

Wildlife Monitoring and Animal Consumption for Food at Boston College

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Abstract: In spite of multiple daily experiences with sentient non-human animals, most of us do not actively reflect on how these experiences shape our consumption of animals for food. To explore the ways in which individuals' documentation of wildlife interactions affects their relationship with or narrative experience of the consumption of sentient life, we commissioned a group of Boston College students to participate in a citizen science project in which they actively work to catalogue their wildlife encounters and accompanying reflections on animal eating. Through the use of innovative methods and a diverse sample of literature for analysis, our team explored the factors that drive consumption of sentient life with the end goal of creating recommendations to foster a more compassionate & sustainable community.

Keywords: Wildlife, Sentience, Citizen-Science, Animal, Consumption, Narrative

Positionality

We embarked on this project for our Boston College Environmental Research Senior Seminar. As a group, we made a concerted effort to push past the traditional paradigms that govern conservation research. As such, our research design went through numerous iterations and vocabulary shifts, including the elimination of the word "meat," which is present in our Facebook group's original title. With the goal of creating intentionality in our words and actions, our group opted for qualitative analysis of our results incorporating a range of cutting edge literature from sociologists and conservationists alike. In spite of a novel approach to research, our group did not stray from the guiding principles of honest inquiry and objectivity. As such, all data was obtained from willing human and non-human animal human participants with agency and unique opinions. Our positionalities were those of active human participants within a Facebook group creating example posts and probing human human participants to be more thoughtful and reflective in their postings. This status allowed us to maintain our status as leaders within our community and set an example for those looking to reevaluate their ideas of animal consumption and shared sentience. In addition, we have dedicated one of the co-authors of this research project- Elizabeth DiSanto- as the chosen "advocate trustee" to advocate on behalf of our non-human animal human participants, in order to ensure fairness and equity among humans and non-humans in this analysis (Treves et al., 2019). As she identifies as vegan and abstains from consuming any form of animal products, she embodies the deepest values of animal

sentience, is able to engage emotionally with the non-human animal human participants, and is thus fit to conduct the analysis of animal species from a multi-species lens.

Problem

Our research aims to explore the ways in which individuals' documentation of wildlife interactions affects their relationship with or narrative experience of the consumption of sentient life. This topic has broad-reaching implications, considering the numerous implicit and explicit opportunities for improvement incorporated in consuming animals as food. Countless studies have examined the environmental and social implications of animal consumption for food, including animal welfare issues, climate instability, air and water quality deterioration, breaching of worker's rights, to name a few (Compa 2004; Pierre et al., 2015). In light of this area of human growth, our citizen science research holds up a mirror to individuals in moments of interaction with wildlife and allows them space and time to reflect on how their feelings towards living creatures relate to their dietary choices. Oftentimes, we hold the answers to such moral questions, but the pathways to answering them are littered by habit and/or culture. However, simple reflection may result in lifestyle changes. If not, understanding how people justify maintaining their behaviors in the wake of reflection provides information about cognitive dissonance and a knowledge-action gap implicit in such behaviors. Regardless of the outcome, discussion and reflection will assist our research team in answering our questions about people's attitudes towards consumption of sentient beings and the implicit and explicit areas of improvement associated with this.

Research Purpose

In the current study, our research purpose is: to explore the ways in which individuals' documentation of wildlife interactions affects their relationship with, narrative experience, or rationalization of the consumption of sentient life. In other words, the purpose of this research is to create dialogue and promote a productive conversation amongst undergraduate students at Boston College about diets that include the consumption of animal protein. There seems to be a consensus that animals and wildlife have some rights, as evidenced by people's connections with their own companion animals and their more general fascination and respect for wildlife. Ironically, though, the standard western diet remains predicated on animal flesh. This research project also seeks to explore this dichotomy in an attempt to promote biodiversity on campus through student engagement. Additionally, this research project seeks to offer opportunities for amateur or citizen scientists to engage with the larger community.

