (Bruns & Burgess, 2011; Enli & Simonsen, 2018; Saxton et al., 2015). Employing hashtags helps allows movements to reach individuals and organizations with similar mindsets over social media (Saxton et al., 2015). When employed with social media content, a hashtag helps clarify messages, makes a topic or movement more searchable, and allows those who use them to link their new thoughts and knowledge to existing ones (Saxton et al., 2015), which creates a community aspect around each hashtag (Potnis & Tahamtan, 2021). Generic, topic-centered hashtags can be used, but studies have found using more movement-specific topics is considered more memorable among those that see them (Saxton et al., 2015). The inclusion of hashtags in social media posts works to promote the messages and movements being described in those posts, including hashtags also makes information more searchable and available to a wider network of individuals (Potnis & Tahamtan, 2021). Given the common occurrence of hashtags on social media, this study will also hashtags in comments to appear more authentic and real and to also be more memorable, as shown by research by Potnis and Tahamtan (2021).

2.3.5 Social Media in Formal Organizations

Social media has reached a point where it is no longer solely used to connect informally with friends. Public agencies, professional societies, and even scientists have begun to see the value in adopting a social media presence to increase their abilities to network and reach more members (Anderson-Wilk, 2009; Cockerill, 2013). Based on the success of social media, even entire governments are starting to regularly use social media to recruit (Dorris, 2008), reach out to citizens (Chang & Kannan, 2008; Dorris, 2008), and even share information with other agencies and the public to increase transparency (Bertot et al., 2010; Chang & Kanan, 2008; Dorris, 2008; Picazo-Vela et al., 2012). However, maintaining a consistent presence on social

media can be a time-consuming task and many state and federal agencies are having difficulties when it comes to maintaining their social media because of their lack of personnel and technological resources (Cockerill, 2013).

Government agencies have become increasingly more present on social media since it has been shown to improve interactions between governmental agencies, between governments and their citizens, and between governments and businesses (Khan et al., 2014). Existing research has also shown that when governments participate in social media, they receive improved citizen participation (Picazo-Vela et al., 2012). Government organizations continue to experiment with social media to communicate with the public and many see this as a way to increase and improve government-citizen relations (Picazo-Vela et al., 2012). One problem government agencies face in using social media in an official capacity is the amount of bureaucracy and the slow pace with which they can and do adapt to rapid shifts in the technology and communication norms. Agencies charged with protecting wildlife, such as U.S. Fish and Wildlife, the National Oceanic and Atmospheric Administration (NOAA), the National Park Service (NPS), and state and county departments of natural resources can be restricted not only in what social media platforms they can use but also in how they can be used. Posts often must go through a review process that not only limits what can be posted but also means content can be delayed unless involving crisis circumstances. Commenting on posts and/or messaging users is all but forbidden by some federal wildlife management agencies. M. Sullivan (personal communications, February 7, 2022), an associate with the Pacific Islands Fisheries Science Center (NOAA), described how media outreach through NOAA goes through a series of approvals before it can be published, which has led some scientists to use their personal social media accounts to conduct outreach instead. There are sometimes processes in place to handle issues of wildlife harassment depicted on

social media posts, however, these procedures typically operate reactively, as opposed to proactively. For some agencies, any contact with the social media user that posts something showing discouraged or potentially illegal behavior is mostly conducted off of social media, however making contact can be difficult, as explained by A. Kurtz, marine wildlife management coordinator with the Pacific Islands Regional Office of NOAA Fisheries (personal communication, February 9, 2022). This rise in activity of agencies on social media, specifically governmental agencies, has been expanding in recent years, making them an interesting user group to study to examine what kind of effect their presence on social media may have on other users. This study may provide evidence supporting an increase in agency activity on social media when it comes to addressing wildlife harassment activities, like wildlife selfies.

While governmental agencies can be seen as credible there are potentially two factors influencing their perceived credibility. For one, many federal agencies contain a law enforcement element or branch, which could promote some perceived threat for those that encounter them online or in-person. Law enforcement has been studied to act as a deterrent and preventative measure to dissuade those from breaking the law (Ehrlich, 1972), which could be thought of even when the agency is addressing different topics. The threat of breaking the law and being caught doing so could increase a feeling of authority surrounding a governmental agency and influence their source credibility. Another factor playing a role in the credibility of government agencies is trust, one study showed that federal agencies were seen as less credible than independent firms that dealt with similar issues because of the preconceived notion that federal agencies in the past have only reported on positive outcomes of their work (James & Van Ryzin, 2017). However, as government agencies become more transparent with the public over

time, their credibility has shown improvement as they can be seen as more trustworthy (Lavena & Van Ryzin, 2013).

Recognizing this, another potentially effective commenter on wildlife selfie posts could be individual scientists using their personal accounts, as introduced in the previous paragraph. With scientists increasingly appearing at public events to talk about certain topics and findings, they are considered credible experts in the view of the public (Peters, 2008). When it comes to individual scientists, they are generally trusted by the public, and their credibility is largely gauged on their communication skills with the public, academic reputation, and the utility of the information they are relaying (Yamamoto, 2012). However, there have been study results that indicate groups of scientists being seen as more credible than individual scientists (Yamamoto, 2012). If their scientific title was associated with their username, their expertise, and by extension, credibility could be conveyed to other users reading their posts and comments. These regular scientists would have credibility without the additional threat of law enforcement attached to them. Studying this type of comment author could also help determine if individual scientists could play a role in social media when it comes to discouraging individuals to take wildlife selfies. Due to the added trust and perceived threat of authority associated with governmental agencies, they will most likely be seen as a more credible source than one individual scientist when it comes to commenting about wildlife selfies. However, both of these commenters would prove to be more credible than a regular commenter who potentially lacks reputation, trust, and authority.

Social media has extended past promoting communication between friends, but with so many people creating and consuming content there needs to be some caution when deciding which information to believe.

2.4 Credibility

Credibility is important to establish and recognize, especially in an online setting. People now get news more from social media than other sources; more information can be found on social media platforms today, enabling the spread of misinformation (Ismail & Latif, 2013; Li & Suh, 2015; Lin et al., 2016; Self & Roberts, 2019; Viviani & Pasi, 2017). However, people still seek information they think is credible, but a lack of gatekeepers online makes credibility difficult to assess (Abbasi & Liu, 2013; Mitra et al., 2017; Samantray & Pin, 2019).

Credibility has been defined as believability (Fogg & Tseng, 1999; McKnight & Kacmar, 2007), trust (Hovland et al., 1953) , accuracy (Fogg et al., 2003), and objectivity (Dijkstra et al., 1998). It has also been seen as a useful predictor of a person's future actions (Li & Suh, 2015; McKnight & Kacmar, 2006). However, one singular definition of credibility, in general, has yet to be defined in existing literature (Hilligoss & Rieh, 2008; Mitra et al., 2017).

The idea of credibility is usually broken down into medium credibility, message credibility, and source credibility (Ismail & Latif, 2013). For the research presented in this study, source credibility will be mainly examined since the credibility of comment authors is of interest. When it comes to sources, those that display both expertise and trustworthiness are typically considered credible (Wilson, 2007). For the target audience of this study, young adults, research has shown that this group of individuals usually make quick decisions regarding the credibility of what they consume (Sundar, 2008). Features that are typically first examined are surface features, like the design and look of a post, have an impact on how credibility is assessed (Sundar, 2008).

2.4.1 Social Media Credibility

When it comes to social media, the source of certain information can become blurred since transmitting information online usually involves several layers of sources (Mitra et al., 2017; Sundar, 2008). However, it is still important to evaluate credibility on social media before using it to make decisions (Wu et al., 2016), especially since not everything on social media is valued equally (Abbasi & Liu, 2013; Sundar, 2008). On social media platforms, information credibility is connected to the reputation of the source, the number of legitimate facts that are cited, and the mentioning of those who are considered opinion leaders (Markham, 1968; Samantray & Pin, 2019; Westerman et al., 2014). It has also been found that author credibility can be positively related to the issue of authenticity on social media (Ismail & Latif, 2013). In situations concerning science and conservation, these messages are promoted more and travel more easily through social media if there is a credible, active scientist behind these words speaking to an audience (Thaler & Shiffman, 2015).

2.4.2 The MAIN Model

One model that helps illustrate perceptions of credibility is the MAIN model, proposed by Sundar (2008). The MAIN model considers how technology may affect credibility assessments (Choi & Stvilia, 2015). This model uses heuristics to aid in understanding how technology has transformed how people perceive credibility and finds that people are implicitly more likely to trust images over text because they trigger a "realism heuristic" (Pittman & Reich, 2016; Sundar, 2008). The framework laid out in this model helps to explain and predict source credibility (Lin et al., 2016; Sundar, 2008). One finding from this model that is relevant to this study suggests that cues given by authority figures (or authority cues) provide the strongest standards for credibility research (Lin et al., 2016; Sundar, 2008). Authority figures have been

shown to influence the attitude change of others, this also extends to expert sources being viewed in a more positive light by consumers than nonexpert sources (Sundar et al., 2009). For example, a study in 2018 found that information tied to a traditional news source was seen as more credible than information on a blog, as predicted by the MAIN model (Bhandari, 2018). This led to researchers here concluding that seeing the name of a news source triggered an authority heuristic in participants which allowed them to perceive this information as more credible in these instances (Bhandari, 2018).

2.4.3 Dimensions of Credibility

In the past, credibility has been divided into smaller dimensions that work to describe the greater term of credibility. One definition of the dimensions of credibility comes from McCroskey and Teven (1999), who separate credibility into trustworthiness, competence, and goodwill (McCroskey & Teven, 1999). Another set of dimensions includes source credibility, media credibility, and message credibility (Li & Suh, 2015). However, more recent studies have divided credibility into medium dependency, interactivity, and media transparency, with medium dependency having little to no effect when it came to influencing credibility (Li & Suh, 2015). Research over the years has found that source credibility is important to consider when looking at the communication process for either persuasion efforts or general understanding (McCroskey & Young, 1981). Source credibility also has dimensions that define it. Some described dimensions of source credibility include reputation and competence (McCroskey & Young, 1981). Authority cues have also been seen to have a strong effect on perceptions of source credibility, with expert agencies being associated with the strongest/most authority cues (Lin et al., 2016).

2.4.4 Credibility, Source, and Authority

When dealing with credibility, several factors can come into play to influence whether the information will be seen as credible. For one, credibility is heavily centered around the source of a message or information (Sundar, 2008). Another finding in existing research is that authority plays a role in helping one decide what is credible (Sundar, 2008). Here, authority refers to a trusted source that stems from the power given by a title or other right (Lankes, 2008). For example, a federal governmental agency would possess some authority because of the power and title given to them by the federal government. If the source of a message or information is identified as an authority figure or expert, the authority heuristic will be triggered which ends up resonating more with younger individuals since they have most likely been taught to adhere to authority figures since a young age (Sundar, 2008). It has been found that even college students rely on their authority heuristic to judge credibility (Sundar, 2008). In general, people view those with authority as being credible (Lin et al., 2016).

Another attribute of information that helps improve credibility is to identify the source of the content, along with if the source is credible (O'Keefe, 1987; Wilson, 2007). Previous research has identified a few reasons as to why knowing the identity of a source is important for communication. Knowing a source's identity from the beginning can allow for a more efficient exchange of information and again, identity enhances source credibility which can be translated to information credibility (Ismail & Latif, 2013; Sussman & Siegal, 2003).

2.5 Instagram

People use social media platforms, like Instagram, for different reasons. Social media helps achieve a need to feel autonomous and related to society, and its use is also community-driven (Khan et al., 2014; Uhls et al., 2017). Popular platforms today include Facebook,

Instagram, and Twitter (Fuciu, 2019). Out of these platforms, Instagram is used most for image sharing and will be the platform of interest for this study. Instagram popularity is highest among younger generations and those wanting to share images (Fuciu, 2019; Tuzel & Hobbs, 2017). Approximately 40% of adults in the United States use Instagram (Pew Research Center, 2021).

2.5.1 Why Photos?

The sharing of images is more significant than the use of text when it comes to what can be processed cognitively. People tend to process pictures with more ease than they do text (Larkin & Simon, 1987). Including more pictures has been found to increase the number of viewers or readers content attracts and on the other hand, content with a larger word count led to a smaller number of viewers or readers (Wu et al., 2018), although this is not specific to Instagram content. In general, images are favored more by young adults, especially since many technology and smartphone owners/users are between the ages of 18 and 29 (Pittman & Reich, 2016; Wu et al., 2018), and this age group is also the primary users of visual-centric social media of Instagram, Snap Chat, and TikTok (Pew Research Center, 2021).

2.5.2 Instagram by the Numbers

As of 2021, 72% of people in the United States say they use social media sites (Pew Research Center, 2021), with 71% of 18 to 29-year-olds stating they used Instagram and 59% of these individuals saying they use the platform daily (Auxier & Anderson, 2021). At the beginning of the 21st century, Facebook was seen as the predominantly popular social media platform; however, Instagram has been slowly catching up (Fuciu, 2019), making it a relevant platform to study. Recent numbers have also shown that 53 million Instagram users are between 13 and 17 years old, with the average amount of time spent on Instagram per day coming in at 28 minutes per person (Fuciu, 2019).

2.6 Wildlife Selfie Phenomenon

A compulsion has developed among people to approach wildlife to take what are known as wildlife selfies, which have essentially turned animals into props. Wildlife and wildlife selfies are now seen more frequently on Instagram, making them seem approachable and less threatening to humans (Auxier & Anderson, 2021), but close encounters with wildlife impact animal welfare (Pătru-Stupariu et al., 2020; Wu et al., 2018). The act of wildlife selfies makes it difficult to keep wild animals "wild" and also works to commodify and endanger animals (Lenzi et al., 2020). These types of images are especially common among tourists, who view the act of photography as an important part of their wildlife experience (Pagel et al., 2020). In the era of social media, the demand for wildlife encounters in the wildlife tourism industry is linked to the increase in wildlife appearing online in photos and videos (Lenzi et al., 2020; Moorhouse et al., 2015).

2.6.1 What is a Wildlife Selfie?

Wildlife selfies on social media have become a recent source of interest, but what is a wildlife selfie? Generally speaking, a wildlife selfie is taken by an individual, usually a tourist, that is close enough to a wild animal that both a human and animal captured in the same frame (Lenzi et al., 2020). These images are then uploaded to social media and usually attached to hashtags (#) that link the image to keywords so they can be discovered and viewed by more users (Lenzi et al., 2020). While the act of taking a wildlife selfie is not novel, it is now more prevalent because it can be uploaded to photo-sharing sites like Facebook and Instagram (Lenzi et al., 2020).

The phenomenon of wildlife selfies has become such an issue that out of 34 billion images posted on Instagram, World Animal Protection has estimated that tens of thousands of

those are wildlife selfies (World Animal Protection, n.d.). In response to this increase, World Animal Protection has created a code that works to encourage individuals to sign a pledge stating that they will not take wildlife selfies where an animal is depicted being held or fed (Lenzi et al., 2020; World Animal Protection, n.d.).

2.6.2 Effects of Wildlife Selfies

While the act of coming in close contact with a wild animal to take a picture is harmful in itself, some effects can play out after the initial act as consequences. As of now, there are still relatively few studies that address the adverse effects wildlife selfies have on the welfare and conservation of animals (Lenzi et al., 2020). Some reports on these types of images have recorded environmental damage and wildlife harassment as some of the negative outcomes, however, this activity is still seen as growing in popularity (Pearce & Moscardo, 2015). There have even been fatalities, like falls and drownings, related to selfies (Jain & Mavani, 2017; Pagel et al., 2020) and if these fatalities themselves were not enough, the posting of these images has been shown to encourage risk-taking behavior in other individuals who view them on social media to garner attention online (Lemelin, 2006; Pagel et al., 2020; Pearce & Moscardo, 2015). After seeing an increase in these dangerous and destructive behaviors, Instagram established an advisory page to inform users about the harms that could come from animal encounters, however, these selfies are still found on the platform today (Lenzi et al., 2020).

In some national parks, visitors have been known to approach animals, like bison, with the intent of taking a photo with them (Cherry et al., 2018). About half of the reported injuries in one park from 2000 to 2015 involved photography (Cherry et al., 2018). One specific example of this occurring in 2015 involved a woman taking a selfie with a bison at the time she was injured (Cherry et al., 2018; Rogers, 2015). Ultimately, selfies with wildlife are a dangerous

activity, mainly because they require one to get close to and sometimes even turn their back on a wild animal (Cherry et al., 2018).

2.7 Gatekeeping

Gatekeeping helps users establish credibility, however, there is a lack of gatekeeping online and in social media (Ismail & Latif, 2013). Gatekeeping needs to occur more on social media because information found there affects people's lives. The process of gatekeeping has typically allowed content creators to decide what information will be released to the general public (Bruns, 2008; Westerman et al., 2014). Gatekeeping lets some information pass through the "gates" while other information is ignored.

2.7.1 Online Gatekeepers

On social media, there is a large volume of information created and distributed with few overseeing what is being created, which is cause for concern (Ismail & Latif, 2013). While there are some people online who are acting as reviewers or gatekeepers, there are not enough present that are considered professional (Li & Suh, 2015). The issue of finding online gatekeepers becomes more convoluted when looking at social media specifically. On social media platforms, the act of gatekeeping is no longer mainly performed by producers of content, but by the consumers of the content themselves (Haas & Wearden, 2003; Westerman et al., 2014). With this shift of gatekeeping to content creators, social media users must evaluate the credibility of those creating the material they are viewing, which is where source credibility theory comes into play.

2.8 Source Credibility Theory

One useful theory that helps explain credibility is the source credibility theory, which works to explain how the persuasiveness of communication is affected by the perceived

credibility of the communicator presenting the information (Abbasi & Liu, 2013; Wu et al., 2016). Previous studies applying this theory have shown that the source of online content or information influences feelings of credibility (Fogg & Tseng, 1999; Lin et al., 2016).

Source credibility can be further defined as how believable, competent, and trustworthy the source of information is, according to the person receiving the information (Bhattacherjee & Sanford, 2006; Jayawardena, 2020). Three main characteristics that contribute to source credibility are expertise (Fan & Sun, 2012; Luo et al., 2015; Pan & Chiou, 2011), trustworthiness (Levy & Gvili, 2015; Lim & Van Der Heide, 2015; Willemsen et al., 2012), and goodwill (how much the receiver thinks the creator has their best interest in mind) (Hovland et al., 1953; Lin et al., 2016a; McCroskey & Teven, 1999). All of these characteristics work together to assure an individual that the content they are viewing came from a reputable source whose information they can rely on. Within the realm of source credibility an individual's assessment of the authority, trust, and expertise of a source can all influence whether or not the information being conveyed can be believed. When a source has expertise, authority in their field, and is trustworthy, people are more likely to believe what they are being told and can even be more willing to change their behavior based on the information provided by such a source.

2.8.1 Online Sources

When it comes to online information, including social media content, the source of the information can be more difficult to identify (Sundar, 2008). This is typical because sharing information online can create several layers of sources, which can cause confusion and varying levels of credibility (Sundar, 2008). Another occurrence on social media is that the source is unknown altogether (Abbasi & Liu, 2013). Typically, with social media content, posts, and

comments, only a username is attached, and credibility is inferred from that (Abbasi & Liu, 2013).

2.8.2 Influence of Authority

Previous research has found that source credibility is not subjective, it can be conceptualized (Lin et al., 2016; O'Keefe, 1987). Conceptualized credibility as a variable can measure the believability of the author of content or communicator (Lin et al., 2016; O'Keefe, 1990). One significant influence on how credible a source of information is seen relies on authority and authority cues (Lin et al., 2016). Authority cues have been shown to influence source credibility the most (Lin et al., 2016).

2.8.3 Influence of Trust

Another factor that can have an impact on source credibility is trust. If a reader believes they are receiving information they can trust, they are more likely to deem the source it originates from as credible (Chaiken, 1980; Ismagilova et al., 2020). A trustworthy author or sender can have an impact on the source credibility of content (Hovland et al., 1953), and information is doubted less, as far as credibility is concerned, if a source gives the receiver or reader a sense of trustworthiness (Ismagilova et al., 2020; Sparkman & Locander, 1980).

