

**Local versus exotic wildlife: A basic qualitative study on the
influence of experience on value**

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Wildlife and wild places across the globe are threatened on a variety of fronts. There is no panacea for the combined effects of climate change, habitat destruction, pollution, and invasive species. Individual action, however, can be the foundation of a greater, systemic movement towards a pro-environmental future (Bouman & Steg, 2019; Gifford & Nilsson, 2014).

According to the Value-Belief-Norm Theory (Stern et al., 1999), value is the basis on which action is taken. As such, understanding how people value animals and their habitats is vital to inspiring pro-environmental behaviors.

People value various animals differently. Therefore, how people take action around different species varies greatly. Ballouard, Brischoux, and Bonnet (2011) studied school children in France to assess their conservation knowledge and intention to protect animals. The researchers found that children knew the most about and chose to conserve animals that were frequently featured online, often exotic and charismatic species. The children knew, but cared little for their local wildlife. They were more prone to protect exotic species than local ones. This value gap can result in the decline of species that are vital, but less inspiring than their exotic counterparts. Understanding the root cause of this distinction can help bridge the gap between local and exotic wildlife.

Ballouard, Brischoux, and Bonnet's (2011) study revealed a variety of possible influences on the differing values between local and exotic animals. An individual's exposure to a species, both tangible (e.g. at the zoo) and virtual (e.g. on the internet), proved to be an important variable in determining value. Wildlife experiences have a powerful influence on how an individual

values a species and the natural world as a whole (Deruiter, 2010; Soga et al., 2016).

Conservationists can attempt to inspire pro-environmental behavior by identifying meaningful experiences that influence the values at its core.

Wildlife conservation necessitates the protection of all species, regardless of perceived charisma, as each has a vital role to play in a healthy global ecosystem. This cannot happen without action, specifically action that stems from pro-environmental behavior. Wildlife experiences could be vital in fostering more equal values and action across species. We hope to build toward this possible future and understand how people make meaning around those experiences that can potentially be leveraged for action by investigating the following research question: in what way does a person's experience with wildlife affect how that person values exotic versus native wildlife?

Methods

We took a basic qualitative research approach, based on social constructivism (Merriam, 2009, p. 24), to better understand the values participants place on local versus exotic wildlife and how their experiences influence those values. In constructivist philosophy, valuations and meaning making do not take place in a vacuum. We used a case study approach to account for complex social context and the possibility of multiple variables of potential importance in assigning value. According to Merriam (2009), case studies are particularly effective in 'experience' research. Case study research is holistic and allows for greater insights into the individuals' meaning making around an experience (Merriam, 2009, p. 40-45). Comparing multiple cases and interpreting participants' meanings during their valuative experiences gave us an opportunity to construct nascent hypotheses on which further research can be conducted.

We used a combination of a digital survey, an electronic written prompt, and a video interview using Zoom in order to triangulate our data (Drisko, 2005). We first sent out an initial survey through our networks, via email and social media platforms (LinkedIn, Facebook, etc), that was designed to help us understand in what ways participants have had experiences with local and exotic wildlife (Appendix A). It was also designed to allow participants to operationally define “local,” “exotic,” and “wildlife” for themselves. We asked participants to list their experiences with local and exotic wildlife, as well as to select *at least* one of the following: online/media, TV/films, zoos/aquariums, parks/outdoors, and ‘other’ with space to go into more detail. Participants also had to describe one *meaningful* experience with nature in their local area. In the framework of this survey, we define a meaningful experience as one that had an impact on the individual’s beliefs, values, or perspectives after an observation of or interaction with wildlife (Morse, 2013).

We reviewed participants’ responses and divided them into two categories: those who described a direct experience with nature and those who described an indirect experience with nature. We determined these categories inductively after recognizing a direct/indirect pattern in the responses. For the purpose of this study, we defined *direct* experiences with nature as having direct physical contact with wildlife or mentioning a specific species in their response (Morse, 2013; Soga et al., 2016). We defined *indirect* experiences with nature as the mention of outdoor leisure activities, such as kayaking, running, hiking, bird watching, etc. Within those categories, we also found participants who stated they had limited experience with nature. If participants self-reported having limited experiences with wildlife, we coded them as “Limited/Direct” or

“Limited/Indirect” (Table 1A). We individually coded the responses as direct, indirect, limited/direct, or limited/indirect and verified the coding as a group.

After coding the participants, we looked at what language they used to describe their experience and how detailed their open-ended responses were. We selected participants non-probabilistically as we wanted to gain deeper insight and understanding into their meaning-making and this sample was the most information rich (Merriam, 2009, p.77). Based on the language and level of detail, we chose six interviewees. We chose two interviewees who fell into the “direct” category, two interviewees who fell in the “indirect” category, one interviewee who fell into the “limited/direct” category, and one interviewee who fell into the “limited/indirect” category.