Our research team is eager to answer important questions about the beliefs and actions of citizen scientists. Allowing them time for reflection and participation in research will open them up to discussing their consumption of sentient life and documenting their wildlife interactions.

From this data, we will be able to draw conclusions about how people justify or understand their own habits and how people perceive themselves in relation with other sentient beings.

Research Intention

With that said, we hope that our research and platform will provide individuals with a reason to venture outdoors, experience sentience life, and experience nature and deep reflection. Furthermore, through the process of reflecting, we hope that these individuals will discover something out about themselves and their relationship to sentient life. Perhaps through interactions with other sentient creatures, our human participants will see the paradox that arises from eating other beings whom they claim to love. Additionally, these wildlife interactions could produce a more nuanced understanding of our responsibility to them and of sharing the Earth with other sentient beings. We also intend for our human participants to recognize how and why their actions may not always act in accordance with their love for sentient beings and their desire to do no harm. As a result, our research will hopefully prompt community members to rethink their animal consumption habits and to feel a stronger connection to other sentient beings. Finally, studying college students is important to our research intention in that college is a pivotal time of change and self-discovery. Because college students are in a new environment, with new wildlife around them and new meal options at dining halls, we hope that this research will be particularly meaningful and impactful for our community. Overall, we hope that our community will develop a deeper understanding of animal sentience, acknowledge the characteristics that humans and animals share including sentience, and prompt college students to reflect on their food choices.

Literature Review

Exploring why it's socially acceptable to eat certain animals but not others is a complex question to answer. Regardless of the answer, human consumption of sentient beings has a profound impact on the sentient beings that they decide to eat. Several studies have been conducted to try to better understand the reasoning behind why some animals are consumed as food and why others are not (Greving et al., 2020; Monteiro et al., 2017; Gilbert 2005; Joy et al., 2001; Amiot et al., 2019; Bastian et al., 2012). In general, the trends in the literature explore compassion for wildlife in citizen science, vegetarian philosophies, ideologies behind eating animals, including carnism, how humans create cognitive distinctions between different animals and animal consumption on a global scale.

Citizen Science

Citizen science is a growing field of research that has a long history in conservation and wildlife studies. In the technological era, citizen science has garnered increased support and usage in scientific inquiry. The crowdsourcing of data from non-professional scientists offers researchers the opportunity to collect longitudinal data over a large geographic scale (Maund et

al., 2020). Citizen Science also provides researchers with the ability to improve environmental protection by building a base of support and educational opportunities in local communities, while also satisfying multiple intrinsic and extrinsic motivations for human human participants. In citizen science projects, the motivations of “values” and “understanding” have been found to be most important in motivating participation in research projects (Maund et al., 2020, 2). Using the Volunteer Functions Inventory (VFI), a validated psychological scale used to understand the motivations and rewards of volunteering, defines “values” as encompassing, “the ability to express altruistic and humanitarian values,” and “understanding as, “permitting new learning experiences and an opportunity to exercise knowledge, skills and abilities” (Maund et al., 2020, 2). The altruistic and humanitarian values that the researchers observed were encapsulated in human human participants citing a desire to protect, conserve, or safeguard wildlife. (Maund et al., 2020). This understanding of these values clearly shows that the sphere of altruistic behavior is not limited only to human beings, but extends to all of sentient life. An example of understanding as a motivating factor would be research by human participants citing a desire to learn more about wildlife or the process of how science is conducted by participating in a citizen science project (Maund et al., 2020).

Emotion is also an important factor in understanding motivations for contributing to citizen science projects. Research suggests that compassion can increase motivation and is an important factor in inspiring the desire to participate in such projects. Compassion was defined as a sort of empathy, but different from it in that it is characterized by, “feelings of concern for others’ suffering,” and often a motivation to want to help (Greving and Kimmerle, 2020, 2). The research team conducted experiments that exposed human human participants to images of foxes and raccoons in different states ranging from cute, neutral, threatening, and distressed. Images of distressed wildlife elicited the greatest compassion and incited the most desire to take part in citizen science projects in subjects’ communities (Greving and Kimmerle, 2020). These measurements of compassion or empathy were garnered by asking human human participants to rank on a 9-point scale a number of emotions from the statement, “When I think about raccoons/foxes, I am/feel . . . ,” which ranged across anger, anxiety, compassion, sadness, and enthusiasm (Greving and Kimmerle, 2020, 5). Images of distressed or neutral raccoons and foxes garnered the highest mean scores for compassion from human human participants (Greving and Kimmerle, 2020).