2.8.4 Influence of Expertise

Expertise, as previously defined, is another factor that contributes to source credibility. Varying degrees of expertise can be perceived since the expertise of the content creator is attached to the content they create, and individuals can have a varying degree of training or expertise (Ismagilova et al., 2020; Racherla & Friske, 2012). There have been previous studies that have shown the expertise of a source of information influences the credibility of the source

and by extension the credibility of the content itself (Fang, 2014; Ismagilova et al., 2020; Lis, 2013).

2.8.5 Source Credibility and Behavior Change

Since source credibility has been demonstrated to have an impact on credibility and credibility can influence behavior change, it can be implied that source credibility can have an impact on behavior change by extension. Previous research has shown that if feelings of source credibility are present, the receiver of the content will adopt and accept the information they are exposed to (Coursaris & Van Osch, 2016; Ismagilova et al., 2020). If an individual can see the source of information they are exposed to as credible, that same individual will put in the effort and cognitive resources to take in the information they are presented with, usually with little skepticism involved (Ismagilova et al., 2020; Wang et al., 2007). Based on the theoretical framework laid out here, an author commenting on a wildlife selfie post that has more authority, trustworthiness, and expertise should be seen as having more source credibility than a commentor with less or none of these same qualities. When considering credibility, behavioral beliefs have also been shown to play a role in predicting attitudes toward information and whether this same information will be seen as credible or not (Wang & Sun, 2010). One previous study found that an individuals' opinion of credibility will affect their behavioral beliefs (Pothriattanachaikul et al., 2019).

In the case of the research for this study, a governmental agency Instagram account commenting on a wildlife selfie post should be associated with higher source credibility than another regular user who comments on the same post, which leads to three hypotheses for this study:

H1: Compared to comments from "regular" users, those exposed to comments from a governmental agency charged with wildlife protection or comments from an individual scientist will have a) weaker intentions to take wildlife selfies and b) weaker behavioral beliefs about wildlife selfies.

2.9 Elaboration Likelihood Model (ELM)

The Elaboration Likelihood Model (ELM) is another theoretical framework that is useful for this study because it examines how individuals process information and how they can be persuaded by information. Specifically, the ELM describes how people are effectively persuaded and this model allows researchers to explain what factors were able to influence how people perceived the information they were exposed to (Li & Suh, 2015; Petty & Cacioppo, 1986). This model also states that any content or information being examined could use more than one process to encourage attitude changes (Petty & Briñol, 2008). For this model and this study, attitude refers to feelings individuals hold when examining themselves, others, or issues (Petty & Cacioppo, 1986). The ELM framework works to help categorize, organize, and understand what effective persuasive communication is (Petty & Cacioppo, 1986). In addition to these functions of the ELM, this model also identifies two routes to persuasion that exist: the central and peripheral routes (Petty & Cacioppo, 1986; Wilson, 2007).

2.9.1 Central versus Periphery Routes

The two routes to persuasion in the ELM, central and peripheral, involve two different levels of elaboration and attention. In the central route, high elaboration is needed, along with a high amount of attention to assess the quality and message of content (Jayawardena, 2020; Petty & Cacioppo, 1986). On the other hand, the peripheral route only needs low elaboration and relies more on cues that are employed to persuade (Petty & Cacioppo, 1986). Additionally, the

peripheral route does not closely scrutinize the message being presented and instead uses the cues found in the message, which can include source credibility, style, or the entertainment embedded in a message (Jayawardena, 2020; Petty & Cacioppo, 1986).

The ELM has shown that cues like source credibility and message content take the peripheral route to persuasion (Jayawardena, 2020) and that a source with high credibility can be more influential to an individual when it passes through this route (Wilson, 2007). Figure 2 depicts the central and peripheral routes to persuasion as established in the ELM (Petty & Cacioppo, 1986).

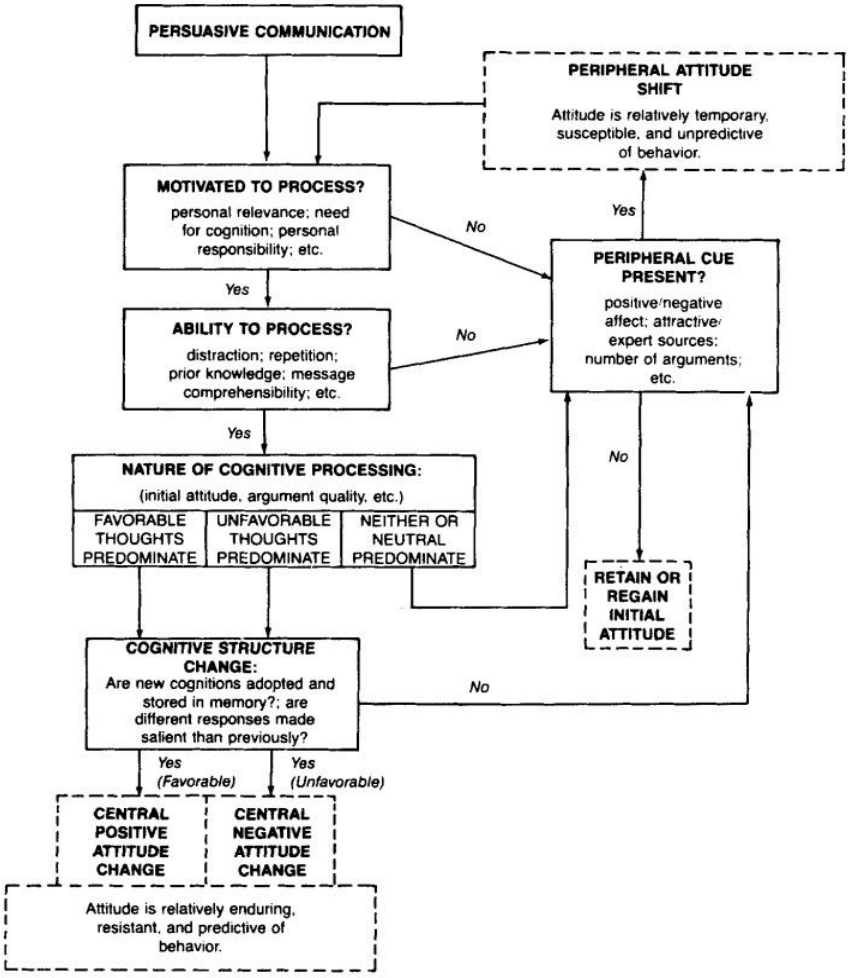


Figure 2. ELM routes to persuasion. Through central and peripheral routes. (Petty & Cacioppo, 1986).

2.9.2 Medium, Message, and Source Credibility

From the ELM, one can predict the credibility of information that appears on social media platforms through the medium, message, and source credibility. Medium credibility is the credibility associated with a certain medium (Hovland et al., 1953; Li & Suh, 2015; Metzger et al., 2003; Newhagen & Nass, 1989; Sundar & Nass, 2001), with individuals having the ability to prefer different mediums. Message credibility is the perceived credibility of the message itself, with emphasis on the accuracy and quality of the message content itself (Hovland et al., 1953; Li & Suh, 2015; Metzger et al., 2003; Newhagan & Nass, 1989; Sundar & Nass, 2001). Finally, source credibility again refers to the expertise and trustworthiness of the creator or source of the message and refers to how likely it is that the source relayed credible information in their message (Hovland et al., 1953; Li & Suh, 2015; Metzger et al., 2003; Newhagan & Nass, 1989; Sundar & Nass, 2001).

2.9.3 ELM and Familiarity

Having some sense of familiarity with content can have an impact on the persuasion of the message. Previous research has examined the moderating effects of how familiar user is with a type of product and found that the more familiar an individual is with a product can affect decision-making processes and perceptions of the product itself (Alba & Cooke, 2004; Cyr et al., 2018; Ratneshwar et al., 1987). Some studies have found that, in alignment to the ELM, familiar information and information perceived as beneficial tends to follow the peripheral route to persuasion, while less familiar information and information perceived as risky is processed through the central route (Fischer & Frewer, 2009; Garcia-Marques & Mackie, 2001). Contrary to the ELM, two studies have concluded that content found more familiar and known by an individual will utilize the central route to persuasion, while those with less familiarity and

knowledge about content will utilize the peripheral route to persuasion (Blanco et al., 2010; Cyr et al., 2018). The introduction of conflicting findings in recent years shows that there is still research to be done in the area of ELM in today's society, especially when it comes to online persuasion (Cyr et al., 2018).

This can be adapted to an individual's familiarity with wildlife species. Through activities that bring us in increasingly closer contact with animals, humans begin to develop different attitudes towards different species of animals depending on how well humans think they "know" an animal (Morris et al., 2012). This sense of familiarity with animals has led to humans believing they can sense and see human emotions in them; however, more well-known species were seen to experience more emotions than those less familiar to an individual (Morris et al., 2012). One study also found that feelings toward an unfamiliar animal started fairly neutral until people learned more about it; however, those already familiar with the species were more likely to support efforts to conserve it (Reimer et al., 2014). The more familiar people are with an animal species, the more knowledgeable they are likely to be about the animal and more in support of protecting and conserving that species, at least over an unfamiliar species. If a person has more knowledge of or familiarity with a wildlife species, persuasion will operate through the central route which will have a greater impact on the credibility and behavioral changes of a person than a wildlife species less familiar to a person. Since species familiarity could be a potential influencing factor in credibility and behavior change intentions, it was also examined as a part of this study, leading to the following hypotheses.

H2: Species more familiar to an individual will lead to a) weaker intentions to take wildlife selfies and b) weaker behavioral beliefs about wildlife selfies, compared to less familiar species.

H3: The familiarity of a wildlife species will have an interaction effect with credibility on a) intent to take wildlife selfies and b) perception of wildlife selfies.

2.9.4 ELM Postulates

In the ELM there are a series of postulates laid out that are relevant to the validity of the model itself. Postulate one states that if a person thinks certain things are good when they are bad, incorrect behaviors and disappointments will follow (Petty & Cacioppo, 1986). Postulate two is concerned with the fact that even though people want to have correct attitudes, they may not always be willing to engage in the appropriate amount of elaboration for this to occur all the time (Petty & Cacioppo, 1986). Next, postulate three says persuasive arguments, peripheral cues, and extent of elaboration affect attitude change (Petty & Cacioppo, 1986). Number four posits that trying to assess content objectively needs one to either increase or decrease the amount of scrutiny they look at an argument with (Petty & Cacioppo, 1986). Postulate five reiterates that as elaboration decreases, an individual needs to rely more on cues (Petty & Cacioppo, 1986). Postulate six states that biased factors in a message can either positively or negatively affect the processing of that message (Petty & Cacioppo, 1986). Finally, postulate seven explains that attitude changes that occur through the central route stand the test of time better than those changes achieved through the peripheral route (Petty & Cacioppo, 1986). Through all seven of these postulates, one can better understand the nuances of the ELM and how persuasive messages are utilized and processed in both the central and peripheral routes. However, for this study, the peripheral route is more relevant since this is how source credibility is processed to lead to attitude/behavior changes.

2.10 Research Question(s) / Hypotheses - Quantitative

Using the literature and research described and laid out above, this study examines the effect of source credibility on human-wildlife interaction, specifically in the form of wildlife selfies. Based on previous literature and gaps discovered there, the following research question was developed to guide research for this study.

Research Question: Does the credibility of the authors of social media comments influence audience intentions to change their behavior in human-wildlife interactions?

After further examination of the topics of credibility and behavior change as it relates to social media users and wildlife selfies, it was decided that two users with different levels of authority and trustworthiness would be examined. A governmental agency can be said to have a high level of authority and expertise, so they were chosen to represent a high authority commentor and a regular user not familiar with any specific individual can be said to have inherently low authority and expertise in the eyes of a stranger, so a regular/unfamiliar user was chosen to represent a low authority commentor. Both types of users will be used to comment on a wildlife selfie post to measure feelings of credibility and behavior change intention in individuals. From these stipulations, the three hypotheses further driving this study were formed.

Hypothesis 1: Compared to comments from "regular" users, those exposed to comments from a governmental agency charged with wildlife protection or comments from an individual scientist will have a) weaker intentions to take wildlife selfies and b) weaker behavioral beliefs about wildlife selfies.

Hypothesis 2: Species more familiar to an individual will lead to a) weaker intentions to take wildlife selfies and b) weaker behavioral beliefs about wildlife selfies, compared to less familiar species.

Hypothesis 3: The familiarity of a wildlife species will have an interaction effect with credibility on a) intent to take wildlife selfies and b) behavioral beliefs about wildlife selfies.

A survey and mock Instagram posts with comments will be employed to measure and evaluate these hypotheses. The conceptual model for the interplay between the variables and hypotheses for this study is shown in Figure 3.

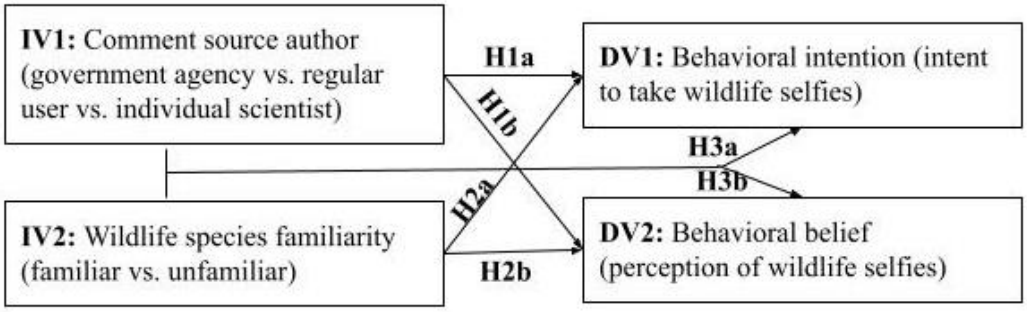


Figure 3. Conceptual model. Independent and dependent variables studied and how they are related via the various hypotheses proposed to research.

CHAPTER 3. METHODS

In order to investigate whether Instagram users' intentions to take wildlife selfies could be affected by viewers' familiarity with the species and comments discouraging such behavior from authors of varying levels of credibility, an online experiment was used. To conduct the study, Qualtrics, a secure online questionnaire platform, was used to collect responses from a convenience sample of 448 college students at Colorado State University.

3.1 Design and Hypotheses

To test these hypotheses, a 3 (government commenter vs. individual scientist commenter vs. regular user commenter) x 2 (familiar species vs. unfamiliar species) between-subjects factorial design was used. An additional control group was also implemented where no stimuli was presented to participants to better understand feelings and intentions towards wildlife selfies that already exist among this population. A photo depicting a species native to Colorado, the moose (Reddit, 2021), was used as the familiar animal species while a more exotic animal, the kangaroo (Barnes, 2021), as used as the unfamiliar animal species to begin, in the pretest and pilot study. This design examines 1) the effect of comment author credibility, 2) the effect of species familiarity, and 3) the interaction between species familiarity and comment author credibility on behavioral beliefs about wildlife selfies and intentions to take these photos. To make sure participants follow correct procedures, all treatment groups were given the same information regarding this study.

Participants were recruited mainly through the online system SONA that is maintained by the Department of Journalism and Media Communication at Colorado State University. This pool contains students from a variety of majors and levels (freshmen to seniors). Additionally,

due to too little participation by solely using the SONA system, in-person recruitment occurred in classrooms comprised of undergraduate students at Colorado State University. From here, participants were given a link to the Qualtrics survey where they answered a short series of initial questions, including those referring to Instagram usage and deference to authority, and were then randomly assigned to one of seven treatment groups. They were then exposed to the mock Instagram post and comment assigned to their specific group (or no stimuli if they were assigned to the control group), and then answered a series of questions designed to measure behavioral beliefs of wildlife selfies, behavioral intentions regarding their intent to take wildlife selfies, demographics, and risk perceptions associated with wildlife selfies. Manipulation checks were also included, to ensure varying levels of credibility and species familiarity were correct.

Experimental designs have been utilized previously in communication research to test the effects of credibility (Gotlieb & Dubinsky, 1991; Harmon & Coney, 2018; Hastak & Park, 1990; Li & Suh, 2015; McCroskey & Teven, 1999; Wertgen & Richter, 2020) and species familiarity (Borgogno et al., 2015; Reimer et al., 2014). Experimental designs have been one of the most used methods in quantitative research since the 1990s (Trumbo, 2004). Experimental designs work to detect if there is a relationship between variables being studied and if the relationship is considered causal (Chiang et al., 2015). To evaluate the presence of a relationship through an experiment, researchers manipulate independent variables systematically while also controlling for extraneous variables (Chiang et al., 2015). This design enables researchers to make inferences on causal relationships when examining and statistically analyzing data.

Along with this, surveys have been previously used in studies to measure the effects of source credibility (Gotlieb & Dubinsky, 1991; Harmon &Coney, 1982; Hastak & Park, 1990; Li & Suh, 2015; McCroskey & Teven, 1999; Wertgen & Richter, 2020) and familiarity (Borgogno

et al., 2015; Reimer et al., 2013), participant demographics, and risk perceptions (Mann et al., 2004; Slovic et al., 1985; Trumbo et al., 2016). Based on this, a survey was created to measure the effect of source credibility and species familiarity on participants' behavioral beliefs of and intentions to take wildlife selfies. There are some limitations involved when employing an experiment using a self-administered survey. Participants could choose to not complete the survey (Nayak & K A, 2019) or they could provide inaccurate answers by choosing the same option for every question (Nayak & K A, 2019). To mitigate these potential limitations, responses were inspected for the time it took to complete them, to look for speeding relative to the median and mean completion time. Questions were also created to request a response, but not require it.

3.2 Instruments and Variables

This experiment collected data through a survey containing scales from existing literature to measure the dependent variables. As listed in Table 1, the independent variables of this study were species familiarity (the animal's species depicted in an Instagram post) and the author of the comment on the original Instagram post. The dependent variables were beliefs about taking wildlife selfies and intention to take wildlife selfies. Manipulation check questions measured familiarity with the wildlife featured in the image and credibility of the comment author subjects are exposed to in their condition. In addition to measuring the dependent variables, the survey also gathered anonymous data on demographics, participant Instagram usage/behaviors, deference to authority, and risk perceptions associated with wildlife.

Table 1. Variables

Independent Variables	Dependent Variables	Attribute Variables
Comment author credibility: High trust, high authority (government) vs. high trust, low	Behavioral intention: Intent to take wildlife selfie	Demographics

authority (scientist) vs. low trust, low authority (regular)		
Wildlife species familiarity: higher (moose), lower (monk seal)	Behavioral beliefs: Perceptions of wildlife selfies	Deference to authority
		Instagram behaviors (usage, selfies)
		Risk perceptions associated with the wildlife seen in their assigned condition

3.2.1 Independent Variables

The independent variables in this experiment included comment author credibility and the animal species depicted in the photo. There were three different commenters with varying degrees of credibility used in this study: a governmental agency, an individual scientist, and a regular user. Based on source credibility literature, presented in Chapter 2, there were some defining characteristics that were used to characterize each of the three comment authors being used in this study. Two of these attributes, that were compared in this study, are trust (Bhattacherjee & Sanford, 2006; Jayawardena, 2020; Levy & Gvili, 2015; Lim & Van Der Heide, 2015; Willemsen et al., 2012) and authority (Bhandari, 2018; Lin et al., 2016a; Sundar, 2008). When considering governmental agencies, they are being seen as more trustworthy over time (James & Van Ryzin, 2017) and also typically associated with a high authority level due to the fact that they are given power by the federal government (Lankes, 2008; Lin et al., 2016a). From this information, a governmental agency commenter represented a high trust, high authority commenter for this experiment. For the individual scientist, they were also seen as having high levels of trust among the general public when discussing scientific topics (Peters, 2008; Yamamoto, 2012); however, since this individual was not associated with or appointed by a larger group, their degree of authority would be fairly low (Lankes, 2008; Lin et al., 2016a; Yamamoto, 2012). Due to this information, an individual scientist commenter represented a high

trust, low authority commenter. Finally, when examining a regular user, they can be seen as less trustworthy since they are an unknown and not credible person, and their lack of association with or appointment by a larger group would cause less authority to be experienced for this individual. Based on this, a regular user commenter on a wildlife selfie post represented a low trust, low authority commenter.