Prior to their interviews, we asked interviewees to respond to two short electronic writing prompts. The prompts asked them to list any five animals that should be protected, why, and in what ways people might help the animals that they listed (Appendix B). In our semi-structured interviews, we asked interviewees to define local and exotic, if they had more experiences with local or exotic wildlife, describe another meaningful experience they had with nature, describe a time that they felt connected to wildlife, and describe an action item they would take to conserve a selected species (Appendix C). We also asked what made the experience they described in the initial survey meaningful and what makes an experience more meaningful than another.

Data Analysis

We used thematic coding to analyze the survey responses, written responses, and interviews to assess meaning made by participants based on their experiences in nature or with wildlife. We created priori codes based on the literature around how people create meaning from

experiences and, in turn, value wildlife (Ballouard et al., 2011; Stern et al., 1999; Soga et al., 2016). The priori codes are: direct and indirect experience (Appendix D1), local and exotic experience (Appendix D2), and conservation action (Table 1A). Multiple coders assessed the data and compared the priori codes found by each coder (Berends & Johnston, 2005).

Table 1A

Priori and A Priori Codes and Examples from Participant Responses

Priori Codes	Examples
Direct Experience	<p>“As I was walking along the beach, um, I saw someone left a crab cage out there and I didn’t see anyone in the local vicinity so I went over to see it and it turns out like there was a crab inside.” #55</p> <p>“...’cause I was like ‘Was that an eagle?’ And I looked it up and I discovered that it certainly was.” #57</p> <p>“all of sudden, between me and my friend...I saw a humongous deer” #57</p>
Indirect Experience	<p>“I’ve gone on hikes since I was really little, uhm, and it’s just something that I like to do in order to get exercise but also just to kind of decompress...” #73</p> <p>“it feels even better when like you’re somehow involved in nature and near nature just like seeing trees and water” #98</p>
Local Experience	<p>“...in terms of local wildlife, I mean obviously, you know, as raccoons have become more common, aside from my initial experience with them, I’ve seen them... meandering the streets... going through trash bins... little encounters like that” - Participant #55</p> <p>“...I...see a lot of local ...wildlife such as deer...rabbits all of that... I also stop and kind of appreciate it when I do see it. And... I think you know just see-watching birds kind of fly in the backyard I’ll look at that and I’ll appreciate that so I think I have more experience with that...” Participant #73</p>

Exotic Experience	<p>“And I was this close to... elephants and lions and buffalo and hyena and wild dogs. And I mean that was in-- absolutely incredible and breathtaking to see animals in their natural habitat... I mean, having these close encounters with these exotic animals you don’t get to see in their natural habitat...”- Participant #92</p> <p>“I have also been to the west coast... a few years back too... I’ll never forget I actually got to see a rattlesnake... again this is in their, you know, natural habitat”- Participant #55</p>
Conservation Action	<p>“I think there are definitely a lot of programs that you can donate to” #73</p> <p>“Raising awareness and sharing those resources with other people...is different ways that you could kind of contribute to helping save...endangered species” #73</p> <p>“I think donating is like the way to make a difference. “98</p>

After the initial round of coding, ‘limited’ was eliminated as an experience type because, although there were participants who fell in that category (self-identified), they still referred to direct or indirect experiences in nature throughout their responses. Using an inductive process, we created the following codes and re-analyzed the responses: direct and indirect conservation action, local and exotic conservation action, local and exotic species, and meaningful experience language (Table 1B). We coded for meaningful experience language (Table 2) based off of Morse’s (2013) phenomenological framework. Morse coded the language participants used to describe their experience on a wilderness rafting journey. Using Morse’s work as a jumping-off point, we inductively coded six categories of meaningful language. These codes illustrate the potential connection to the value participants placed on their experiences with wildlife.

Table 1B

Priori and A Priori Codes and Examples from Participant Responses

<u>Inductive Codes</u>	<u>Examples</u>
Direct Conservation Action	<p>“if we get like cans, or something, we always cut the plastic that comes on top because I read that that’s harmful to ocean animals and birds.”#57</p> <p>“... our yard is a “wildlife certified habitat... “ - Participant #16</p>
Indirect Conservation Action	<p>“I also think that uhm besides that just raising awareness and sharing those resources with other people is different ways that you could kind of contribute” #73</p> <p>“You could make [protecting the environment] more of a focus across the board in all classrooms. I could work with my school building or administrators to help make that possible.” #92</p>
Local Conservation Action	<p>“I do try to use that example, um, of the striped bass uh, to bring up other species that are endangered” #55</p> <p>“I just tried to make my... environment around there even more habitable for them. So providing shelter... food sources, water source, things like that” #16</p>
Exotic Conservation Action	<p>“I would love to donate... to the whale wildlife” #57</p> <p>“I made some donations towards charities that work with animals... Elephants in particular. “ #92</p>
Local Species	<p>“I did not know that there was a high... um... volume of eagles in New York City” #57</p> <p>“I see a lot of local wildlife such as deer... rabbits all of that”#73</p>