Citizen science aims to connect the public with scientific research within their own communities, empowering them through engagement with the project. Underscoring the personalization of citizen science, Richardson highlights how her experiences both in life and work have helped her to become more introspective, which we hope our human human participants can attain through their participation in our project (Richardson, 2001). Furthermore, the language chosen by researchers does not reflect social realities, but rather creates them (Richardson, 2001, 36). Thus, engaging with animal sentience offers a critical opportunity to shift social realities to a multi-species approach and embrace the conception of nature as a continuum.

This research offers our team an understanding of citizen science and motivations for participation. The conclusions lead us to the belief that framing the research project as an opportunity to satisfy one's values and understanding of environmental issues, as well as offering a chance to express compassion for wildlife may aid in recruitment and retention of citizen scientists. Through hope and passion, we may frame our project as an exciting way for undergraduates to get involved in science and reflect on their experiences with wildlife.

Meat Disgust, Moral Vegetarians, and Vegetarian Philosophy

A helpful starting point for researching the motivations to consume animals as food is to understand the mindset of individuals who reject animal protein. Those who practice a vegetarian diet abstain from the consumption of sentient life, but may include animal byproducts, such as dairy or eggs, in their diets. However, not every vegetarian has the same motivation and vegetarian diets may vary considerably. Existing literature has explored two distinct motivations for vegetarianism, health vegetarians and moral vegetarians. Health vegetarians refuse animal protein for individual health purposes while moral vegetarians refuse animal protein as they believe doing so is a moral imperative (Monteiro, Pfeiler, Patterson, Milburn 2017). This categorization of vegetarianism motivation can help provide a framework to understand why some animals are socially permissible to consume while others are not.

Further discussed in this study (Monteiro et al., 2017) is the disgust reaction to animal protein, which becomes relevant in the quest to identify why some animals are eaten while others are not. Analyzing the mindset of a moral vegetarian can provide insight into the current animal consumption paradox. Moral vegetarianism usually begins with avoidance of red meat, specifically beef, as red meat is more obviously revolting due to the presence of blood. On the other hand, pork, poultry, and fish are usually drained of their blood before purchase or consumption. This lack of visible blood transforms the image of the dead animal and causes the raw food to lose its evocative power (Monteiro et al., 2017). Perhaps this concept of disgust reaction to animal protein provides a framework or foundation to understand the acceptance of some animals as food and the shunning of other animals for food. One particular concept of great intrigue with moral vegetarianism is preference utilitarianism, a doctrine that states that an action should only be undertaken that protects the preferences of those impacted, which is inherently incompatible with animal consumption (Gilbert 2015).

The Carnism Inventory: Measuring the Ideology of eating Animals

Opposite of labeling those who reject animal consumption with terms such as vegetarian or vegan is the active labeling of those who consume animal protein. Such thinking has led to the development of the term "carnism": a word to define individuals who consume animal protein and a philosophical counterpart to vegetarianism. Instead of accepting animal consumption as the cultural standard, "carnism" seeks to point out the moral hypocrisies of eating animal products and protein from a select few animals (Joy 2001). Carnism's rise coincided with that of

the term's creator, Melanie Joy, which has spawned an organization that exists that seeks to abolish carnism in favor of veganism (Beyond Carnism 2020). In coining this term, vegetarians sought to advance the cause of animal liberation in dichotomizing the conscious choice to love some animals while condoning the slaughter of others.