Additionally, there were two levels of species familiarity examined: a familiar species vs. an unfamiliar species. The familiar species included in a wildlife selfie image is assumed to be widely known to participants, while the unfamiliar species included a wildlife selfie with an animal assumed to be widely unknown to participants. The species utilized for this experiment will be discussed in further detail later in this chapter.

All other aspects of the mock posts remained the same between the different versions, apart from the animal depicted in them and the username of the user commenting in response to the post.

3.2.2 Dependent Variables

Then dependent variables in this study were behavioral beliefs and behavioral intentions of participants. Behavioral beliefs referred to the perceptions participants hold about wildlife selfies, while behavioral intentions described participants' intent (or not) to take wildlife selfies in the future. Both of these dependent variables were measured using questions and scales adapted from previous literature.

3.3 Stimulus Material Content

To effectively test for and measure the variables in this study, questions were included that addressed behavioral beliefs, behavior change intention, deference to authority, wildlife risk perception, Instagram usage, and other demographics. In addition to these questions

manipulation check questions were also presented to participants. The basis for posing these particular questions was to provide answers for the hypotheses and research question driving this study, based on information used and found in previous studies, as laid out in Chapter 2.

3.3.1 Behavioral Beliefs

To measure behavioral beliefs of participants, their perceptions of wildlife selfies were assessed and measured. To do this, one question with six items was developed for the purpose of this study to measure participants' perceptions of wildlife selfies. The items in this scale included descriptions and characteristics that have been used in previous research of human perception towards wildlife or other topics: thrilling (Leong, 2009), harmless (Hartel et al., 2015), risky (Decker et al., 2012), create memories (Hanisch et al., 2019), appreciation (Ngonidzashe Mutanga et al., 2015), and perception by others (Travers et al., 2011). All six items were measured on a 5-point Likert scale (1 = strongly disagree, 5= strongly agree; see Table 2).

Table 2. Wildlife Selfie Behavioral Beliefs Scale

Taking photos showing me close to wildlife…
Is generally harmless to wildlife.
Is unlikely to be risky to me.
Is worth it to create memories of my experience.
Is thrilling.
Is important to show my appreciation for wildlife.
Is important for how I want to be perceived by others.

3.3.2 Behavioral Intention

Two questions were employed to accurately measure the future behavior intentions of participants when it comes to their wildlife selfie activity. The first question was adapted from Graberg & Holmberg (1990) and the second was adapted from two studies that analyzed behavioral intentions (Ajzen, 1980; Gotlieb & Dubinsky, 1991). The specific questions for

behavioral intention employed in this experiment can be seen in Table 3. Responses to these questions were recorded on a 5-point Likert scale (1 = very unlikely, 5 = very likely).

Table 3. Behavioral Intention Scales

Do you think you will take a wildlife selfie (like the one you just saw) in the future?
How likely is it that you will approach wildlife in the future to take a picture?

3.3.3 Manipulation Check

To ensure that source credibility and species familiarity were both effectively manipulated in the experiment, manipulation check scales were included in the Qualtrics questionnaire. To check the manipulation of source credibility, three questions from previous literature were used to measure credibility (Conrad et al., 2008; Li & Suh, 2015; Wertgen & Richter, 2020). The first question was measured on a 5-point Likert scale (1 = not at all credible, 5 = extremely credible; see Table 4) and the last two questions were measured on a different 5-point Likert scale (1 = very low, 5 = very high; see Table 4).

There were an additional two questions, adapted from previous literature (Borgogno et al., 2015; Reimer et al., 2014), included to assess the manipulation of species familiarity in this experiment. Both questions were recorded on a 5-point Likert scale, however the first scale (1 = not familiar at all, 5 = extremely familiar; see Table 5) did vary from the second scale (1 = never, 5 = I frequently encounter this animal; see Table 5).

Participants assigned to the control group did not answer these manipulation check questions since they were not exposed to a manipulation, and it would have been unnecessary and confusing to have these participants answer manipulation check questions.

Table 4. Credibility Manipulation Check Scales

In general, I find the information in the Instagram comment I read to be…
How would you rate the authority of the author of the comment you previously read?
How would you rate the trustworthiness of the author of the comment you previously read?

Table 5. Species Familiarity Manipulation Check Scales

How familiar are you with the animal in the photo you just saw?
How often have you seen this animal (from the photo) in person?

3.3.4 Deference to Authority

To assess how likely participants are to follow or listen to authority figures, a two-item scale measuring deference to authority (Runge et al., 2018) was included in the questionnaire. Responses to this scale were recorded on an 11-point Likert scale (1 = do not agree at all, 11 = agree very much; see Table 6).

Table 6. Deference to Authority Scale

Those with authority know what is best for the public.
Those with authority should do what they think is best, even if they have to persuade people that it is right.

3.3.5 Wildlife Species Risk Perception

Risk perception has been shown to influence decision-making behaviors (Sitkin & Pablo, 1992), like behavior change which can be measured through behavior change intent. Because people have different risk perceptions for various types of wildlife, this variable was measured to use as a control variable or for exploratory analyses. For this reason, a scale measuring the risk perception of participants was included in the questionnaire. The particular scale included in this study was used in past research (Evans, 2018), and was adapted to better

suit this study (it included four items). Responses were recorded on a 5-point Likert scale (1 = not risky at all, 5 = extremely risky; see Table 7).

Table 7. Risk Perception Scale

How risky do you believe it is to approach wildlife?
How risky do you believe it is to take a wildlife selfie?
How risky is it to not move away from wildlife that is approaching you?
How risky do you believe it is to take a photo of someone else approaching wildlife?

3.3.6 Demographics and Instagram Usage

To gain a better understanding of participants' backgrounds, a series of demographic questions were given to participants at the conclusion of the survey. Some questions asked for general information, like age, gender, and political affiliation. The rest of these questions were more specific to participants' Instagram usage and their history/experience with selfies.

3.4 Stimulus Materials

3.4.1 Comment Authors and Usernames

When it comes to the commenters on the posts, they were either a governmental agency, an individual scientist, or a regular user. The governmental agency used in this study was fictitious and was created solely to be used in this survey. The decision was made to create a fictitious agency as it would help eliminate preconceived notions associated with existing governmental agencies and thus help reduce confounding variables in the study. The name of the agency created was the U.S. Wildlife Conservation Agency, and a short summary of this agency's role was provided to treatment groups 1 and 2 prior to their exposure to a mock Instagram post with this agency as the commenter. The statement provided stated: "The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the

conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations." The username for the governmental agency commenter appeared as "USwildlifeconservationagency" since the Instagram usernames associated with real government agencies typically spell out the complete name of the agency. The commenter used for treatment groups 3 and 4 was defined as a regular user with a geographic proximity to participants. In order to link the user with participants geographically a reference to the state of Colorado was included in the commenter's username, "COnative", in order to connect the participants slightly with the regular user, but not enough to induce feelings of peer pressure. Finally, an individual scientist was used as the commenter on the wildlife selfie post for both group 5 and 6 and the username associated with the comments on these posts helped queue users into the background/profession of this commenter and used a more gender-neutral name, "WildlifeBiologistSam." A similar descriptive statement, like that included for treatment groups 1 and 2, was included with treatment groups 3, 4, 5, and 6.

3.4.2 Familiar and Unfamiliar Species

Given the participant population attended Colorado State University, it was assumed they would be familiar with native Colorado wildlife (like the moose). Additionally, the animal species used in the mock post depicting an unfamiliar animal was a kangaroo because of its lack of regular occurrence in the United States, except in a zoo setting, and the assumption that residents of Colorado would be less familiar with this species. Due to the prevalence of moose in Colorado ecosystems and potentially in the news, there may be some heightened risk associated with this species that may not translate to the other species used in this study, a kangaroo. To have these species on a more equal risk level, an image of a juvenile moose was

selected to be used in comparison to the kangaroo. However, risk perception was measured for both species in the questionnaire and could be used in data analysis as a control variable if needed. To additionally control for some potential confounding variables, images were used that depicted both species in similar backgrounds and in the same orientation/plane as the human also depicted in each image.

3.4.3 Comment Message

To create an effective message to present to participants as a response to the original wildlife selfie post, additional research on the use of hashtags in social media messages and behavior change messaging was conducted. In general, a hashtag is a word or phrase following the pound sign that is implemented on social media platforms for the purpose of connecting posts referring to the same topic, theme, movement, or event (Bruns & Burgess, 2011; Enli & Simonsen, 2018; Saxton et al., 2015). When used in social media messages, hashtags can make messages clearer and can create a community around the topic or theme being mentioned (Potnis & Tahamtan, 2021; Saxton et al., 2015). In previous research, hashtags that were movement-specific were considered more memorable and effective than generic ones when included in messages (Potnis & Tahamtan, 2021). Since the inclusion of hashtags occur regularly on Instagram and because they will make the experiment feel more realistic, they were included in the message presented to participants. The movement-specific hashtags included at the end of the comment post were #stopwildlifeselfies and #keepyourdistance, since these phrases relate directly to wildlife selfies and the fact that one must be close to an animal to take a selfie with it.

Concerning the main language used in the comment message, behavior change messaging has been studied previously, especially as it related to wildlife conservation (Cheng et al., 2011; Gifford & Comeau, 2011; Monroe, 2003; Obermiller, 1995; Schultz, 2011; Winkler-Schor et al.,

2020). Message framing is the manipulation of how one perceives the benefits and costs of behaviors (Cheng et al., 2011). When discussing conservation or environmental sustainability behaviors, there are typically two types of framing that occur: gain and loss framing (Cheng et al., 2011; Gifford & Comeau, 2011). Messages that focus on singular, achievable tasks or behaviors have been shown as more likely to succeed, while generic claims to "save the planet" are less effective (Schultz, 2011). Messages that incorporate a motivational element (like self-interest) are also shown to be more effective (Schultz, 2011; Stern, 2000). Based on this previous research, the message implemented for this study included loss framing through a single, achievable task (not taking a wildlife selfie) and also referenced self-interest (wildlife selfies can harm you). So, the specific messaging included as the comment associated with the wildlife selfie picture was, "Wildlife selfies can harm you. Don't take wildlife selfies, take your pictures from further away! #stopwildlifeselfies #keepyour distance." This message was the same for every commenter/treatment group.

3.5 Data Collection

To test the effect of different comment authors and species depicted, an experiment was conducted online using the Qualtrics system. A 3 x 2 between-subjects design was used that randomly assigned participants to one of seven treatment groups. Qualtrics was used to create the survey for this study and stored/recorded participant responses. Participant recruitment occurred through the SONA system and in-person recruitment, which linked participants to the Qualtrics survey. Once all participant data was collected, it was exported into a file (.sav) that was imported into the statistical program SPSS for data analysis. After a one-year period, upon the completion of this thesis, the data collected will be destroyed. Until that point, data will be

saved on a password-protected computer with no identifying information of participants being saved and access to this data is only given to researchers connected to this study.

3.5.1 Pretest and Pilot Study

Before the official survey was launched to collect data, a pilot study and pretest were conducted. The pretest was conducted to make sure both familiarity and credibility were correctly varied for each treatment group. This specific survey randomly assigned participants to one of seven treatment groups, with groups 1 through 6 being shown an Instagram post that has been commented on by one of three authors and group 7 being the control group exposed to no Instagram post or comment. Participants then answered manipulation check questions for both credibility and familiarity, as well as an additional demographic questions about the participants' age. The full pretest survey can be seen in Appendix B. Participants for the pretest were selected friends and family, with an emphasis on reaching those who are undergraduate students not attending Colorado State University.

Additionally, a pilot study was conducted as well. The pilot study was conducted to verify the time it takes to complete the survey in addition to gaining insight into the clarity of the survey. For this reason, the pilot study consisted of the same flow and questions as the official survey, as seen in Appendix A. Participants for the pilot study consisted of undergraduate students from two Journalism and Media Communications classes at Colorado State University, who were not included in the participant pool for the official survey. Following the implementation of the pilot study and pretest, initial statistical analyses were conducted.

3.5.2 Pilot Study and Pretest Results

The pretest was emailed to 30 participants, mainly friends and family, between April 10 and 15, 2022. After removing incomplete responses from the data set, 25 participants completed

the survey, leading to a response rate of 83.33%. Four participants were randomly assigned to treatment group 1, three participants each to treatment groups 2 and 3, four participants were assigned to group 4, three participants were assigned to group 5, four participants were assigned to group 6, and four participants were assigned to group 7 (the control group). A statistical analysis was subsequently conducted on the pretest data to assess the manipulation checks implemented in the survey. To analyze the manipulation check for familiarity and credibility and to examine if there were any differences between treatment groups and independent variables, two one-way ANOVA tests were run. There was no statistical significance of the familiarity manipulation check on comment author credibility, $F(2, 18) = 2.388$, $p = 0.126$. There was no statistical significance of the familiarity manipulation check on species familiarity, $F(2, 18) = 0.100$, $p = 0.756$. There was no statistical significance of the credibility manipulation check on comment author credibility, $F(2, 18) = 1.052$, $p = 0.374$. There was no statistical significance of the credibility manipulation check on species familiarity, $F(2, 18) = 1.373$, $p = 0.260$.

The pilot study was emailed out to 71 undergraduate students from two journalism and media communications classes at Colorado State University between April 10 and 15, 2022. After removing incomplete responses from the data set, 64 participants completed the survey, leading to a response rate of 90.1%. Nine participants were assigned to treatment group 1, nine participants were assigned to treatment group 2, nine participants were assigned to treatment group 3, ten participants were assigned to group 4, ten participants were assigned to group 5, nine participants were assigned to group 6, and eight participants were assigned to group 7 (the control group). Again, a statistical analysis was conducted on the pilot study data to assess the main effects and interaction effects between the independent and dependent variables, as well as

the manipulation checks for familiarity and credibility. A two-way MANOVA test was run to analyze the main effects and interaction effects between the independent and dependent variables. There was no statistically significant main effect of credibility on the combined dependent variables, $F(4, 98) = 0.390$, $p = 0.815$, *Wilks'* $\Lambda = 0.969$. There was no statistically significant main effect of familiarity on the combined dependent variables, $F(2, 49) = 0.304$, $p = 0.739$, *Wilks'* $\Lambda = 0.988$. There was no statistically significant interaction effect between credibility and familiarity on the combined dependent variables, $F(4, 98) = 0.487$, $p = 0.738$, *Wilks'* $\Lambda = 0.961$. A one-way MANOVA was run to analyze the manipulation checks for familiarity and credibility and to examine if there were any differences between treatment groups and independent variables. There was a statistically significant difference in credibility based on the credibility of comment author, $F(4, 96) = 2.612$, $p = 0.040$, *Wilks'* $\Lambda = 0.813$. There was no statistically significant difference in familiarity based on the familiarity of the wildlife species, $F(2, 48) = 0.309$, $p = 0.736$, *Wilks'* $\Lambda = 0.987$.

After analyzing the results from both a pilot study and pre-test, it was found that there were no significant main effects, interaction, or manipulation checks. Due to these results and comments received from participants after initial implementation of the survey, several changes were made before the survey was released for official/main data collection. To better draw attention to the comment author being utilized in each treatment group, a brief explanation of the user was included before each mock Instagram post, similar to the statement provided for the fictitious governmental agency as explained previously. The informative statement for the regular user, COnative, read "COnative is a regular Instagram user who resides in the state of Colorado. This user is not professionally related to the wildlife conservation field or any other organization that deals with this field." Additionally, the informative statement for the scientific

user, WildlifeBiologistSam, read “Sam is a wildlife biologist who works professionally in the wildlife conservation field. However, this is their personal social media account unrelated to a wildlife conservation organization.” Again, for reference, the informative statement included with comments from the fictitious government agency, USwildlifeconsevationagency, read “The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations.”

Along with the addition of informative statements to better define commenters to participants, the image included depicting an unfamiliar species was also modified. Feedback provided with the pilot study indicated that participants were under the impression that the kangaroo depicted looked out of place, not in its natural habitat, and even photoshopped (even though it was not). For these reasons the image of an unfamiliar species was changed to that of a monk seal on a beach. This photo was chosen because it clearly showed the animal in its natural habitat, with no potential for looking photoshopped or like it was taken in a zoo setting. Although this change did eliminate the similar background and framing that occurred with the previous kangaroo photo (when compared to the familiar moose photo), this particular image provided a more exotic and unfamiliar feel. These two main changes to the survey were decided to be enough of a change to draw attention to the different variables that were being manipulated, in order to better manipulate comment author credibility and species familiarity. After these changes were included in a new survey template, the main/official survey was released on SONA to collect final results.

3.5.3 Sample and Recruitment

The convenience sample for this study was comprised of 307 undergraduate students from Colorado State University. To access these participants, the system SONA was used in conjunction with in-person recruitment. SONA was used to recruit undergraduate students at Colorado State University enrolled in Journalism and Media Communication classes to participate in online surveys in exchange for extra credit. For their participation in this study, participants received extra credit as determined by their instructor. Since this group of participants came from a specific group of accessible students, the participant pool is a convenience sample.

3.5.4 Data Collection Procedures

To collect data for this study an experiment was conducted through the distribution of a questionnaire created using the Qualtrics system. Once the questionnaire was created it was made public with the link to access it emailed out to students registered with the SONA system at Colorado State University and those students recruited in-person. The survey was open and available for students to submit their responses for approximately 4 weeks. Data collected is anonymous with no identifying factors linking participants to their responses. Once the data was collected it was stored on a password protected computer, no participant names or other personal information were collected, and only the researcher will have access to the data. After the 4-week period of data collection was over, the data was analyzed using the statistical program SPSS to obtain measures of the dependent variables in the study in order to answer the research question and address the hypotheses driving this study.