	“Outside of pigeons we do have cardinals, blue jays, sparrows.” #55
	“Actually seeing a big gigantic blue fish” #55
Exotic Species	“seeing an alligator in their natural habitat” #55
	“Snorkeling...with sharks...with dolphins in the distance.” #92
Meaningful Experience	“...it was meaningful because I got to interact with animals or see animals that you wouldn’t see every single day” #92
	“...but seeing it in person and then..., even being able to like hold the animal or... directly interact with them, it takes it to a whole nother level and you just realize that this is a being that ya know is living and breathing right here...”- Participant #16

We coded participant responses by highlighting the text that corresponded to a code.

Some participants self-identified as a code, while others were coded based off of their responses.

After further analysis of the data, we identified the following themes:

- Theme 1: Experience Type (Indirect vs Direct)
- Theme 2: Experiences with Local and Exotic Wildlife
- Theme 3: Species Conservation and Action
- Theme 4: Language Use for Meaningful Experiences

Finally, we analyzed the themes for their connection to value.

Results

We developed the four themes through the lens of how participants value nature and wildlife (Figure 1). Through further analysis we identified connections and patterns between the themes themselves (Figure 2).

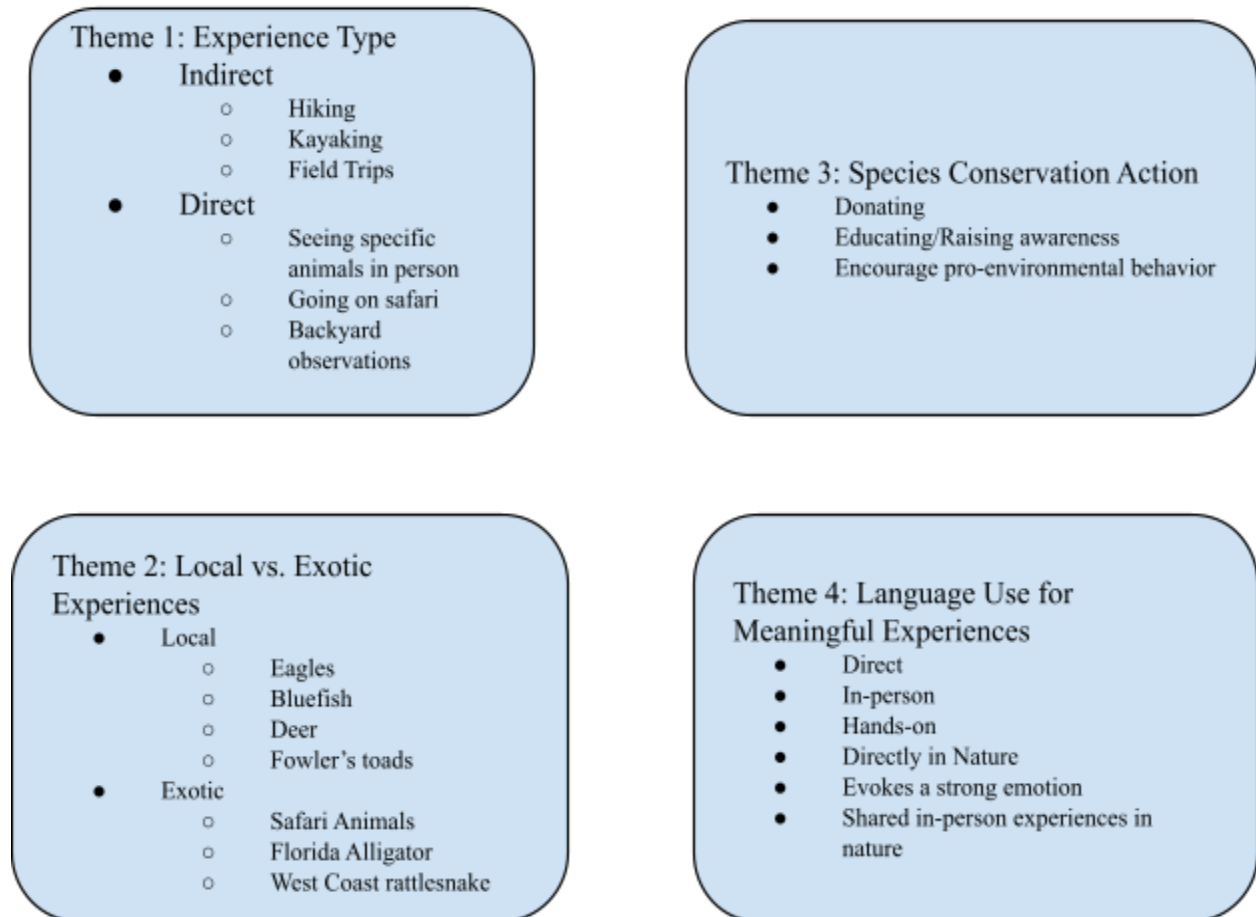
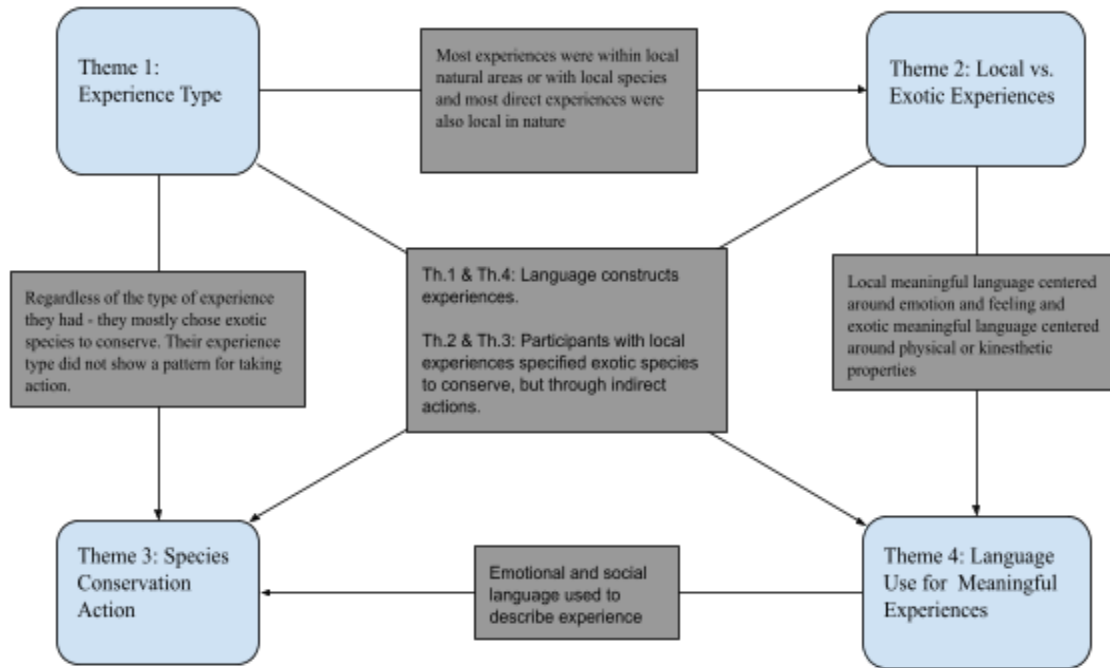
Figure 1*Visual Model for Themes*