To understand the prevalence of carnism within society, it is helpful to analyze the underlying components of this belief. This belief commonly rests upon the assumption of a hierarchy between humans and animals in which humans are superior. This perception of animals as inferior is what allows for the perpetuation of carnism and the continuation of the practice of animal consumption. Based on the original conception of carnism and the research of the meat paradox, one component of carnism is the carnistic defense belief, which provides justifications for animal consumption (Moneterio et al., 2016). According to this view, people like animals and do not wish them harmed; however, they also like eating animals for food and are either intent on defending or are unaware of the carnistic system. Therefore, these individuals rely on justifications to reduce their discomfort with the death inherent in killing animals for food consumption (Moneterio et al., 2016).

There is, however, a second, more hostile and hierarchical category of carnistic beliefs: carnistic domination. These beliefs justify the domination, subjugation, and killing of animals for food; therefore, these beliefs support the hierarchy between animals and humans (Moneterio et al., 2016). Individuals with stronger carnistic beliefs do not believe in animal rights, and more staunchly believe in the divide between humans and animals (Moneterio et al., 2016). Moreover, carnistic beliefs serve not only to justify eating animals but also violence towards animals used for food (Moneterio et al., 2016). The results of the Moneterio et al. study demonstrate a negative relationship between carnistic domination and empathy, suggesting that some individuals do not empathize with animals, and therefore, may not experience cognitive dissonance when they think about or engage in the killing of animals for food (Moneterio et al., 2016).

These findings indicate a critical component of carnism, notably the underlying beliefs which allow people to continue the practice of eating animals and their justifications for doing so. The study, however, did not address the varying degrees of cognitive dissonance individuals may feel or their beliefs towards eating different animal products, such as milk, eggs, fish, and different kinds of animal flesh.

Compartmentalization of Food Animals vs. Companion Animals

In understanding why western culture endorses carnism, previous literature has explored how human beings form cognitive distinctions between different kinds of animals in order to rationalize eating them (Amiot et al., 2019; Bastian et al., 2012). Amiot and colleagues conducted two studies to examine the differences in human perceptions of animals by investigating how humans compartmentalize animals (Amiot et al., 2019). Compartmentalization is the cognitive tendency to divide something into distinct categories. The first study measured human participants' compartmentalization of farm animals, perceived status of farm animals, ratings of different types of animals, and inclusion of animals in the self. The first study

found that a higher tendency to compartmentalize- “as a cognitive and possibly defensive phenomenon”- is correlated to a higher tendency to “devalue and assign lower status to farm animals relative to pets” (pets are better known as companion animals), and to feel less connected to animals more generally (Amiot et al., 2019, 161). The next study by Amiot and colleagues measured carnism, vegetarian threat, and perception of human superiority. The study found there to be a positive correlation between the compartmentalization of animals and higher beliefs in human superiority, carnism, and feelings of being threatened by vegetarianism (Amiot et al., 2019). Overall, both studies illustrate the human tendency to cognitively separate farm animals from companion animals, which results in justifications for animal protein consumption.

Along these lines, Bastian and colleagues conducted a study to further investigate how humans form cognitive distinctions between different animals. The human participants at an Australian university were presented with images of cows and sheep. Some human participants were told that the animals were raised for food consumption, and human participants rated the extent to which each animal possessed 15 mental capacities, including pleasure, fear, joy, happiness, and desires. The studies found there to be no difference between cows and sheep in terms of perceived mental capacities, and the results found two animal types: “food animal” and “nonfood animal”. Moreover, when human participants were told that an animal was being bred for food, the students rated that animal’s mental capacities to be lower than when no information was provided (Bastian et al., 2012). Thus, this study indicates that the compartmentalization of animals is based on the perceived emotional and mental capacities of that animal and the context provided to them about how the animal was raised.

Instead of viewing the world from a classical western Anthropocene mindset, there are alternative perspectives that seek to redefine the relationship between humans and animals. For example, “One Nature” is a new form of post-Anthropocene thinking that recognizes the dignity and agency of nonhuman animals in an attempt to break down the artificial binary barriers between humans and nature. Rather than living in a world dominated by humans, “One Nature” acknowledges that we live in a “co-creative continuum” where humans and non-humans interact and create shared experiences that alter both humans and nature (Özdemir, 2020). Thus “One Nature” indicates that although the research in this project is novel it is not unprecedented and seeks to further establish a new way of knowing.