Once a participant clicked on the link and entered the survey, they were shown an informed consent message and asked to consent to participating in the study. If the participant

agreed to participate, they continued on with the survey and if the participant declined to participate, they were taken to the end of the survey with no information collected. For those participants who agreed to participate they answered questions regarding Instagram use, deference to authority, and familiarity manipulation check questions and were then randomly divided into one of seven treatment groups, as determined by the randomization function in Qualtrics. Figure 4 depicts the flow the questionnaire followed, including the randomization into seven treatment groups and what each treatment group was shown. Figures 5-10 show the specific mock Instagram posts that was presented to participants in each treatment

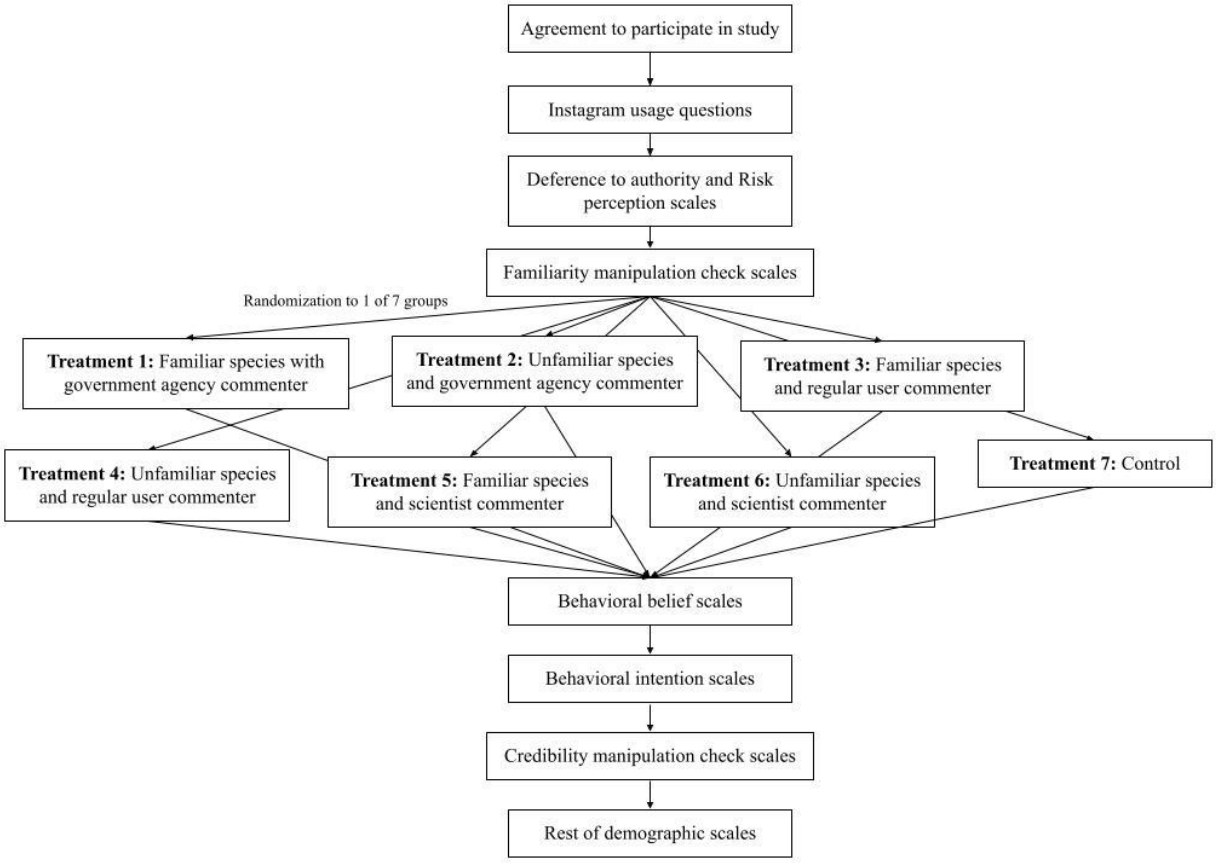
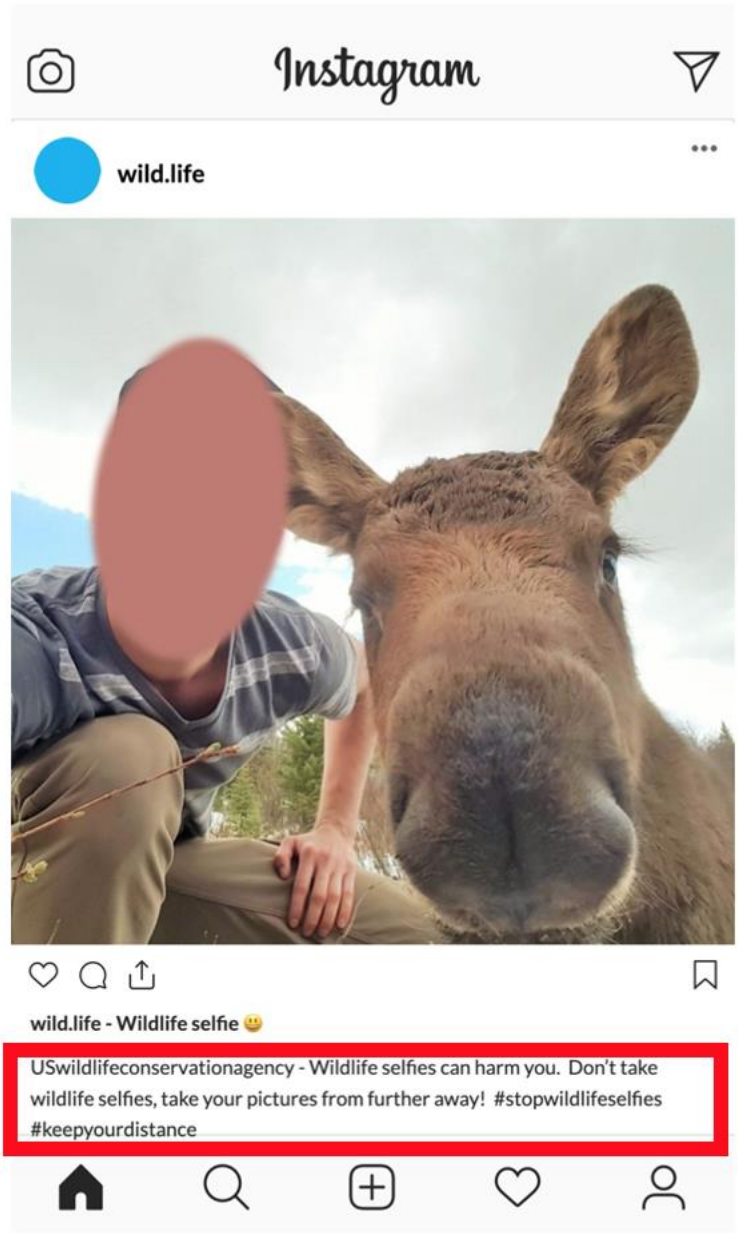


Figure 4. Flow of Qualtrics survey

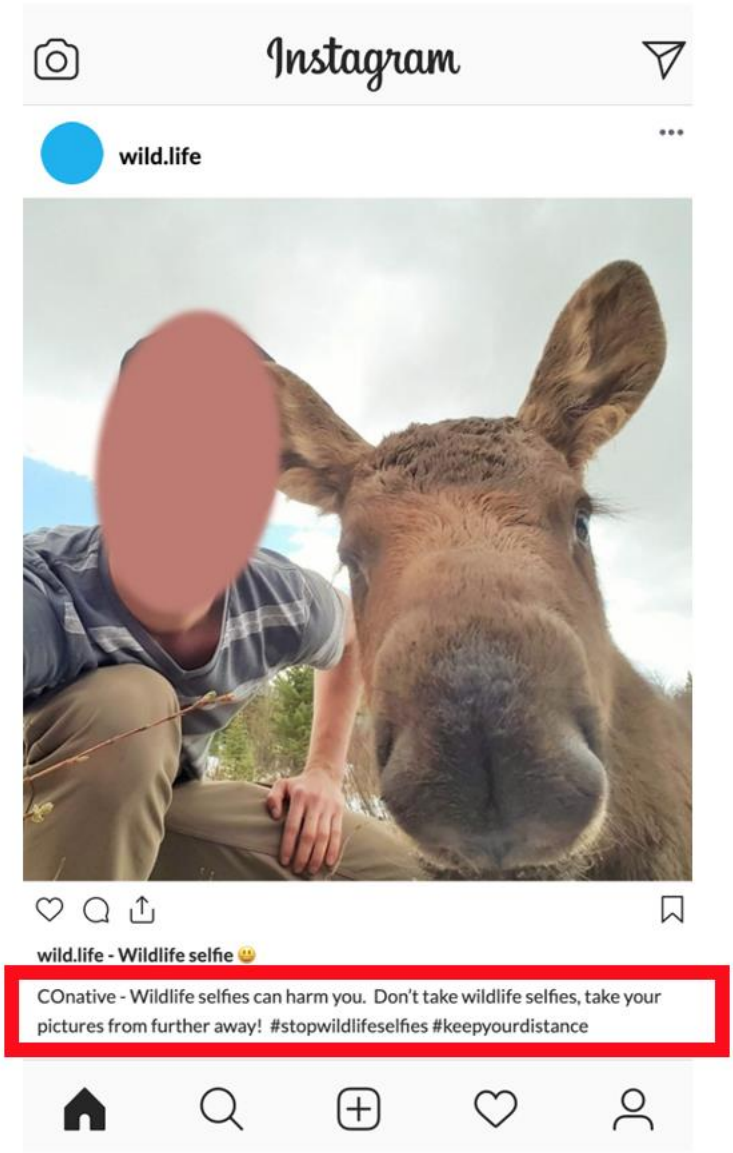


"The U.S. Wildlife Conservation Agency is a federal governmental agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations."

Figure 5. Post for treatment group 1 – familiar species and government agency commenter with agency description

"The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations."

Figure 6. Post for treatment group 2 – unfamiliar species and government agency commenter with agency description

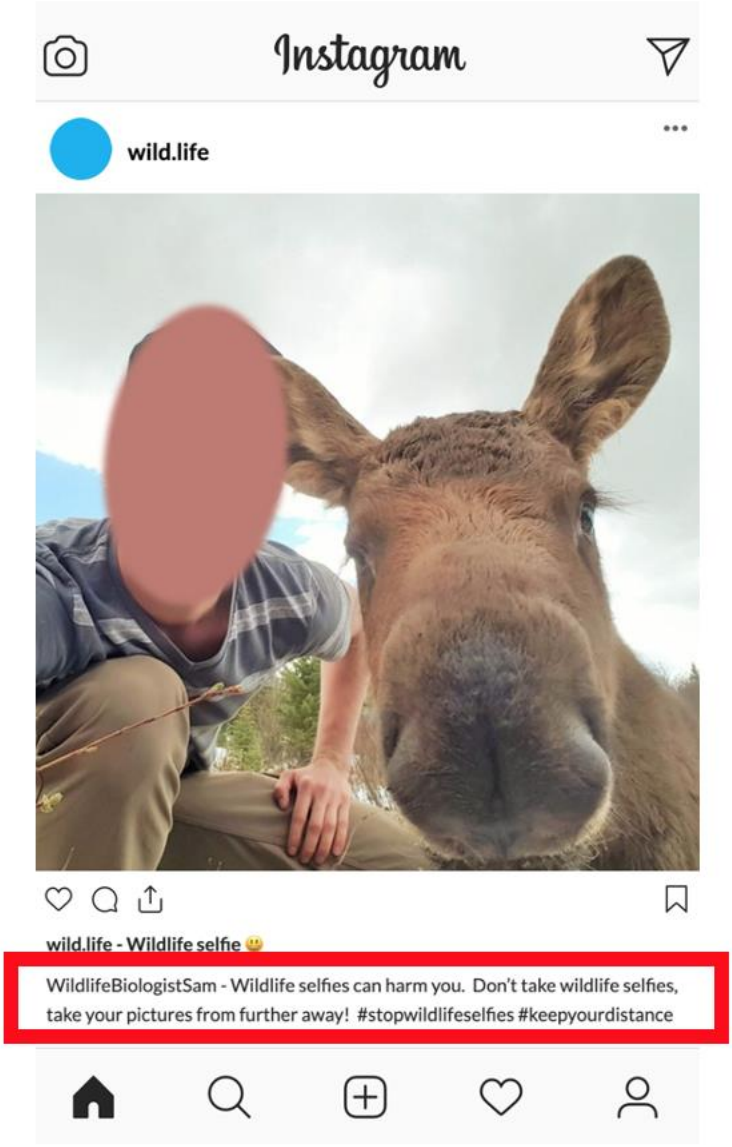


"COnative is a regular Instagram user who resides in the state of Colorado. This user is not professionally related to the wildlife conservation field or any organization in this field."

Figure 7. Post for treatment group 3 – familiar species and regular user commenter with commenter description

"COnative is a regular Instagram user who resides in the state of Colorado. This user is not professionally related to the wildlife conservation field or any organization in this field."

Figure 8. Post for treatment group 4 – unfamiliar species and regular user commenter with commenter description



"Sam is a wildlife biologist who works professionally in the wildlife conservation field. This is a personal social media account unrelated to a wildlife conservation organization."

Figure 9. Post for treatment group 5 – familiar species and scientist commenter with scientist description

"Sam is a wildlife biologist who works professionally in the wildlife conservation field. This is a personal social media account unrelated to a wildlife conservation organization."

Figure 10. Post for treatment group 6 – unfamiliar species and scientist commenter with scientist description

To control for confounding variables, the text of each comment remained the same, the only thing that changed between treatment groups is the name of the user commenting on the post and which animal species they are shown. The treatment group each participant was assigned to was randomized via the randomization function in Qualtrics.

Once the survey was completed, participants were shown a screen thanking them for their participation and indicating that the survey is over, as well as a statement informing participants that the posts and comments they were shown were fictitious. The complete questionnaire can be found in Appendix C.

3.6 Validity and Reliability of the Study

3.6.1 Reliability

To maintain reliability in this study, identical surveys were given to each participant. Each participant answered the same set of questions after seeing a mock Instagram post, regardless of which one of seven treatment groups they were assigned to. The other aspect of this study that increases the reliability, is the use of reliable questions and scales from existing literature. The questions included to measure credibility, behavioral belief, behavioral intention, animal familiarity, deference to authority, Instagram behaviors, and risk perception have been adapted from previously existing literature.

3.6.2 Internal Validity

In order to maintain internal validity with this study, possible moderators and mediators were also measured. Demographic questions including those about age, gender, political affiliation, and Instagram usage could reveal moderators or mediators at play in this study that could have some effect on dependent variables. Also, the sample of participants is a relatively homogenous group of students from CSU. It can also be assumed that most college students are familiar with or use Instagram, which also increases the internal validity of this study.

3.6.3 External Validity

This study has limited generalizability due to the fact that the sample size is relatively small, and the population being recruited from was also limited to students attending Colorado

State University and enrolled in the SONA system. However, the sample that was examined is typical; there is no reason to believe that participants in this study have different views on Instagram credibility than other college students in the United States.

3.6.4 Ecological Validity

When asking the questions laid out in the survey for this study, the ecological validity of the study is reduced because participants might not think about this topic much outside of the study context. Having them reflect on a topic like this can get to real things that impact them and they will be aware they are participating in a study.

CHAPTER 4. RESULTS AND ANALYSIS

To statistically analyze my data, two-way MANOVA tests were conducted using SPSS. Correlations and descriptive statistics were also obtained from SPSS. Prior to conducting any statistical analysis, I was able to make some predictions as to the expected outcomes of my study. I believed a governmental agency as comment author would be seen as more credible and lead to more behavior change intention than an individual scientist commenter or a "regular" user author. Additionally, I believed there would be an interaction between credibility and behavior change intention regardless of comment author, however, I predicted this interaction would be greater or more significant with governmental agency authors as opposed to "regular" user authors. I also predicted that animal species familiarity will impact behavior change intention in participants. I believed the more familiar a participant is with a species; the more behavior change intention will occur.

After data was collected, the statistical program put out by IBM, SPSS was used to analyze the data in order to answer the three hypotheses posed in this study. First, descriptive statistics were gathered for all independent, dependent, and attribute variables. Reliability tests were utilized for all measurement scales to ensure questions accurately measured what they were supposed to. To answer the hypotheses for this study, a two-way MANOVA was run. This analysis aids in reporting the main effects of credibility and familiarity and also provides results of the interaction effect on both credibility and familiarity individually. A two-way MANOVA is an extension of a two-way ANOVA analysis that can examine two independent variables and can also provide evidence of an interaction occurring between independent and dependent variables (Laerd Statistics, 2022a). These tests address H1a, H1B, H2a, H2b, H3a, and H3b. To

analyze the manipulation check questions for this study, a one-way MANOVA was run to see if there were differences between conditions/treatment groups and the independent variables of source credibility and familiarity (Laerd Statistics, 2022b).

Wilks' Lambda (Λ) was used in the reporting of statistical results as is the most commonly used statistic when reporting results from multivariate tests (Laerd Statistics, 2022b). The Wilks' Lambda variable when used in MANOVA tests works to measure group mean differences for dependent variables and how well functions are able to separate occurrences into groups (IBM, 2021). The smaller the value of Wilks' Lambda, the greater the ability of the function to discriminate (IBM, 2021). For these reasons, the Wilks' Lambda (Λ) value was used in the reporting of results for this study.

4.1 Results

4.1.1 Participants

The final/official survey was started by 307 undergraduate students at Colorado State University, who were reached through the SONA system and in-person recruitment on campus. After removing all data entries that were incomplete, 268 remained and were used for the analyses. Forty participants were assigned to treatment group 1, 39 participants were assigned to treatment group 2, 39 participants were assigned to treatment group 3, 38 participants were assigned to treatment group 4, 37 were assigned to group 5, 41 were assigned to group 6, and 34 were assigned to group 7 (the control group). A majority of respondents identified themselves as female (59.1%, n = 159) rather than male (35.3%, n = 95), with a smaller percentage of respondents identifying themselves as non-binary, self-described, or prefer not to say (5.1%, n = 14). Most respondents were between the ages of 18 and 24 years old (93.3%, n = 251), with the next most frequent age range being between 25 and 34 years old (3.7%, n = 10) and only one

participant above the age of 65 (0.4%, $n = 1$). For political affiliation, a majority of participants identified themselves as being Democrats (40.5%, $n = 109$), followed by Independents (28.6%, $n = 77$), those who preferred not to specify (11.9%, $n = 32$), Republicans (11.5%, $n = 31$), and finally those who selected "Other" (7.1%, $n = 19$).

4.1.2 Manipulation Checks

To check the manipulation of independent variables, several manipulation check questions were included in the survey sent out to participants; the results of which were analyzed using a one-way MANOVA. Manipulation check questions were only answered by participants in treatment groups 1 through 6, since participants in the control group were not exposed to any mock post. This test aided in determining if there was an effect of species familiarity and comment author credibility on survey responses. Descriptive statistics for manipulation check questions can be found below in Table 8. There was a statistically significant difference in credibility based on the credibility of the comment author a was participant was shown, $F(4, 452) = 3.945$, $p = 0.004$, Wilks' $\Lambda = 0.934$. However, there was no statistically significant difference in familiarity based on the familiarity of the wildlife species a participant was shown, $F(2, 226) = 2.527$, $p = 0.082$, Wilks' $\Lambda = 0.987$. The specific questions included in the manipulation checks for credibility and familiarity can be found in Table 4 and Table 5. Based on the results of the manipulation check analysis, it can be concluded that differing levels of credibility of comment authors were correctly manipulated/varied, while wildlife species familiarity was not effectively manipulated between the familiar and unfamiliar species used in mock posts for the survey.

Table 8. Manipulation Check Descriptive Statistics

Manipulation Type	Question	M	SD
Species Familiarity	How familiar are you with the animal in the photo you just saw?	2.66	1.025
	How often have you seen this animal (from the photo) in the wild?	2.19	1.112
Credibility	In general, I find the information in the Instagram comment I read to be…	2.45	1.029
	How would you rate the authority of the author of the comment you previously read?	2.63	0.994
	How would you rate the trustworthiness of the author of the comment you previously read?	2.71	1.003

Note. 1 = not familiar/not credible, 5 = very familiar/very credible

4.1.3 Scale Construction and Reliabilities

Several scales were created for survey questions where multiple questions were used to measure the same variable. Analysis was performed to obtain the reliability of each of these situations and reliability along with the items/questions included in each scale are outlined in this section.

Six questions were included to measure behavioral belief of participants, one of the dependent variables in this study. A reliability test was run on the six items that made up the behavioral belief scale. These items were found to have a Cronbach's alpha value (α) of 0.779 and the questions used for this scaled variable can be found in Table 2.

Two questions were implemented in the survey to measure the behavioral intentions of participants, the second dependent variable in this study. A reliability test was run on the two item that made up the behavioral intention scale. These items were found to have a Cronbach's alpha value (α) of 0.835. The two questions included in this scale are those included in Table 3.

Finally, reliability analyses were also conducted for the items used for familiarity manipulation check and credibility manipulation check. A reliability test was run on the two items that made up the familiarity manipulation check scale, which yielded a Cronbach's alpha

value (α) of 0.563. Another reliability test was run on the three items that made up the credibility manipulation check scale, which yielded a Cronbach's alpha value (α) of 0.852.

In order to continue with data analysis, questions included in each of these reliability analyses were combined to create broader deference to authority, risk perception, behavioral belief, behavioral intention, familiarity manipulation check, and credibility manipulation check variables.

4.2 Hypothesis Testing

4.2.1 Main Effects

To assess the main effects of comment author credibility and species familiarity on behavioral beliefs and behavioral intentions, a two-way MANOVA was run.

4.2.2 Hypothesis 1

Hypothesis 1 for this study states that compared to comments from "regular" users, those exposed to comments from a governmental agency charged with wildlife protection or comments from an individual scientist will have a) weaker intentions to take wildlife selfies and b) weaker behavioral beliefs about wildlife selfies. Respondents varied slightly in their reported behavioral beliefs for those assigned to not credible ($N = 77$, $M = 2.275$, $SD = 0.674$), somewhat credible ($N = 78$, $M = 2.250$, $SD = 0.719$), and very credible ($N = 79$, $M = 2.192$, $SD = 0.668$) comment author groups. Participants also varied in their reported behavioral intentions for those assigned to not credible ($N = 77$, $M = 1.798$, $SD = 0.900$), somewhat credible ($N = 78$, $M = 1.756$, $SD = 0.914$), and very credible ($N = 79$, $M = 1.709$, $SD = 0.859$) comment author groups.