Figure 1. This figure models our four themes and includes examples from participants that we used for coding, which helped create the themes.

Figure 2
Visual Model for Theme Connections



This figure models the themes and the connections between each other. There was a connection between Theme 1 to Theme 2 and Theme 4, between Theme 2 and Theme 4, and between Theme 3 and Theme 4. However, there were no connections, or contradictory statements between Theme 2 to Theme 3, and Theme 1 to Theme 3.

Figure 2. This figure models the themes and their connections between each other.

Direct v. Indirect, Local v. Exotic

From the meaningful experiences we categorized as direct or indirect, we found that the majority of the experiences shared were direct experiences (Appendix E1) and people were able to recall specific instances. Participant #57 was able to recall a direct experience with a deer;

“And I was coming home from a friend's house and she let me out of the car and I was walking into my house. And all of sudden, between me and my friend, Dora, was a humongous deer. And I was terrified...”

Of those direct experiences most occurred in outdoor areas or parks. Direct experiences spanned a variety of settings to experience wildlife: zoos/aquariums, online/media, and ‘other,’ which

refers to a participant's experience at a library with visiting animals. Participant #16 was able to recall a direct experience in an outdoor environment;

“I have Fowler's toads that live in my backyard and make an appearance every summer. I've created my yard to be a safe house for them and the many birds that come to visit by providing food, shelter and water.” -Participant #16

Indirect experiences that participants were able to recall either took place in a park or an outdoor setting or at a zoo or aquarium (Appendix E2). There was a connection between experience type and whether the experience included local or exotic wildlife. A majority of the experiences involved a local natural area or local species. A number of those local experiences were direct, specific instances that a participant could recall. Participant #55 recalled a local walk along a beach and seeing a crab in a precarious situation;

“One incident I can recall in particular occurred while wandering the beach near the Rockaways. It was closer to the evening, and most beach patrons had gone home since the intensity of the sun was well past its prime. As I walked closer to the water, I spotted movement just beneath the crest of the wave. It was a crab, and ironically, it was helping itself to bait left in a crab trap.”

Few participants described meaningful experiences with exotic wildlife. Of those experiences, however, a majority were direct (Appendix E1). There were two experiences that, due to a lack of descriptive language, could not be classified as being either a local or exotic experience and were labeled as unspecified. Both of those experiences occurred in a zoo.

Language Use for Meaningful Experiences

Most participants were verbose in their experience descriptions. The surveys and interviews asked the participants to describe a meaningful experience. Based on their use of

language, and using Morse’s (2013) framework, we inductively coded their responses into six categories: strong emotion, feeling, physical, social, childhood, and spiritual (Table 2).

Table 2

This table pulls descriptive language from each type of meaningful experience shared by participants and categorizes the language into five groups. The numbers indicate the number of times it was said across all responses

Meaningful Language Category	Indirect Experience Language	Direct Experience Language	Local Experience Language	Exotic Experience Language
Strong Emotion	Eye opening	Surprised (2), scared (2), nervous, shocking, intriguing (2), taken aback, eye opening, fascinated (2)	Surprised, scared (2), shocking, intrigued, taken aback, eye opening (2) fascinated (2)	Nervous (2) intriguing
Feeling	Enjoy (2), appreciated, relaxing, calming	Personal (2), interesting, interested, nice (2)	Appreciate, enjoy (3), appreciated (2), relaxing, relax, personal (2), calming, nice (2), interested, interesting,	Personal
Physical	Interact, interaction	Close encounter, tangible, in person (2), doing is deeper, interaction	Interact	Tangible, close encounter, in person (2), “doing is deeper”
Social	Share (2), shared (2)	sharing	Share, sharing	sharing
Childhood	Childhood (2)		Childhood (3)	

Spiritual

Meditation, spiritual
connection

Philosophical trance

Philosophical trance,
meditation, spiritual
connection

Strong emotional and feeling descriptive language were most often used to describe meaningful experiences in nature or with wildlife. Emotional meaningful language was used most often to describe a direct experience, whereas language around feeling and social aspects was used to describe indirect experiences. The following participant used emotional language to describe a direct experience they had;

“Um, I did not know that there was a high... um... volume of eagles in New York City. And, um... I was also just sitting in my living room and it kinda crashed into the window, so it was really surprising! So, I, um... I’ll never forget it, ‘cause I was--I was scared” -
Participant #57

Participants described their local experiences using predominantly emotional language, whereas they described exotic experiences with physical or kinesthetic language. Participant #92 described their experience with adopting a whale;

“When I was younger, I... my mother adopted a whale for me (laughs). And every few weeks, I would get letters updating us on this whale...and it was tangible, real life connection...It wasn’t just some abstract idea of a whale”

There were differences in the way participants described meaningful experiences between both experience types and whether the experience was with local or exotic nature and species. This could provide insight into the way people use language to describe the value of an experience with wildlife.

Species Conservation Action

Participants were also asked to describe a potential or actual conservation action that they could take and what species or animals they felt called for conservation action. Most actions listed were either donations or education/awareness. Conservation actions were categorized as direct if the participant stated they took that action and indirect if they gave an example of a conservation action but didn't personally participate. The species they listed were also categorized as local and exotic. Participant #98 described their conservation action as follows;

“...outside of like teaching about them, you know? But I haven't really done anything myself. But if I had unlimited access I think donating is like the way to make a difference.”

This participant directly participates in education and raising awareness but takes indirect action through donation.

Many participants were able to describe direct experiences, mostly with local nature. However, they were not able to describe many direct actions they do or could take to help local species. Many of the actions described contained little detail and could not be categorized as being targeted to local or exotic species. Participant #73 described conservation actions as follows:

“We need to come up with better solutions to not pollute our planet. I think a big reason a lot of the animals are endangered is because of pollution and global warming. You could also donate and raise awareness for certain programs and groups that care for the environment.”

There wasn't any strong indication that a meaningful experience type or a local or exotic experience had an impact on conservation action. Regardless of experience type, however, participants chose to list exotic species more often as needing conservation action (Table 3).

There was an interesting pattern between local versus exotic meaningful experiences and the description of conservation actions. Those who were able to describe mostly meaningful local experiences listed mostly indirect conservation actions (Appendix E3). Also, those who could describe more local meaningful experiences all identified mostly exotic species as in need of conservation action. One participant who noted only local meaningful experiences had this to say about species in need of conservation;

“I think we should protect polar bears because they're going extinct... I think honey bees and I don't know a lot about it but I know they are in danger of disappearing and we need them for pollination. I also think bald eagles because they're endangered and they are a symbol of America... Also tigers because they are also endangered and it would be terrible if they were gone forever, and they're beautiful... I think whales should be protected because they have been hunted.”