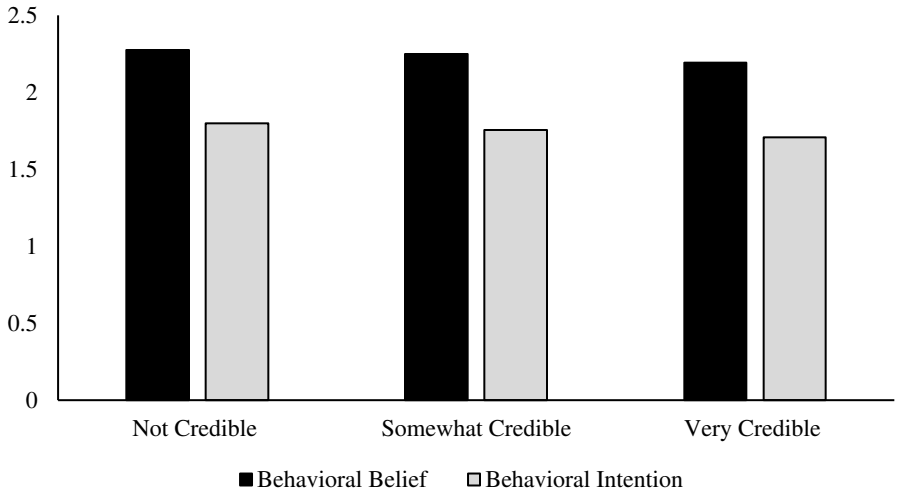


Figure 11. Mean values of reported behavioral beliefs and intentions for differing comment authors.

To test this hypothesis, a two-way MANOVA was run using both independent variables (comment author credibility and species familiarity) and both dependent variables (behavioral belief and behavioral intention) included in hypotheses 1 and 2. There was no statistically significant main effect of credibility on behavioral belief, $F(2, 234) = 0.350$, $p = 0.705$. There was no statistically significant main effect of credibility on behavioral intention, $F(2, 234) = 1.623$, $p = 0.200$. There was no statistically significant main effect of credibility on the combined dependent variables, $F(4, 454) = 0.820$, $p = 0.513$, Wilks' $\Lambda = 0.986$. Comment author credibility had no effect on reported behavioral beliefs or behavioral intentions for wildlife selfies.

4.2.3 Hypothesis 2

Hypothesis 2 for this study states that species more familiar to an individual will lead to a) weaker intentions to take wildlife selfies and b) weaker behavioral beliefs about wildlife selfies, compared to less familiar species. Respondents varied in their reported behavioral beliefs for those assigned to familiar ($N = 116$, $M = 2.301$, $SD = 0.625$) and unfamiliar ($N = 118$, $M = 2.176$, $SD = 0.737$) wildlife species groups. Respondents also varied in their reported

behavioral intentions when assigned to familiar (N = 116, M = 1.767, SD = 0.868) and unfamiliar (N = 118, M = 1.653, SD = 0.851) wildlife species groups.

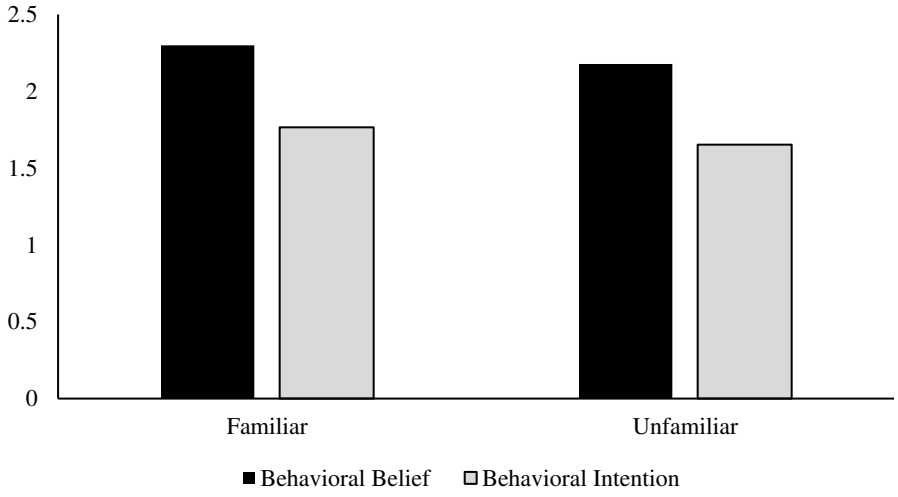


Figure 12. Mean values of reported behavioral beliefs and intentions for differing wildlife species familiarity.

To test this hypothesis, the same two-way MANOVA was run that was used to test Hypothesis 1. This test was run using two independent variables (comment author credibility and species familiarity) and two dependent variables (behavioral belief and behavioral intention). There was no statistically significant main effect of familiarity on behavioral belief, $F(1, 234) = 1.952$, $p = 0.164$. There was no statistically significant main effect of familiarity on behavioral intention, $F(1, 234) = 1.108$, $p = 0.294$. There was no statistically significant main effect of familiarity on the combined dependent variables, $F(2, 227) = 1.020$, $p = 0.362$, Wilks' $\Lambda = 0.991$. Familiarity with the wildlife species presented in a mock post had no effect on reported behavioral beliefs or behavioral intentions for wildlife selfies.

4.2.4 Interaction Effect

To assess the interaction effect of comment author credibility and species familiarity on behavioral beliefs and behavioral intentions, a two-way MANOVA was run.

4.2.5 Hypothesis 3

Hypothesis 3 states that the familiarity of a wildlife species will have an interaction effect with credibility on a) intent to take wildlife selfies and b) behavioral beliefs about wildlife selfies. To analyze the presence of an interaction effect, the same two-way MANOVA test was run that was used to test hypotheses 1 and 2. The two-way MANOVA test used two independent variables (comment author credibility and species familiarity) and two independent variables (behavioral belief and behavioral intention). There was a statistically significant interaction effect between the independent variables and behavioral belief, $F(2, 234) = 3.623$, $p = 0.028$. There was a statistically significant interaction effect between the independent variables and behavioral intention, $F(2, 234) = 4.295$, $p = 0.015$. There was a statistically significant interaction effect between credibility and familiarity on the combined dependent variables, $F(4, 454) = 3.263$, $p = 0.012$, Wilks' $\Lambda = 0.945$. The interaction of familiarity of a wildlife species and credibility of a comment author did influence reported behavioral beliefs and behavioral intentions for wildlife selfies, as seen in Figures 13 and 14.

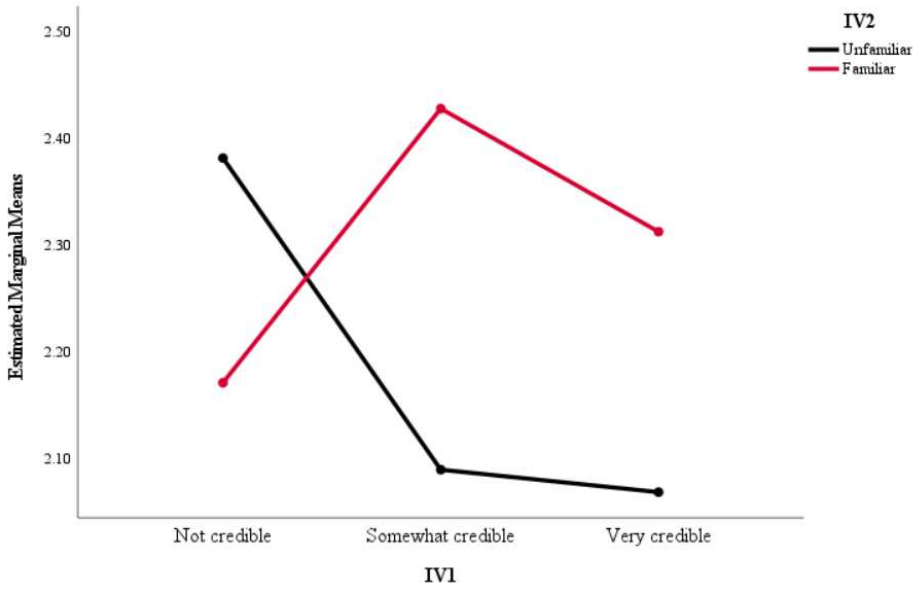


Figure 13. Mean values of behavioral beliefs for wildlife species familiarity and comment author credibility.

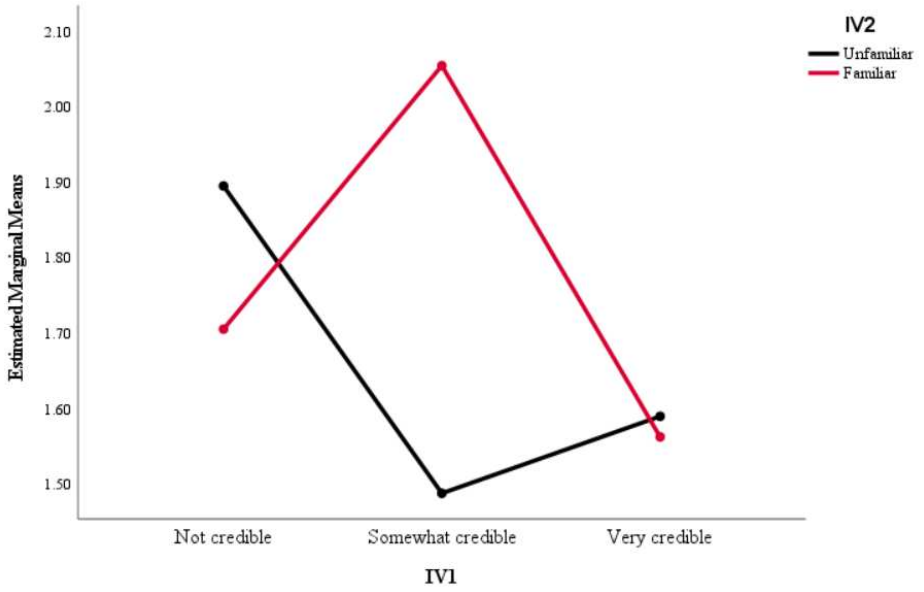


Figure 14. Mean values of behavioral intentions for wildlife species familiarity and comment author credibility.

4.2.6 Exploratory Analysis

In the survey, two questions were included to measure the attribute variable of deference to authority. A reliability test was run on the two items that made up the deference to authority scale. The questions relating to deference to authority were found to have a Cronbach's alpha value (α) of 0.602. The specific items included in this scale are those found in Table 6.

Four questions were included to measure a second attribute variable, risk perception. A reliability test was run on the four items that made up the risk perception scale. These four items were found to have a Cronbach's alpha value (α) of 0.736. The four questions specifically included in this scale can be found in Table 7.

A multiple regression was run to predict behavioral belief from deference to authority, risk perception, familiarity, credibility, and treatment condition. These variables statistically significantly predicted behavioral belief, $F(5, 223) = 15.558$, $p < 0.001$, $R^2 = 0.259$. Risk

perception was the only variable out of the five that added statistically significantly to the prediction, $p < 0.05$.

A second multiple regression was run to predict behavioral intention from deference to authority, risk perception, familiarity, credibility, and treatment condition. These variables statistically significantly predicted behavioral intention, $F(5, 223) = 19.109$, $p < 0.001$, $R^2 = 0.300$. Again, risk perception was the only variable out of the five that added statistically significantly to the prediction, $p < 0.05$.

In addition, a one-way MANOVA analysis was run comparing the control group to treatment groups regarding behavioral intentions and behavioral beliefs. The descriptive statistics for this analysis can be found in Table 9 below. There was a statistically significant difference in behavioral belief and behavioral intention based on the condition a participant was assigned to, $F(12, 518) = 2.050$, $p = 0.019$, Wilks' $\Lambda = 0.911$)A Tukey's HSD Test for multiple comparisons found that the mean value of behavioral intention was only significantly different between the unfamiliar/scientist and control conditions ($p = 0.015$, 95% C.I. = [-1.242, -0.077]). There was no statistically significant difference in mean behavioral belief or intention scores between any other conditions. The condition a participant was randomly assigned to did not significantly affect their responses to behavioral belief or behavioral intention questions.

Table 9. Descriptive Statistics

Condition (Species/Commenter)	Behavioral Beliefs		Behavioral Intentions	
	M	SD	M	SD
Familiar/Government	2.313	0.582	1.563	0.709
Unfamiliar/Government	2.100	0.751	1.613	0.805
Familiar/Regular	2.192	0.519	1.744	0.785
Unfamiliar/Regular	2.366	0.781	1.847	1.034
Familiar/Scientist	2.428	0.731	2.054	1.098
Unfamiliar/Scientist	2.089	0.678	1.488	0.607
Control	2.476	0.653	2.147	0.812

Note. 1 = strongly disagree/very unlikely, 5 = strongly agree/very likely

CHAPTER 5. DISCUSSION

Results show that separately, species familiarity and comment author credibility do not have a statistically significant impact on the behavioral intentions and beliefs when it comes to wildlife selfies. However, there is a statistically significant impact on behavioral intentions and beliefs when the interaction between species familiarity and comment author credibility is considered. In the following section, these results will be further discussed, along with practical implications for the findings of the study, limitations of the study, and areas for future research.

5.1 Author Credibility in Instagram Posts (H1)

Results showed that there were no statistically significant differences in behavioral beliefs or behavioral intentions between participants exposed to varying levels of comment author credibility (high, moderate, or low). From these findings, it can be concluded that comment author credibility alone has no effect on the reported behavioral beliefs or behavioral intentions when it comes to wildlife selfies. This finding does not align with what was predicted for this study. In light of this, there could be several explanations for why this outcome occurred and how it can be further studied in the future.

Existing literature has found that credibility is reliant on the source of information and, by extension, if the source of information is identified as an expert or one with authority, that information is more likely to resonate with the individuals exposed to is (Lin et al., 2016; Sundar, 2008). By varying the levels of authority associated with each of the three mock commenters, this study aimed to use authority as an avenue to establish credibility with participants. Source credibility itself is commonly defined as how persuasive a message is depending on the communicator presenting the information (Abbasi & Liu, 2013; Wu et al.,

2016). However, the issue with credibility online still lies in the fact that the true or original source can be difficult to identify (Sundar, 2008). While this study tried to establish differing levels of credibility for different comment authors, participants may not be accustomed to finding the source of the online information they see as it can be hard to track down. However, previous research has found that how individuals perceive credibility can have an effect on their behavior beliefs (Pothriattanachaikul et al., 2019), and possibly behavioral intentions as well.

5.2 Species Familiarity in Instagram Posts (H2)

The statistical results run to answer this hypothesis showed that there are no significant differences in behavioral beliefs or behavioral intentions between participants exposed to different levels of familiarity one might have with a wildlife species (familiar or unfamiliar). This information leads to the conclusion that the familiarity one has with a wildlife species shown to them in a mock Instagram post did not affect reported behavioral beliefs or behavioral intentions when it comes to wildlife selfies. Again, this finding does not align with the predictions for this study.

Current literature points to more familiarity with a wildlife species leading to people feeling more willing to protect and conserve these animals, as opposed to species less familiar to people (Reimer et al., 2014). Feelings of familiarity with wildlife has also been seen to lead to more positive attitudes towards the familiar species overall (Reimer et al., 2014). As humans continue to live within close proximity to wildlife, people can begin to develop different attitudes towards different species, depending on how well an individual believes they know a species (Morris et al., 2012). All in all, familiarity with an item or topic (even wildlife species) can impact how people's perceptions and how they make decisions regarding that item or topic (Alba & Cooke, 2004; Cyr et al., 2018; Ratneshwar et al., 1987). While some individuals may be more

familiar with certain wildlife species, the common presence of wildlife selfies online is still a fairly new phenomenon which may take more research to fully understand.

5.3 Author Credibility and Species Familiarity Interaction (H3)

Results for Hypothesis 3 showed that there was a statistically significant difference between the independent variables (comment author credibility and species familiarity) and behavioral belief and behavioral intention. These findings did align with what was hypothesized for this study. From these results it can be concluded that the interaction between species familiarity and comment author credibility do effect reported behavioral beliefs and intentions for wildlife selfies. For behavioral belief, the interaction effect is seen as comment author credibility increases from "not credible" to "somewhat credible" when looking at participants exposed to unfamiliar and familiar wildlife species (Fig. 13). For behavioral intention, this interaction is seen as comment author credibility increases from "not credible" to "somewhat credible" and again when credibility increases from "somewhat credible" to "very credible" when looking at participants exposed to unfamiliar and familiar wildlife species (Fig. 14). Together, the interaction that occurs between species familiarity and comment author credibility creates a statistically significant increase in reported behavioral beliefs and behavioral intentions when it comes to taking wildlife selfies. Higher familiarity and higher credibility, when analyzed together, led to reported behavioral beliefs and intentions that show respondents would not be likely to take wildlife selfies in the future. While the individual main effects themselves were not significant, the combination was significant, which could indicate that wildlife familiarity and author credibility work best together to create a significant impact on behavioral intentions and beliefs.

After analyzing the results, it could be possible that very credible comment authors had lower effects on behavioral beliefs and intentions because they came from a governmental agency. The fictitious agency could have been seen as more separated from the lives of participants than the somewhat credible and not credible commenters. There could have been more of a perceived connection between participants and individual commenters than there was between participants and a larger organizational group.

5.4 Exploratory Analysis

After conducting an exploratory analysis, it was found that risk perception was the only variable that added in a statistically significant manner to the ability to predict behavioral beliefs and intentions. Ultimately, risk perception was found to be able to predict variations in behavioral belief and intention responses. The other variables examined in this multiple regression (deference to authority, familiarity, credibility, and treatment condition) were not found to be able to significantly predict variations in behavioral belief and intention responses.

Risk perception is typically defined as the combined effects of uncertainty when making a decision along with the consequences of that same decision (Choi et al., 2013). When it comes to examining perceived risk in other experiments, there is a causal relationship between risk perception and behavioral intentions, more specifically perceived risk tends to negatively impact participants' behavioral intention (Choi et al., 2013; O'Connor et al., 1999). With documented success of risk perceptions being able to predict behavioral intentions, risk perception should be utilized and considered more as a variable in studies examining behavioral intentions and beliefs of participants (O'Connor et al., 1999).

Additionally, after running a one-way MANOVA to compare the treatment conditions to the control condition and finding a statistically significant result, post hoc tests revealed that the

only significant difference occurred between the unfamiliar/scientist and control conditions. This result indicated that there was a significant difference in mean values of behavioral intention scores between these two conditions, but not between any other conditions for behavioral intentions or beliefs. In other words, people were less likely to want to take wildlife selfies if they saw the scientist comment on the unfamiliar wildlife species post compared to those in the control condition who did not see any Instagram posts.

5.5 Theoretical Implications

The results and findings from this study have helped add to existing literature, especially as it relates to the main theories utilized, source credibility theory and the Elaboration Likelihood Model (specifically as it relates to familiarity). Past studies have found that source credibility was able to accurately predict participants' attitudes and intended behavior, at least in the realm of health information (Jennings & Russell, 2019). While the results for this study did not find source credibility to be a significant predictor of behavioral intentions and beliefs, these findings can still provide insight into how effective online sources can be at establishing credibility. There are also fewer studies available examining the effect of source credibility on environmental/conservation behaviors when compared to the number of studies available regarding the effectiveness of source credibility on health behaviors. This study is able to contribute to existing literature on source credibility on environmental/conservation behaviors even though no significant findings were attributed to source credibility. This study shows more research is needed into what kinds of sources can be considered more credible in an online environmental/conservation context.