Meaningful experiences and their characteristics have varying impacts on the conservation actions people are indirectly aware of or directly participate in, as well as the species that people see as needing conservation action. We did not dig deeper into meaningful language around conservation action because some participants were not as descriptive in their reasoning for species needing conservation action.

Table 3

This table illustrates the type of experiences each participant had and the type of species they listed as needing conservation action

Participant	Total Direct Local Experience	Total Direct Exotic Experience	Total Indirect Local Experience	Total Indirect Exotic Experience	Total Exotic Species Listed	Total Local Species Listed
#98	0	0	3	0	3	2

#92	1	2	1	0	4	1
#73	0	0	2	0	4	1
#57	2	0	0	0	4	1
#55	4	4	0	0	1	4
#16	4	1	1	1	5	0

Discussion

We propose that the value people place on local versus exotic wildlife is influenced by experience and language. Our preliminary research suggests that experiences could have myriad impacts on how one values and expresses value toward local versus exotic species. The most common pattern we identified was a connection our participants made between a meaningful experience, an elicited emotion, and the resultant value of wildlife. When applied in tandem with the Value-Belief-Norm Theory (Stern et al., 1999), a new pattern emerges. Experiences elicit emotion, emotion influences value, the belief that the valued object is threatened results in a personal norm, and that personal norm is the basis on which individuals take action.

We found that although our participants shared more direct experiences with local wildlife, they tended to list mostly exotic species as those in need of conservation. Understanding the root cause of this distinction could help bridge the gap between local and exotic wildlife.

That being said, we found that among our participants both types of experiences were linked to intended conservation action for exotic species. These findings support research by Soga et al. (2016) that found both direct and indirect experiences with wildlife were correlated with a willingness to conserve. Further research should be conducted into how to translate wildlife experiences into conservation action for local species.

According to Kudryavsev et al. (2012) a person's first-hand direct experiences contribute to their place meaning or symbolic bonds with a place. We found that most of our participants were able to describe a direct experience with nature or wildlife. Experience and place have been found to be determinants of wildlife value (Deruiter, 2010). All participants were able to express meaningful experiences whether direct or indirect. Those experiences were with both local and exotic spaces or wildlife. Participants' direct meaningful experiences illustrate to us a connection between a meaningful experience, provoking emotion, and discussing the value of seeing these animals.

We found that language was used both to describe and construct experiences. Using language to describe an experience molds personal ideas of experiences (Morse, 2013). We found that the meaningful language used by participants reflected their stated value and willingness to conserve a species. The language used to describe direct, indirect, local, and exotic experiences appears to have influenced the creation of value from those experiences. This is reflected in how participants' stated value changed before and after describing their meaningful experience. Digging deeper into how language influences and reflects different experiences could inform the greater literature on value creation and the use of language.

Understanding how people value animals and their habitats is vital to inspiring pro-environmental behaviors. An individual's exposure to a species, both tangible (ex. at the zoo) and virtual (ex. on the internet), proved to be an important variable in determining value. However, we found that among our participants, a meaningful experience did not necessarily result in any meaningful action. Among our participants, wildlife experiences had an influence on how an individual values a species, but that value largely did not result in meaningful action. According to Value-Belief-Norm Theory (Stern et al., 1999), this suggests that our participants, while able to identify conservation actions, did not believe their actions could restore the threatened wildlife.

Future research should focus on the discrepancy between shared experiences with mostly local wildlife but greater value placed on conservation action for exotic species. Specifically, future research could investigate why experiences with local wildlife do not translate into a willingness or intention to conserve local species.

Limitations

For the purpose of this study, the interview process proved to be a limitation. If the study was conducted with the intention of publication, the interview process would have been approached differently. We would use only one researcher to conduct the interviews and build an interview training protocol into our process. This would help to maintain consistency across the interviews.

Another limitation of the study was participant selection. Given the time constraints of the study, most of the participants ended up being part of our social and professional networks. This may have resulted in the selection of participants that already had a connection to nature

and wildlife. Additionally, all of the participants were from the northeast region of the United States. In the future it would be beneficial to increase the scope of the study to include other parts of the country and to recruit participants that are not within the researchers' social and professional networks to ensure validity (Newing, 2010). Selecting case study participants who were descriptive in their initial survey response could have skewed the data towards people who have more experience with nature or wildlife. Furthermore, due to time constraints, member checks as strategy for ensuring validity and reliability (Newing, 2010) were not possible.

The interview questions and writing prompt could be reassessed to ensure that they provide enough data to sufficiently analyze the research question. For example, we did not ask the participants to tell us if they defined the animals they identified in the writing prompt as local or exotic. Asking the participants why they chose exotic or local animals as needing to be conserved would have been good data to collect as it could have contributed to a better understanding of the local versus exotic distinction.