Concerning the Elaboration Likelihood Model (ELM), previous research has defined elaboration as the amount of effort needed by an individual to process certain information

(Jennings & Russell, 2019). In more recent studies, the ELM has begun to be used in more online contexts, where peripheral cues can be found in website design elements like image appeal and how easy an online platform is to navigate (Cyr et al., 2018). When participants find a topic interesting or even familiar, they will be those most likely to take the time to read and process what they are being presented, so prior experience or familiarity becomes a part of the ELM process (Cyr et al., 2018). Previous research has been able determine that familiarity allows information to be processed non-analytically (or heuristically), while unfamiliar information is processed analytically which leads to more detail-oriented processing (Garcia-Marques & Mackie, 2001). The results for this study did not have any statistically significant findings concerning the ability of wildlife species familiarity to act as a predictor of behavioral belief and intentions. However, these findings can still provide insight into what types of wildlife species are considered unfamiliar/familiar to specific groups of participants. Determining which types of wildlife can be considered familiar to specific types of participants can be difficult to do depending on the demographics of a group of participants. This study adds to existing literature on ELM and familiarity by bringing together more information about the need to better define and research wildlife species familiarity, especially for this particular group of participants.

5.6 Practical Implications

Providing some sense of gatekeeping and credibility for information found on social media can change the behavioral beliefs and intentions of some people, depending on the topic being targeted. Investigating source credibility (through trust and reliability) along with wildlife species familiarity can help to focus in on what methods are effective when it comes to dissuading social media users from posting and participating in wildlife selfies. The results of

this study can be incorporated, along with how to leverage source credibility and species familiarity in social media posts, in a practical and effective way that can be used beyond the scope of this specific study. These implications will be discussed further in this section.

There is information posted on social media fairly frequently, and many today rely heavily on what they see on social media as their main source of information on what is going on in the world. Due to the high volume of people visiting social media sites paired with a lack of gatekeepers on these platforms, it has become increasingly important to monitor what information is being disseminated here in order to make sure individuals are receiving as much factual/truthful information as possible. Going to where people are already seeking information on social media can be one way to eliminate barriers to spreading information and make sure a target audience is being exposed to certain information.

One promising result for wildlife scientists was found in the exploratory analysis that revealed the scientist commenter on the unfamiliar wildlife species post resulted in less favorable beliefs toward wildlife selfies and reduced intentions to take such selfies. Encouraging wildlife scientists to briefly correct and redirect people who post wildlife selfies via comments on their public posts could be an effective strategy to detour others from doing the same. Such a strategy would mean the posts need to remain up but also that the comment from the wildlife biologist would need to be seen.

Based on the results from this study, both source credibility and species familiarity did not make a significant enough of a difference on their own, however, when combined their effectiveness was significant. When examining results of the interaction effect on behavioral belief, higher means were observed for familiar species when comment authors were “somewhat credible” and “very credible,” with unfamiliar species having a higher mean than familiar species

when author credibility was lowest (Fig.13). For the interaction effect on behavioral intention, a higher mean was observed for familiar species when comment authors were "somewhat credible," with unfamiliar species having a higher mean than familiar species when comment authors were "not credible" and "very credible" (Fig. 14). Knowing where these interactions occurred, governmental agencies would benefit most from using "somewhat credible" comment authors when using images depicting familiar species when they are trying to create the biggest impact on behavioral beliefs and intentions, when it comes to dissuading people from partaking in and posting wildlife selfies on social media. This finding could indicate that when it comes to social media messaging, there are many different theories and concepts that should be used together to create effective messaging, rather than focusing solely on manipulating one aspect of the message to influence behavioral change and intentions. Some existing literature has found that integrating multiple theories and frameworks to create a final messaging strategy, especially when trying to communicate conservation and environmental messages, can be more effective than relying solely on one method/theory (Slater, 1999). In order to encourage behavioral change, some studies are taking more of a social marketing approach when it comes to developing messaging and using more consistent messaging over a longer period of time (Dresler-Hawke & Veer, 2006). Social marketing has proven to be an effective behavior change technique, especially in the realms of health and environmental behaviors (Hastings et al., 2000) for over three decades (Smith, 2006). In fact, governmental agencies and other public sector organizations have begun to implement social marketing campaigns in order to promote more voluntary behavior change (Corner & Randell, 2011; Raftopoulou & Hogg, 2010). This study's findings on the interaction effect between source credibility and people's familiarity with wildlife species can inform social marketers' strategies in their selection of more effective

sources of key messaging about wildlife viewing. When it comes to creating effective, long-term messaging strategies, the interaction between multiple elements/theories can be more effective and significant in influencing behavioral beliefs and intentions than only using one element/theory.

5.7 Limitations

While this study tried to control and account for as much as possible, there were still some limitations associated with it. For this study, limitations include a smaller than expected sample size, manipulation checks not being as effective as possible, a preexisting bias/response bias potentially held by some respondents, and limited generalizability.

Based on the initial power analysis for this study, the final sample size recruited to participate was relatively small. With a smaller sample size, it can be more difficult to find statistically significant results. The study initially relied on participant recruitment through the online system SONA, however after a two-week period of time and minimal participation via the SONA system, the decision was made to also recruit participants in-person on the Colorado State University campus. While these in-person efforts yielded more participants for the study, there was still a relatively small sample size recruited to participate in this study.

Additionally, the manipulation checks put in place were not all as effective as they were intended to be. Comment author credibility was significantly manipulated; however, species familiarity was not significantly manipulated in either the pilot study or final survey. There was a difference in perceived credibility between the regular, scientific, and governmental comment authors. On the other hand, there was not a difference in perceived species familiarity between the familiar (moose) and unfamiliar (kangaroo and monk seal) species.

Another limitation that could have played a role in the results could come from preexisting conditions/response bias. Keeping a safe distance from wildlife has been a more frequently occurring message recently, so participants may have already been aware of the dangers of approaching wildlife and could have formed their own opinions on the subject before participating in this survey. Participants in this study were also given a brief introduction on what the study was about before consenting to participate, which could have led only those who feel strongly about the topic to participate. There was no penalty for not completing or participating in the survey which could have led those participants who feel more apathetic about the topic to not participate at all.

A final limitation to this study is the limited generalizability of the results. This study was created to be distributed to students at a university within Colorado. The familiar wildlife species and comment author usernames were picked and created to connect more with a participant living in Colorado. While this study could be used for other universities within the state of Colorado, it would have to be adapted in order to be implemented for other target audiences.

5.8 Future Research

As far as gathering more data and information on online credibility and ways to dissuade individuals from taking wildlife selfies, there are a lot of opportunities for future research. Since there are many ways for people to connect online, future research could delve further into the various online areas where credibility could be established (admin accounts, user guidelines, regulatory users, etc.), to address online credibility where users are already going to. Considering different target audiences can help better inform message creation to better inform what language should be used to establish the most credibility online. Having future research

study different message frames and delivery methods could help better pinpoint the most effective ways to spread credible online information.

Testing comments trying to dissuade the taking of wildlife selfies on other social media platforms (besides Instagram) can be another avenue for future research. Not every platform operates in the same way and draws in the same type of audience(s), so it is important to further examine the differences in establishing source credibility between platforms and how these differences can help spread information on topics like safe wildlife viewing distances or other environmental protection messages.

Examining the effects different types of users/usernames on feelings of credibility and familiarity may also be an intriguing area of future research. There are additional users who may have a closer connection to individuals and may be able to better influence behavioral intentions and beliefs. There might also be other agencies who could examine the influence and credibility of different agencies trying to dissuade unlawful or dangerous behavior in order to more effectively communicate with the general public in a way that is more efficient than current methods.

Another issue to study is whether and how much seeing wildlife selfies on social media encourages favorable views towards doing so as well as the desire or intent to do so when given the opportunity. What we are unable to discern from this study is the extent to which seeing wildlife selfies might encourage people to take wildlife selfies or view them favorably. Future research that included exposure to wildlife selfies without discouraging comments in a comparison condition could address this question.

Finally, studying the effect of using different animal species as the subject in a picture could be an important future area of study. Being able to identify which wildlife species

resonate as the most familiar or unfamiliar with a population of people can help provide insight into how they will react to seeing that specific species. If an animal that evokes a feeling of fear is seen in a wildlife selfie versus an animal deemed "cute" there could be different behavioral beliefs and intentions when it comes to the perceptions of those exposed to these images. If certain feelings can be better and more clearly attached to specific wildlife species, it could inform future studies that are trying to use animal representations in their messaging.

In addition to utilizing different wildlife species in photographs, there could also be a better way to manipulate wildlife familiarity. For example, an additional pretest could be implemented that shows multiple wildlife species and asks participants to rank the photos/species on a familiarity continuum. The implementation of this pretest could help in providing a baseline for what is considered familiar and unfamiliar for a specific target audience in order to better select the correct species to represent the familiar and unfamiliar species in the actual study.

5.9 Conclusion

The purpose of this study was to understand the role comment author credibility and wildlife species familiarity play when it comes to trying to dissuade people from taking wildlife selfies and posting them on Instagram. Source Credibility Theory and the Elaboration Likelihood Model were used to create varying levels of credibility among mock online Instagram users, while behavior change messaging and the use of hashtags on social media aided in the creation of the messages included in the mock-up posts themselves.

As far as main effects were concerned, there were no statistically significant differences between comment author credibility, behavioral intention, and behavioral beliefs. The other hypothesized main effect between species familiarity, behavioral intention, and behavioral

beliefs was also not statistically significant. However, there was a statistically significant interaction between the two independent (comment author credibility and species familiarity) and two dependent variables (behavioral intention and behavioral beliefs). This significant interaction indicates that employing the use of comment author credibility and species familiarity in Instagram posts trying to dissuade the taking of wildlife selfies can impact the behavioral intention and beliefs of those who view the post. Knowing how to establish credibility on social media platforms and choosing an effective animal species to depict on that same platform can help change the behavioral beliefs and intentions of individuals. An exploratory analysis showed risk perceptions to be the predominant predictor of people's intention to move close to wildlife for selfies. Future research looking into credibility on different online platforms, what different audiences find credible, and how to establish more credibility online can help us further understand how to create and maintain credibility online while also promoting environmentally conscious behavior, like not taking wildlife selfies.

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APPENDICES

Appendix A: Pilot Study Survey

Informed Consent

Dear Participant,

My name is Paige Nankey and I am a researcher from Colorado State University in the Journalism and Media Communication department. I am conducting a research study on the appearance of wildlife on Instagram and how credibility can play a role in this. The title of the project is Wildlife on Instagram. The Principal Investigator is Katie Abrams (Journalism and Media Communication) and I am the Co-Principal Investigator.

We would like you to take an anonymous online survey. Participation will take approximately 6 to 8 minutes. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will not collect your name or personal identifiers. When we report and share the data to others, we will combine the data from all participants. While there are no direct benefits to you, we hope to gain more knowledge on credibility in an online setting, especially on social media platforms like Instagram.

There are no known risks associated with participating in this study. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential (but unknown) risks.

To indicate your consent to participate in this research and to continue on to the survey, please respond to question below.

If you have any questions about the research, please contact Paige Nankey at

paige.nankey@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Katie Abrams (Associate Professor) Paige Nankey (Student)

Please choose one of the following statements.

- ○ Yes, I have read the above information and consent to participate in this survey.
- ○ No, I do not consent to participate in this survey.

Instagram Usage

How often do you use Instagram?

- ○ Several times a day
- ○ Only once per day
- ○ Only once per week
- ○ Less frequent than once per week
- ○ I do not use Instagram

Would you consider Instagram the main social media platform you use?

- ○ Yes
- ○ No
- ○ No

Have you ever taken a selfie?

- ○ Yes
- ○ No

Have you ever taken a selfie with a wild animal?

- ○ Yes
- ○ No

Deference to Authority

Please respond to the following statements.

	1 = do not agree at all	2	3	4	5	6 = neither agree nor disagree	7	8	9	10	11 = agree very much
Those with authority know what is best for the public	○	○	○	○	○	○	○	○	○	○	○
Those with authority should do what they think is best, even if they have to persuade people that it is right.	○	○	○	○	○	○	○	○	○	○	○

Risk Perception

Please respond to the following questions?

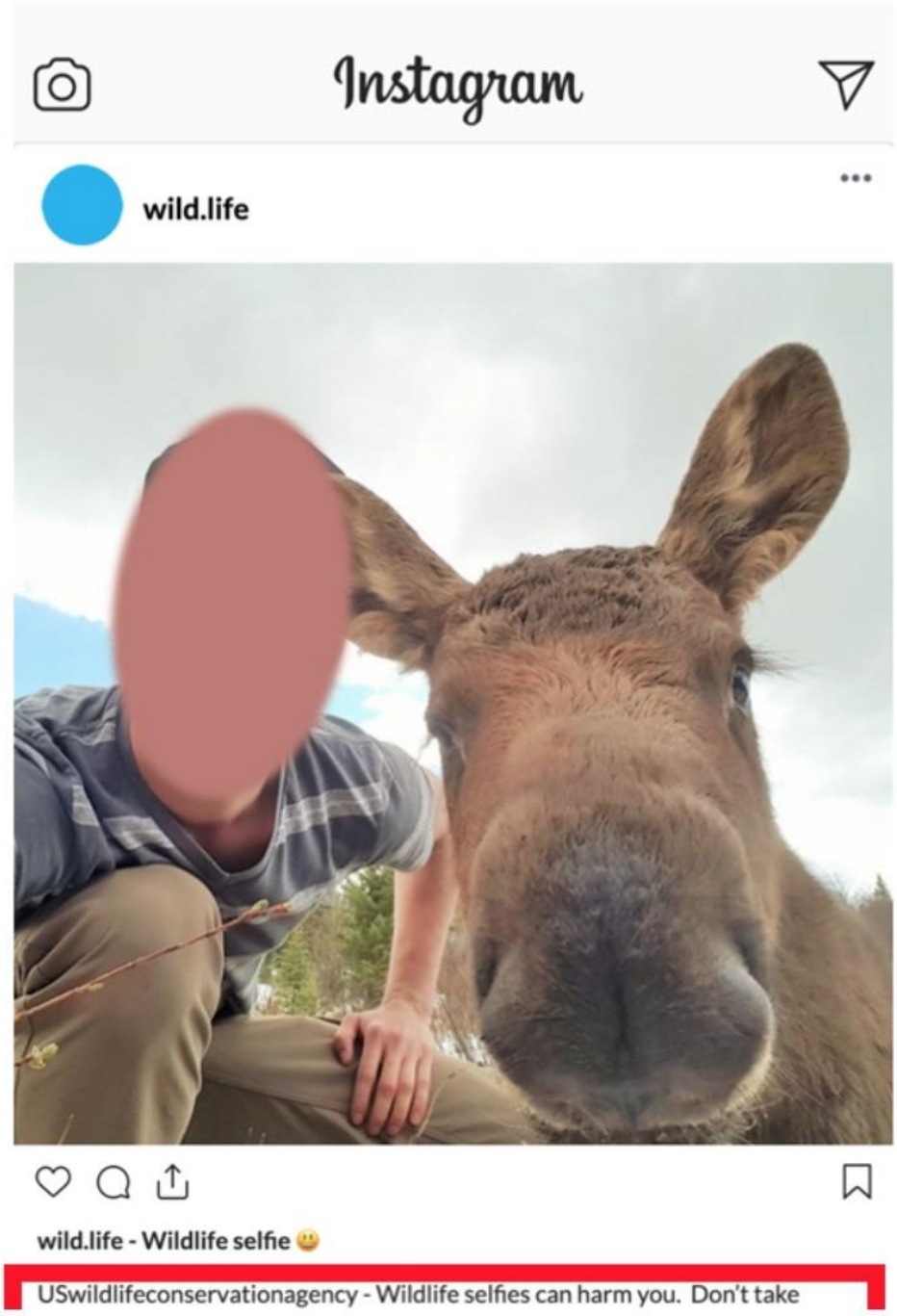
	1 = not risky at all	2	3 = neither risky or not risky	4	5 = extremely risky
How risky do you believe it is to approach wildlife?	○	○	○	○	○
How risky do you believe it is to take a wildlife selfie?	○	○	○	○	○
How risky is it to not move away from wildlife that is approaching you?	○	○	○	○	○
How risky do you believe it is to take a photo of someone else approaching wildlife?	○	○	○	○	○

Group 1: Familiar Species and Government Commenter (w/ description)

Please read the description below and examine the following Instagram post and comment. When you are finished, please continue with the survey.

The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future

generations.



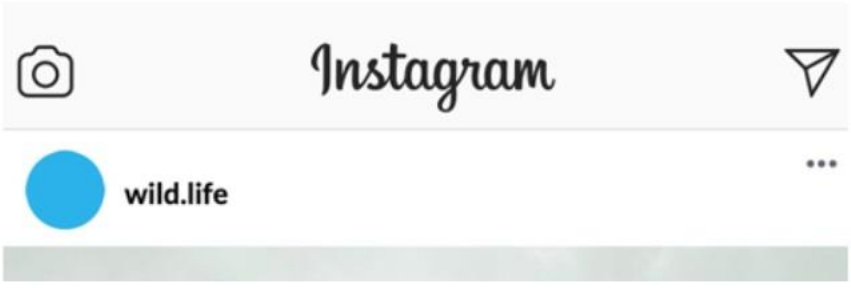
Group 2: Unfamiliar Species and Government Commenter (w/ description)

Please read the description below and examine the following Instagram post and comment. When you are finished, please continue with the survey.

The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations.

Group 3: Familiar Species and Regular Commenter

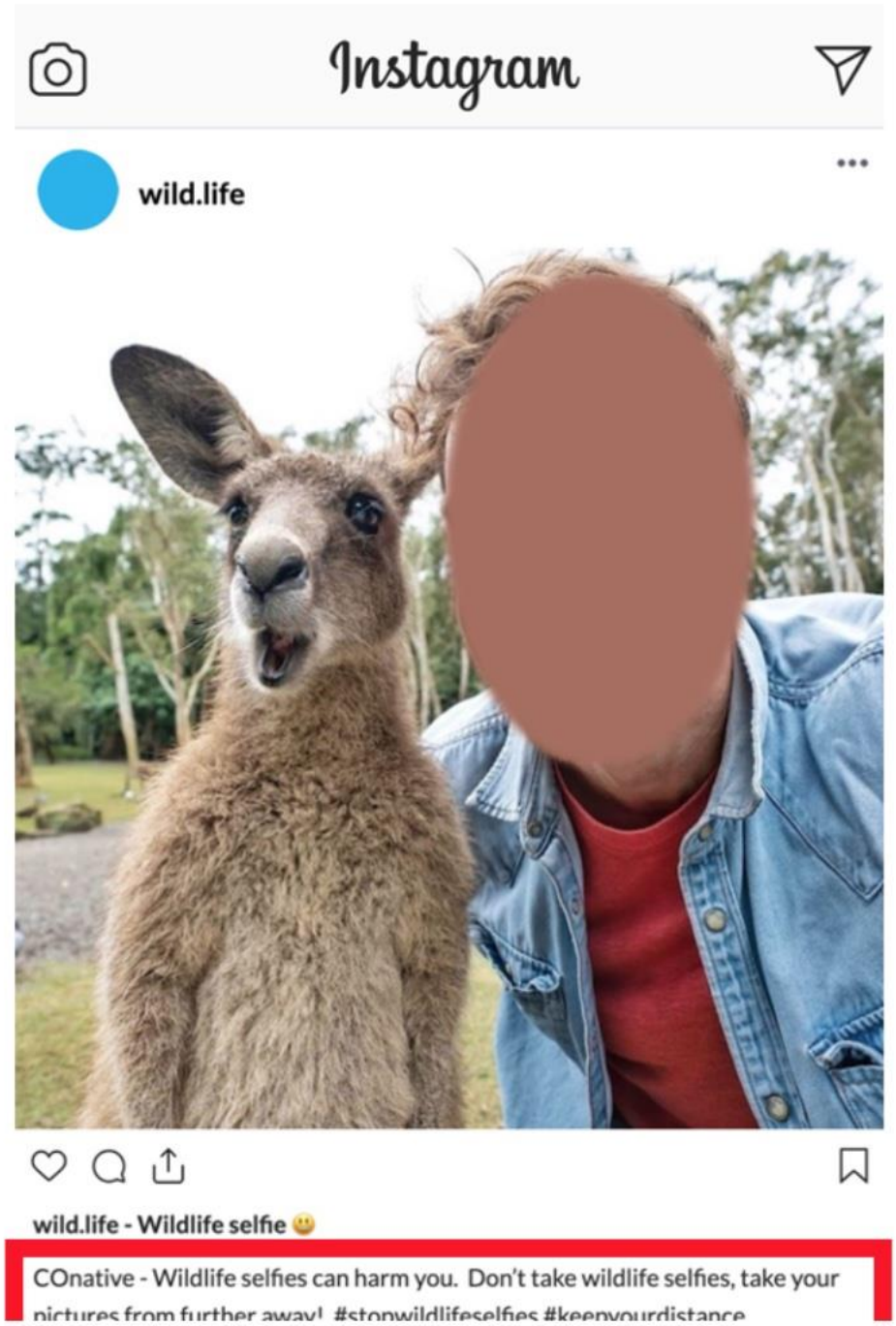
Please examine the following Instagram post and comment. When you are finished, please continue with the survey.