Conclusion

Our basic qualitative study revealed an intricate web of factors that determine people's value of local and exotic wildlife. We found that experiences, and the language used to describe them, had an effect on a person's value of wildlife. We found that our participants placed a greater value on protecting exotic species, despite them having more direct experiences with local wildlife. That being said, both direct and indirect experiences with nature proved to influence a person's value of wildlife as a whole. Despite the evident relationship between experience and value, a meaningful experience did not always translate to meaningful action or pro-environmental behavior. We hope that this basic qualitative study can serve as the foundation

for future research into the qualities that make a wildlife experience meaningful and why experiences don't inspire action equally between local and exotic wildlife. Gaining a deeper understanding of these phenomena can help conservationists more effectively change value and inspire action on behalf of threatened wildlife and wild places.

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Appendix A. Digital Survey Questions

In what ways have you had experiences with local wildlife (native to the area you live)? Check all that apply. If other, please specify.

- Online media
- TV/Film
- Zoo/Aquarium
- Local parks/outdoors
- All apply
- Other: _____

In what ways have you had experiences with exotic wildlife (animals from an area you do not live)? Check all that apply. If other, please specify.

- Online media
- TV/Film
- Zoo/Aquarium
- Local parks/outdoors
- All apply
- Other: _____

Thinking about your local area, describe one meaningful experience that you have had with nature.

Appendix B. Digital Writing Prompt

Protecting Wildlife

Thank you for recently responding to our initial wildlife experience survey and for participating in these follow up questions. Please answer both prompts below to the best of your ability; if you do not know the answer to a question, it is OK to state that. Thank you again for participating in our research!

Email Address: _____

1. List any five animals that, in your opinion, must be protected and why.
2. In what ways might people help the animals that you listed?

Appendix C. Interview Questions

1. How would you describe the environment in which you currently live?
2. In the initial survey we asked you to tell us about a meaningful experience that you have had with nature in your local area. You described **insert specification here**. In your opinion, what made that experience meaningful?
3. What would you say makes an experience more meaningful? Why?
4. Can you recall and describe another meaningful experience you have had with nature or can you describe an experience where the opposite effect happened?

5. Can you tell me about a (another) time that you felt connected to wildlife?
6. In your initial survey, you checked off **insert all checked** as ways you have experienced local wildlife (native to the area you live) and then you choose to expand on an experience **insert specific category**? Why do you think that is?
7. Would you say you have had more experiences with local or exotic wildlife? (Maybe ask to tell more or expand on that or ask in what ways)
8. You mentioned in the questionnaire you wanted to conserve (insert animal). What actions have you taken to help the success of the species. IF NOTHING: Can you think of any ways to help conserve that animal/species if you had access to any resources?
9. Do you have other experiences that you can talk about?

Appendix D. Variable Names and Definitions

Table D1

How Direct and Indirect Experiences Were Defined and Examples

<p>Direct Experiences: having direct physical contact with wildlife, or mentioning a specific species in their response</p>	<p>Indirect Experiences: mentioning outdoor leisure activities, such as kayaking, running, hiking, bird watching, etc.</p>
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<p>“I live in New York City so I have limited interaction with wildlife and nature but last year we did see the most beautiful hawk flying above us and I never forgot it”-Participant #57</p>	<p>“Living in midtown Manhattan, I feel like I don't have as many meaningful experiences as nature as I might like. However I do really enjoy taking walks down the east river along the FDR. It's a nice opportunity to step away from the busyness of the city and be by the water and see the trees. I also have enjoyed field trips my class has gone on to Randall's Island which feels like a nice way to learn about and appreciate nature and local wildlife that's right around us in New York City”-Participant #98</p>
<p>“I have fowlers toads that live in my backyard and make an appearance every summer. I've created by yard to be a safe house for them and the many birds that come to visit by providing food, shelter and water”- Participant #16</p>	<p>“I have had many experiences going on hikes and walking on trails. It is a great place to just relax and enjoy the sounds of nature such as birds chirping and water traveling down a stream.”-Participant #73</p>

Table D2

Examples of Experiences Defined as Local or Exotic by Participants

Experience with Local Wildlife	Experience with Exotic Wildlife
"Yeah, um, so we actually just recently um we have a bunny that seems to love our yard and visit us and seems to not mind our dogs, which is very funny..." -Participant 16	"Well, so I think the most meaningful experience I've had with nature was I was lucky enough to go... on safari for my honeymoon in Africa. And I was this close to... elephants and lions and buffalo and hyena and wild dogs." -Participant #92
"...a meaningful experience in nature, ah makes me think of right like one of the field trips we took to Randall's Island [close to participants living space] like the... where we'd walk through the marshes, you know, and like what was weird is like you feel like you're in nature but there's also like the highway above..." -Participant #98	"Um, outside of New York City, oh yeah there's definitely a few. Um, two years ago I took a trip to Florida... I never had a chance to see an alligator in their natural habitat and, uh, as I was going through the Florida Everglades..."-Participant #55