Group 4: Unfamiliar Species and Regular Commenter

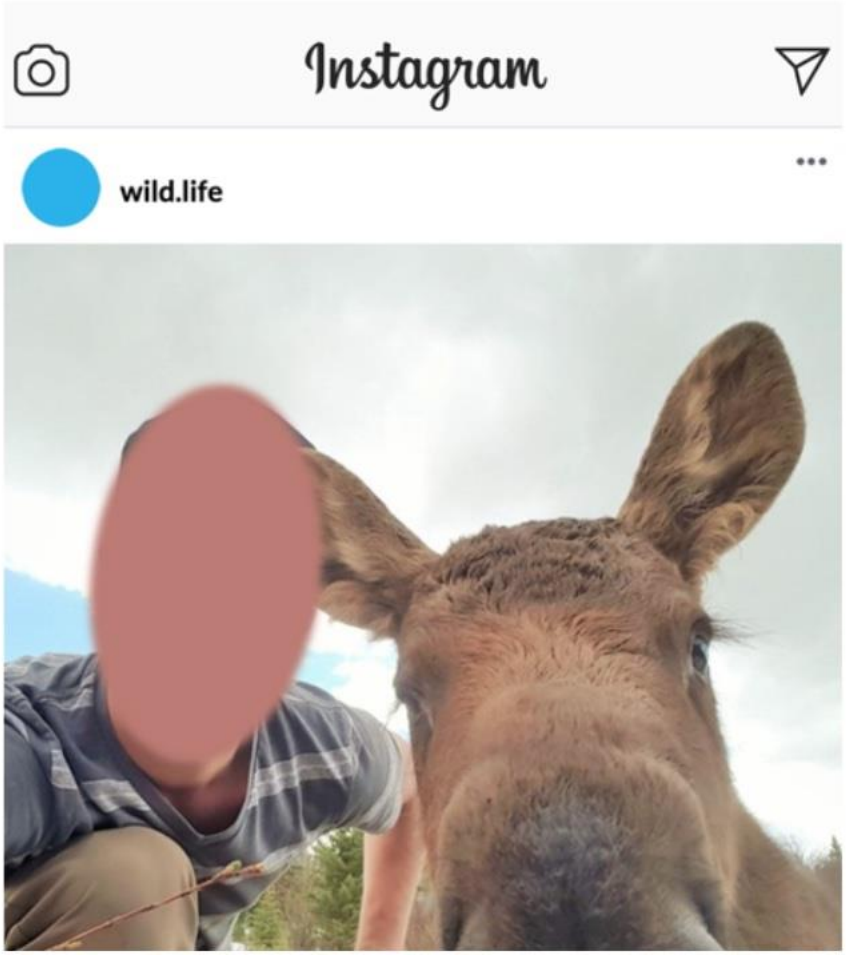
Please examine the following Instagram post and comment. When you are

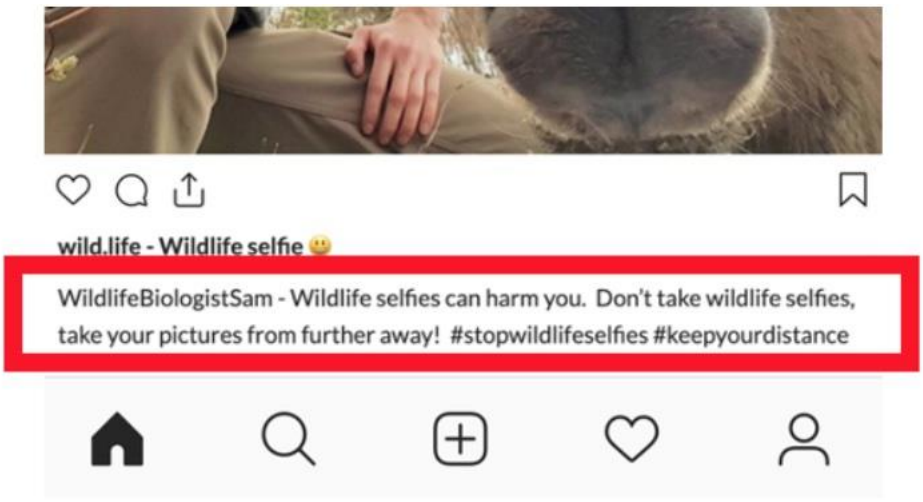
finished, please continue with the survey.



Group 5: Familiar Species and Scientist Commenter

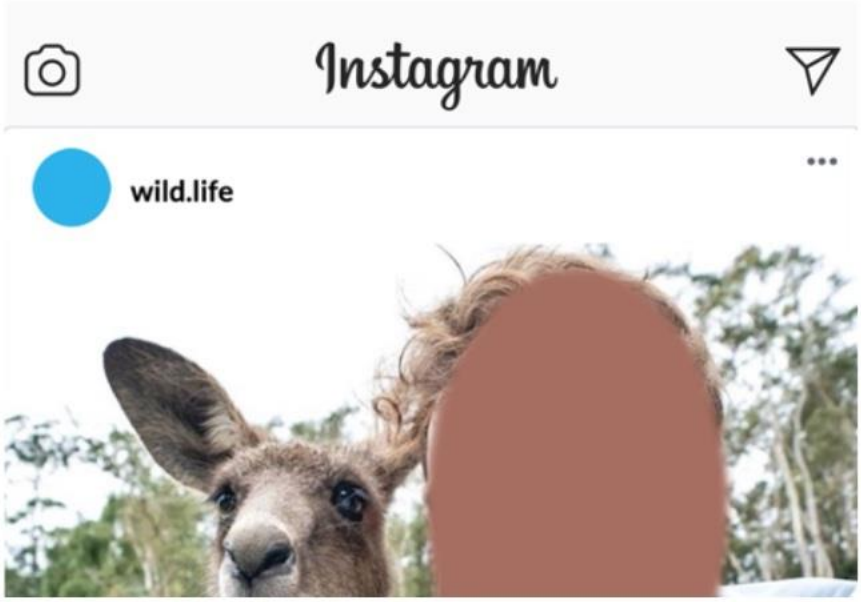
Please examine the following Instagram post and comment. When you are finished, please continue with the survey.





Group 6: Unfamiliar Species and Scientist Commenter

Please examine the following Instagram post and comment. When you are finished, please continue with the survey.



Group 7: Control (no stimuli presented)

Please click below to continue on with the survey.

Behavioral Belief

Taking photos of myself close to wildlife...

3 =

	1 = strongly disagree	2	neither disagree or agree	4	5 = strongly agree
Is generally harmless to wildlfie.	○	○	○	○	○
Is unlikely to be risky to me.	○	○	○	○	○
Is worth it to create memories of my experience.	○	○	○	○	○
Is thrilling	○	○	○	○	○
Is important in showing my appreciation for wildlife.	○	○	○	○	○
Is important for how I want to be perceived by others.	○	○	○	○	○

Behavioral Intention

Please respond to the following questions.

	1 = very unlikely	2	3 = neither unlikely or likely	4	5 = very likely
Do you think you will take a wildlife selfie (like the one you just saw) in the future?	○	○	○	○	○

How likely is it that you will approach wildlife in the future to take a picture?	○	○	○	○	○

Familiarity Manipulation Check

Were you shown a photo on a previous screen?

○ Yes
○ No

Please respond to the following question.

	1 = not familiar at all	2	3 = neither not familiar or familiar	4	5 = extremely familiar
How familiar are you with the animal in the photo you just saw?	○	○	○	○	○

Please respond to the following question.

	1 = never	2	3	4	5 = I frequently encounter this animal

How often have you seen this animal (from the photo) in person?	○	○	○	○	○

Credibility Manipulation Check

Were you shown an Instagram post?

○ Yes

○ No

Please respond to the following statement.

	1 = not at all credible	2	3 = neither credible or not credible	4	5 = extremely credible
In general, I find the information in the Instagram comment I read to be...	○	○	○	○	○

Please answer the following questions.

	1 = very low	2	3 = neither high or low	4	5 = very high

How would you rate the authority of the author of the comment you previously read?	○	○	○	○	○
How would you rate the trustworthiness of the author of the comment you previously read?	○	○	○	○	○

Demographics

How old are you?

- ○ Under 18
- ○ 18-24 years old
- ○ 25-34 years old
- ○ 35-44 years old
- ○ 45-54 years old
- ○ 55-64 years old
- ○ 65+ years old

How do you describe yourself?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ [ ] Prefer to self-describe
- ○ Prefer not to say

How would you describe your political affiliation?

- ○ Republican
- ○ Democrat
- ○ Independent
- ○ Other
- ○ Prefer not to say

Appendix B: Pretest Survey

Informed Consent

Dear Participant,

My name is Paige Nankey and I am a researcher from Colorado State University in the Journalism and Media Communication department. I am conducting a research study on the appearance of wildlife on Instagram and how credibility can play a role in this. The title of the project is Wildlife on Instagram. The Principal Investigator is Katie Abrams (Journalism and Media Communication) and I am the Co-Principal Investigator.

We would like you to take an anonymous online survey. Participation will take approximately 6 to 8 minutes. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will not collect your name or personal identifiers. When we report and share the data to others, we will combine the data from all participants. While there are no direct benefits to you, we hope to gain more knowledge on credibility in an online setting, especially on social media platforms like Instagram.

There are no known risks associated with participating in this study. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential (but unknown) risks.

To indicate your consent to participate in this research and to continue on to the survey, please respond to question below.

If you have any questions about the research, please contact Paige Nankey at

paige.nankey@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Katie Abrams (Associate Professor) Paige Nankey (Student)

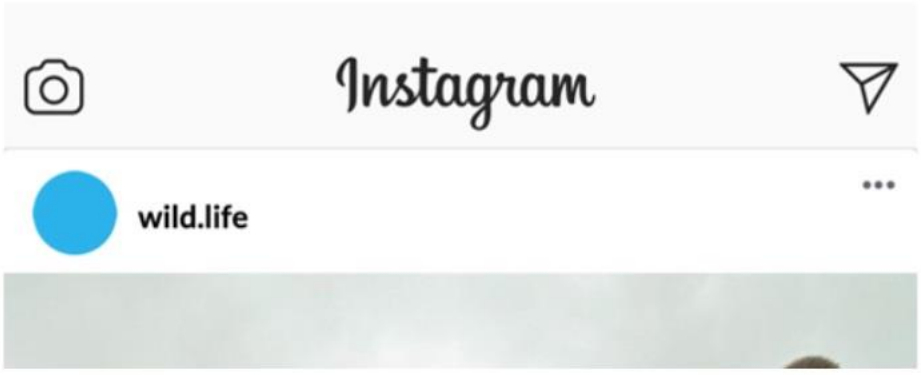
Please choose one of the following statements.

- ○ Yes, I have read the above information and consent to participate in this survey.
- ○ No, I do not consent to participate in this survey.

Group 1: Familiar and Government (with description)

Please read the description below and examine the following Instagram post and comment. When you are finished, please continue with the survey.

The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations.

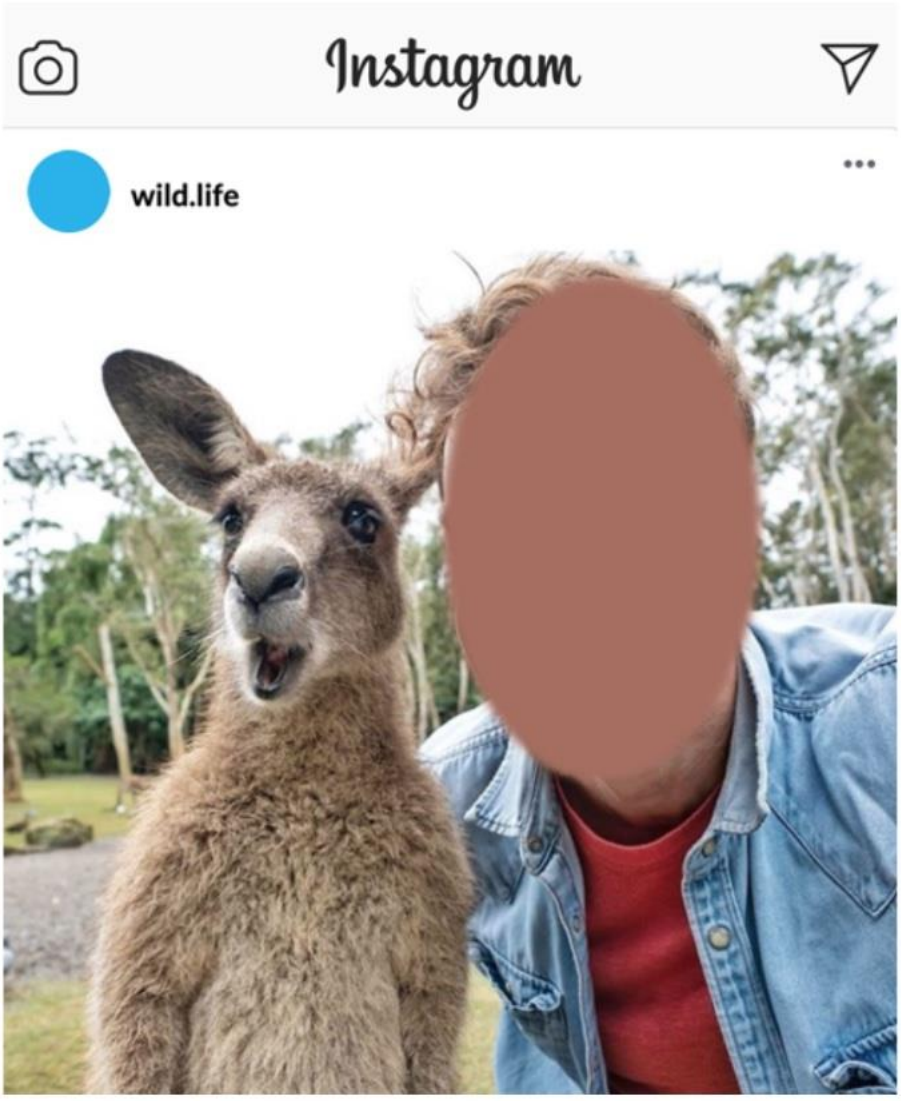


Group 2: Unfamiliar and Government (with descritpion)

Please read the description below and examine the following Instagram post

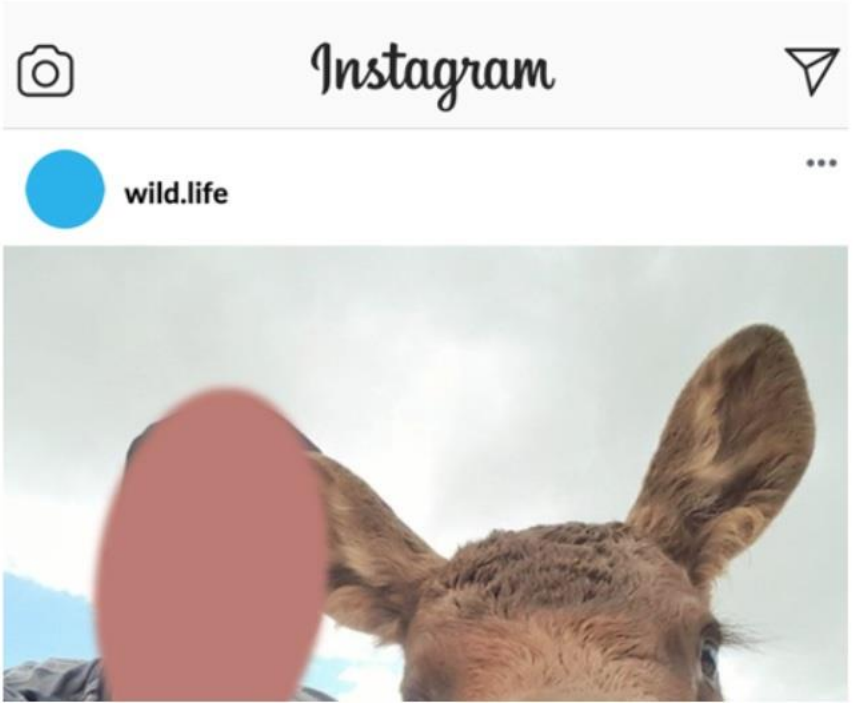
and comment. When you are finished, please continue with the survey.

The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations.



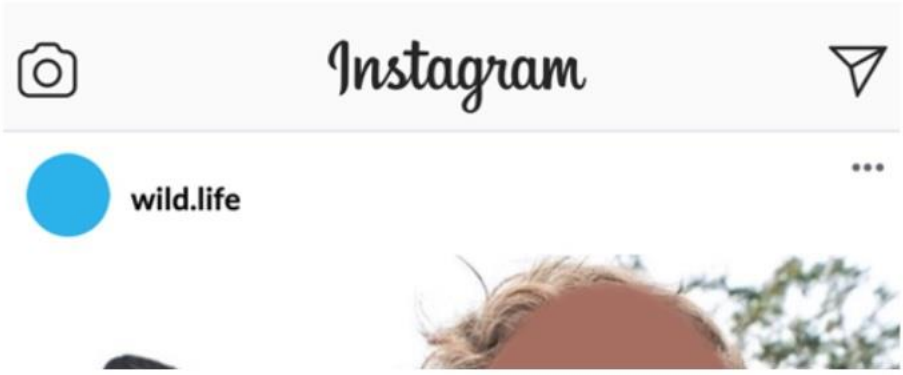
Group 3: Familiar and Regular

Please examine the following Instagram post and comment. When you are finished, please continue with the survey.