Appendix E. Results Tables and Figures

Experience Type and Percents of Categorical Experiences

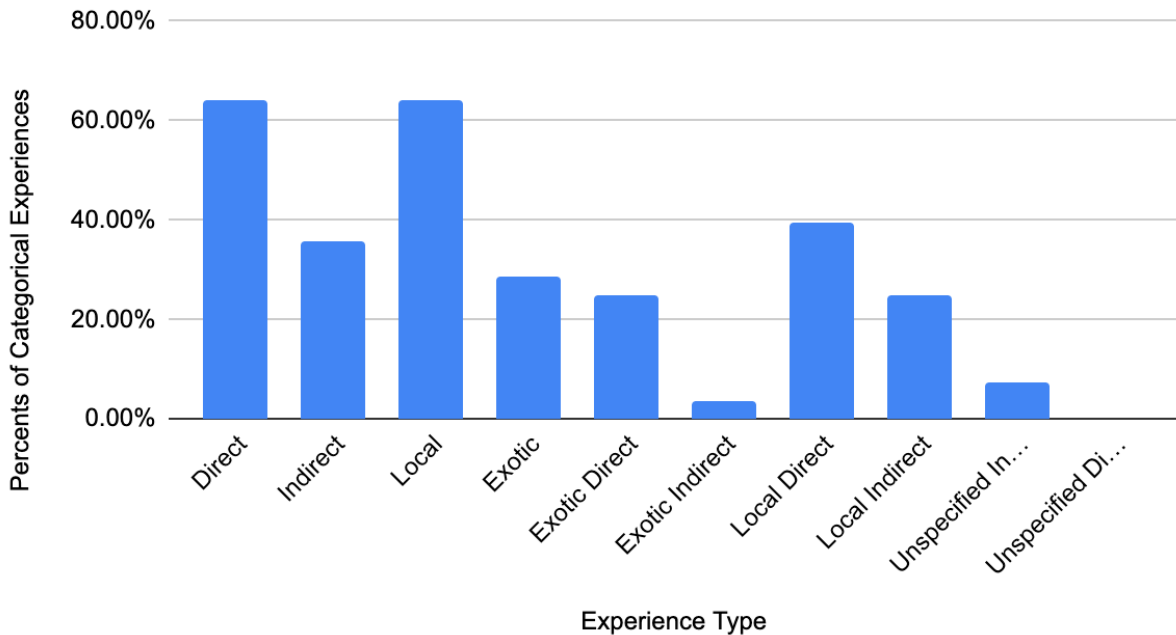


Figure E1. This bar chart depicts the percentages of overall experiences that each category of experience type holds.

Table E2

This table depicts the experience by participants as direct or indirect, whether the experience was local and exotic, and what medium the experience took place in (from the survey categories)

Participant	Direct or Indirect Experience	Exotic or Local Wildlife	Experience Type
#98	Limited Indirect	Local	Parks/Outdoors
	Indirect	Local	Parks/Outdoors
	Indirect	Local	Parks/Outdoors
#92	Indirect	Local	Zoo/Aquarium
	Direct	Exotic	Parks/Outdoors
	Direct	Local	Parks/Outdoors
	Direct	Exotic	Online/Media
#73	Indirect	Local	Parks/Outdoors
	Indirect	Local	Parks/Outdoors
	Indirect	Unspecified (Zoo trip)	Zoo/Aquarium
#57	Limited Direct	Local	Parks/Outdoors
	Direct	Local	Parks/Outdoors
	Indirect	Unspecified (Zoo trip)	Zoo/Aquarium
#55	Direct	Local	Parks/Outdoors
	Limited Direct	Local	Parks/Outdoors
	Direct	Exotic	Parks/Outdoors
	Direct	Local	Parks/Outdoors
	Direct	Exotic	Zoo/Aquarium
	Direct	Exotic	Parks/Outdoors
	Direct	Exotic	Parks/Outdoors
	Direct	Local	Parks/Outdoors
#16	Direct	Local	Parks/Outdoors
	Direct	Local	Parks/Outdoors
	Indirect	Local	Parks/Outdoors
	Direct	Local	Other
	Indirect	Exotic	Zoo/Aquarium
	Direct	Local & Exotic	Online/Media

Table E3

This table depicts the types of actions participants took compared to their local or exotic meaningful experiences

Participant	Meaningful Local Experiences	Meaningful Exotic Experiences	Number of Direct Actions	Number of Indirect Actions	Number of Local Action	Number of Exotic Action	Unspecified
98	3	0	1	2	1	0	2
92	2	2	2	0	0	1	1
73	2	0	0	4	0	0	4
57	2	0	1	4	0	4	0
55	4	4	2	4	2	2	1
16	5	2	2	0	1	1	0