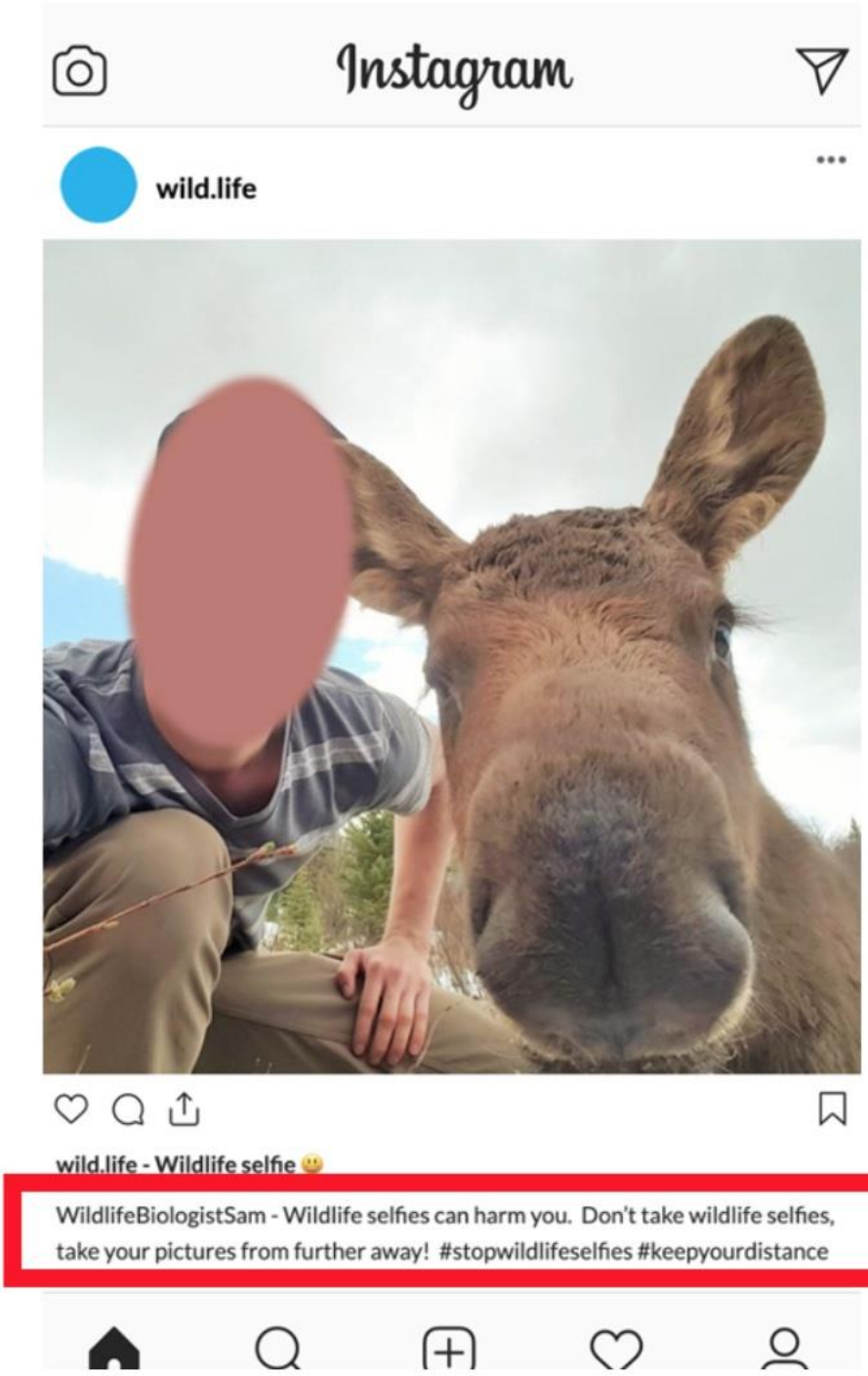
Group 4: Unfamiliar and Regular

Please examine the following Instagram post and comment. When you are finished, please continue with the survey.



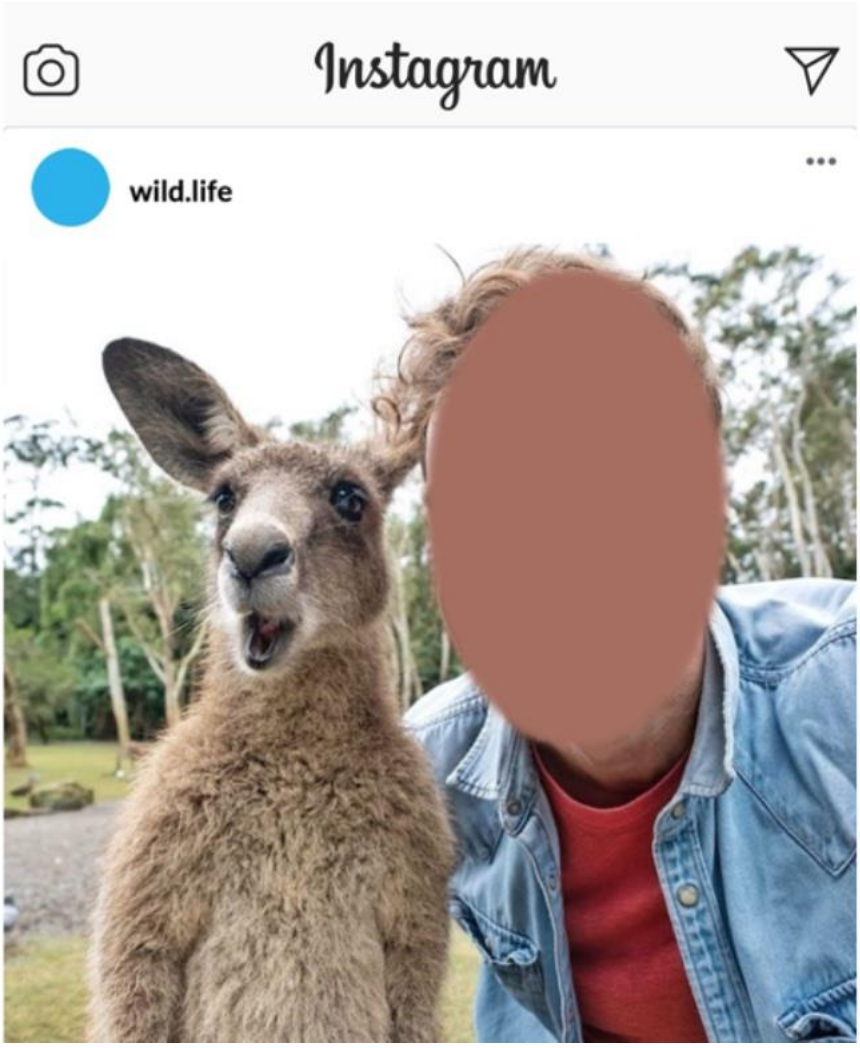
Group 5: Familiar and Scientist

Please examine the following Instagram post and comment. When you are finished, please continue with the survey.


Instagram
wild.life
wild.life - Wildlife selfie 😃
WildlifeBiologistSam - Wildlife selfies can harm you. Don't take wildlife selfies, take your pictures from further away! #stopwildlifeselfies #keepyourdistance

Group 6: Unfamiliar and Scientist

Please examine the following Instagram post and comment. When you are finished, please continue with the survey.



Group 7: Control (no stimuli presented)

Please click below to continue on with the survey.

Familiarity Manipulation Check

Were you shown a photo on a previous screen?

- ○ Yes
- ○ No

Please respond to the following question.

1 = not familiar at all	2	3 = neither not familiar or familiar	4	5 = extremely familiar

How familiar are you with the animal in the photo you just saw?	○	○	○	○	○

Please respond to the following question.

	1 = never	2	3	4	5 = I frequently encounter this animal
How often have you seen this animal (from the photo) in person?	○	○	○	○	○

Credibility Manipulation Check

Were you shown an Instagram post?

○ Yes
○ No

Please respond to the following statement.

	1 = not at all credible	2	3 = neither credible or not credible	4	5 = extremely credible

In general, I find the information in the Instagram comment I read to be...	○	○	○	○	○

Please respond to the following questions.

	1 = very low	2	3 = neither high or low	4	5 = very high
How would you rate the authority of the author of the comment you previously read?	○	○	○	○	○
How would you rate the trustworthiness of the author of the comment you previously read?	○	○	○	○	○

Demographics

How old are you?

- ○ Under 18
- ○ 18-24 years old
- ○ 25-34 years old
- ○ 35-44 years old
- ○ 45-54 years old
- ○ 55-64 years old
- ○ 65+ years old

Appendix C: Official/Final Survey

Informed Consent

Dear Participant,

My name is Paige Nankey and I am a researcher from Colorado State University in the Journalism and Media Communication department. I am conducting a research study on the appearance of wildlife on Instagram and how credibility can play a role in this. The title of the project is Wildlife on Instagram. The Principal Investigator is Katie Abrams (Journalism and Media Communication) and I am the Co-Principal Investigator.

We would like you to take an anonymous online survey. Participation will take approximately 6 to 8 minutes. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participation at any time without penalty.

We will not collect your name or personal identifiers. When we report and share the data to others, we will combine the data from all participants. While there are no direct benefits to you, we hope to gain more knowledge on credibility in an online setting, especially on social media platforms like Instagram.

There are no known risks associated with participating in this study. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential (but unknown) risks.

To indicate your consent to participate in this research and to continue on to the survey, please respond to question below.

If you have any questions about the research, please contact Paige Nankey at

paige.nankey@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at: RICRO_IRB@mail.colostate.edu; 970-491-1553.

Katie Abrams (Associate Professor) Paige Nankey (Student)

Please choose one of the following statements.

- ○ Yes, I have read the above information and consent to participate in this survey.
- ○ No, I do not consent to participate in this survey.

Instagram Usage

How often do you use Instagram?

- ○ Several times a day
- ○ Only once per day
- ○ Only once per week
- ○ Less frequent than once per week
- ○ I do not use Instagram

Would you consider Instagram the main social media platform you use?

- ○ Yes
- ○ No
- ○ No

Have you ever taken a selfie?

○ Yes
○ No

Have you ever taken a selfie with a wild animal?

○ Yes
○ No

Deference to Authority

Please respond to the following statements.

	1 = disagree very much	2 = disagree	3 = slightly disagree	4 = neither agree nor disagree	5 = slightly agree	6 = agree	7 = agree very much
Those with authority know what is best for the public	○	○	○	○	○	○	○
Those with authority should do what they think is best, even if they have to persuade people that it is right.	○	○	○	○	○	○	○

Risk Perception

How risky do you believe it is...

	1 = not risky at all	2 = slightly risky	3 = moderately risky	4 = very risky	5 = extremely risky
... to approach wildlife?	○	○	○	○	○
... to take a wildlife selfie?	○	○	○	○	○
... to not move away from wildlife that is approaching you?	○	○	○	○	○
... to take a photo of someone else approaching wildlife?	○	○	○	○	○

Group 1: Familiar Species and Government Commenter

Please read the description below and examine the following Instagram post and comment made by the U.S. Wildlife Conservation Agency. When you are finished, please continue on.

The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations.


Instagram
wild.life
wild.life - Wildlife selfie
USwildlifeconservationagency - Wildlife selfies can harm you. Don't take wildlife selfies, take your pictures from further away! #stopwildlifeselfies #keepyourdistance

Group 2: Unfamiliar Species and Government Commenter

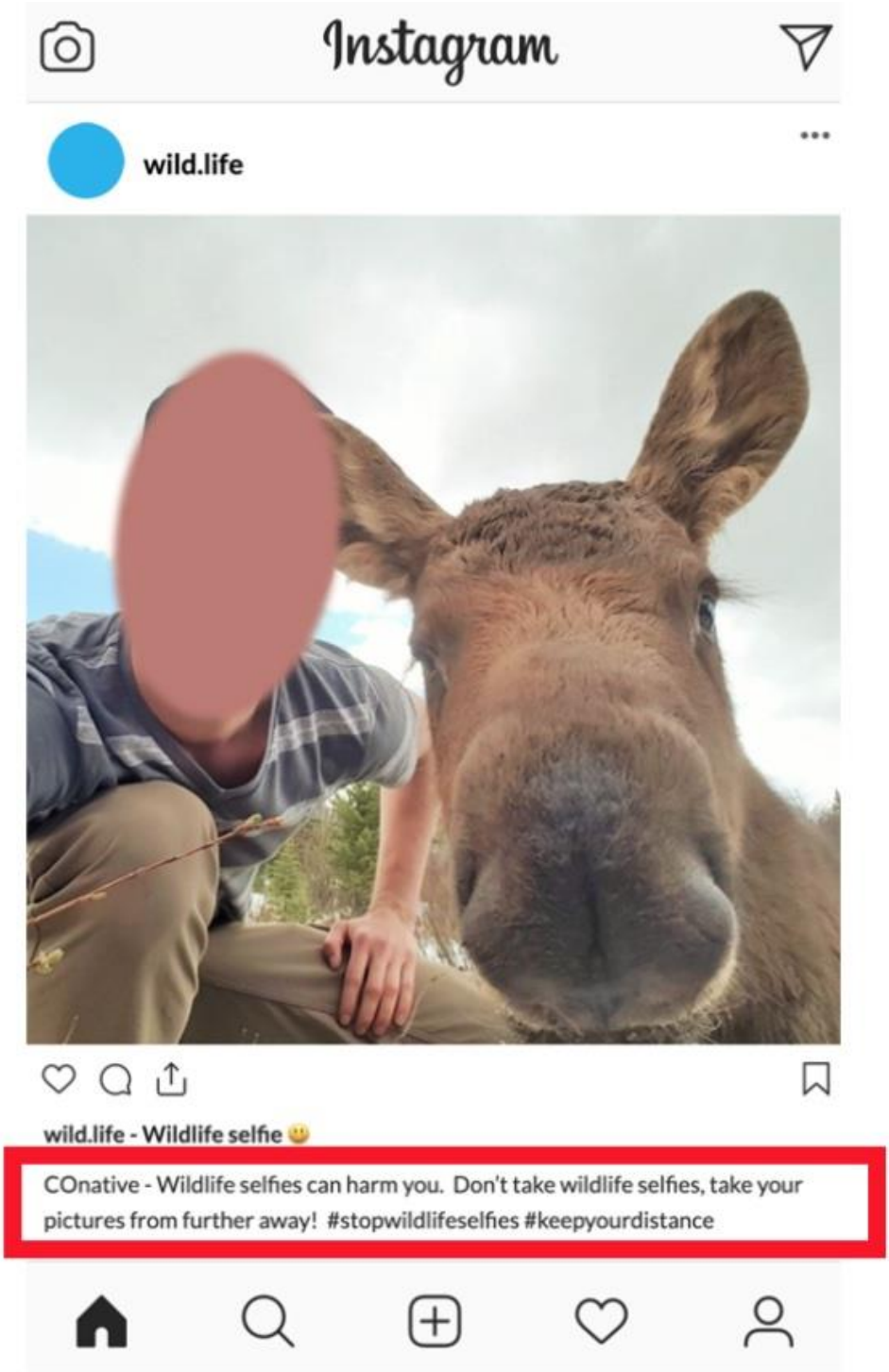
Please read the description below and examine the following Instagram post and comment made by the U.S. Wildlife Conservation Agency. When you are finished, please continue on.

The U.S. Wildlife Conservation Agency is a federal government agency that works to promote the conservation of wildlife across the United States. Through enacting and enforcing laws to protect and conserve wildlife, this agency works to promote the continued existence of natural environments for future generations.

Group 3: Familiar Species and Regular Commenter

Please read the description below and examine the following Instagram post and comment made by a regular Instagram user. When you are finished, please continue on.

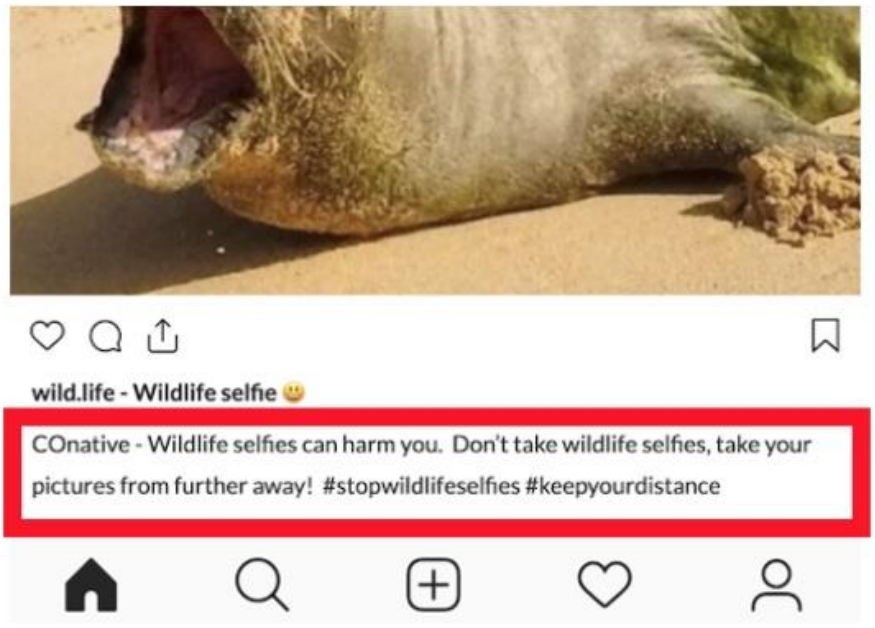
COnative is a regular Instagram user who resides in the state of Colorado. This user is not professionally related to the wildlife conservation field or any organization in this field.


Instagram
wild.life
wild.life - Wildlife selfie
COnative - Wildlife selfies can harm you. Don't take wildlife selfies, take your pictures from further away! #stopwildlifeselfies #keepyourdistance

Group 4: Unfamiliar Species and Regular Commenter

Please read the description below and examine the following Instagram post and comment made by a regular Instagram user. When you are finished, please continue on.

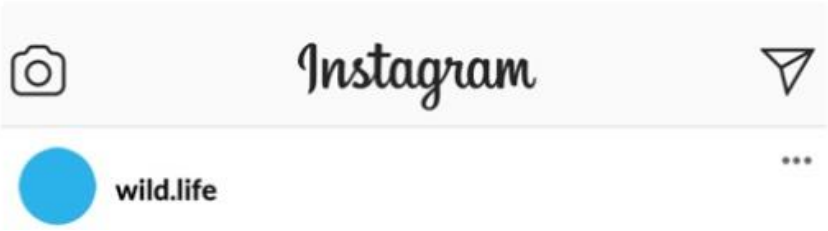
COnative is a regular Instagram user who resides in the state of Colorado. This user is not professionally related to the wildlife conservation field or any organization in this field.



Group 5: Familiar Species and Scientist Commenter

Please read the description below and examine the following Instagram post and comment made by an independent wildlife biologist. When you are finished, please continue on.

Sam is a wildlife biologist who works professionally in the wildlife conservation field. This is a personal social media account unrelated to a wildlife conservation organization.



Group 6: Unfamiliar Species and Scientist Commenter

Please read the description below and examine the following Instagram post and comment made by an independent wildlife biologist. When you are finished, please continue on.

Sam is a wildlife biologist who works professionally in the wildlife conservation field. This is a personal social media account unrelated to a wildlife conservation organization.

Group 7: Control (no stimuli presented)

Please click below to continue on.

Behavioral Belief

Taking photos of myself close to wildlife...

	1 = strongly disagree	2 = disagree	3 = neither disagree or agree	4 = agree	5 = strongly agree
Is generally harmless to wildlfie.	○	○	○	○	○
Is unlikely to be risky to me.	○	○	○	○	○

Is worth it to create memories of my experience.	○	○	○	○	○
Is thrilling	○	○	○	○	○
Is important in showing my appreciation for wildlife.	○	○	○	○	○
Is important for how I want to be perceived by others.	○	○	○	○	○

Behavioral Intention

Please respond to the following questions.

	1 = very unlikely	2 = unlikely	3 = neither unlikely or likely	4 = likely	5 = very likely
Do you think you will take a wildlife selfie (like the one you just saw) in the future?	○	○	○	○	○
How likely is it that you will approach wildlife in the future to take a picture?	○	○	○	○	○

Demographics

How old are you?

- ○ Under 18
- ○ 18-24 years old
- ○ 25-34 years old
- ○ 35-44 years old
- ○ 45-54 years old
- ○ 55-64 years old
- ○ 65+ years old

How do you describe yourself?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ [ ] Prefer to self-describe
- ○ Prefer not to say

How would you describe your political affiliation?

- ○ Republican
- ○ Democrat
- ○ Independent
- ○ Other
- ○ Prefer not to say

Familiarity Manipulation Check

How familiar are you with the animal in the photo you just saw?

- ○ Not at all familiar
- ○ Slightly familiar
- ○ Moderately familiar
- ○ Very familiar
- ○ Extremely familiar

How often have you seen this animal (from the photo) in the wild?

- ○ Never
- ○ I have seen this animal once
- ○ I have seen this animal a few times
- ○ I have seen this animal somewhat frequently
- ○ I frequently encounter this animal

Credibility Manipulation Check

In general, I find the information in the Instagram comment I read to be...

- ○ Not at all credible
- ○ Slightly credible
- ○ Moderately credible
- ○ Very credible
- ○ Extremely credible

How would you rate the...

	1 = very low	2 = low	3 = neither high or low	4 = high	5 = very high
... authority of the author of the comment you previously read?	○	○	○	○	○
... trustworthiness of the author of the comment you previously read?	○	○	○	○	○