Animal Consumption on a Global Scale

It can be easy to view carnism as the only popular diet, but native cultures in South America, Africa, Asia, and parts of Europe provide a fairly popular alternative diet. A common dietary practice of these locations is entomophagy, the consumption of insects (Kim et al., 2019). In regions of Africa, for example, insects are commonly found in cafeterias and markets as there is a greater market demand for insects than there is for animal protein (Kim et al., 2019). This phenomenon occurs because insects are much less resource-intensive to cultivate and therefore are a cheaper and more convenient option for protein. Another international example of entomophagy is in South Korea where, in fact, the government even stepped in to make

entomophagy more widely accepted.

Outside of entomophagy, there are other examples of cultures rejecting carnism. An example of an entire culture doing this is seen in India. India has embraced vegetarianism largely because of Hinduism values. In Hinduism, there is a concept called Ahimsa, which is non-violence towards all beings (Alsdorf, 2010). This ethical framework is born out of compassion for all beings, regardless of if they're human or not. Those who adhere to Ahimsa recognize that all sentient beings can experience both joy and pain, and make it a point to limit or completely eliminate the pain that they cause on other individuals (Wallach et al. 2018). Out of respect for animals and sentient life, they choose not to consume animal meat as food, as this would be an act of violence. The Vedic texts further assert that people should stop killing all quadrupeds and bipeds. An example of this is the cow becoming sacred. This stems from the idea that killing a cow was akin to killing a Brahman, the highest social caste (Alsdorf, 2010). Further, the cow was likened to the Aditi, which is the Hindu mother of gods. This was most likely due to the utility of the cow in Hindu culture. The cow creates milk, cheese, butter, urine and dung, and is seen as generous because the cow gives more than it receives. The first three products are eaten, the last two are used for religious purposes or fuel (Alsdorf, 2010). So, in order to fall in line with their religious beliefs, most, if not all, of India looked elsewhere for plant-based sources of protein, indicating that alternatives to the classic western diet are possible

Gaps

_____ There are several gaps in previous literature which we hope to gain deeper insight into through our research. First, the existing citizen science literature is mostly related to how citizen scientists' participation in these projects affects the way in which they reflect upon the issue at hand or how they describe their narrative experience (Maund et al., 2020). Our research directly addresses this gap by asking human participants to both document wildlife interactions and reflect on how these interactions intersect with or affect their relationship with or rationalization of animal protein consumption.

An additional gap found among our sources (Greving et al., 2020; Monteiro et al., 2017; Gilbert 2005; Joy et al., 2001; Amiot et al., 2019; Bastian et al., 2012) is that previous studies failed to utilize citizen science wildlife monitoring methods to investigate/explore why humans consume some animals but refuse to eat other animals. These other sources used methods like questionnaires and rating scales to understand an individual's animal consumption habits. Another gap is that certain studies had a too broad/limited/specific demographic and were not targeting Boston/New England area residents which is the focus of our research.

That said, the previous literature on this topic reveals important and useful background information, but lacks the methodology and demographics that we desire for our research. In order to fill these gaps in previous research, we will use citizen monitoring of wildlife encounters through photos, videos, audio, and narrative accounts which will be posted to a collaborative Facebook page. Furthermore, we will use a non-random sample that consists of personal networks to target our human participants with differing views on animal human participants.

Methods

human participants

Human human participants in our study are Boston College students, either located on the Chestnut Hill and Newton Campuses, the surrounding off-campus areas, or from their place of residence if they are studying remotely. Non-human animal human participants are those animals in and around the BC campus that become a part of the shared sentience of BC students.

Instrument

human participants are invited to log their encounters with sentient wildlife via the use of cameras or camera phones. These photographs may be accompanied by brief anecdotes/narratives in which the human participants are free to share their reflections on how, if at all, their consumption of sentient creatures was changed by this encounter. These photographs and anecdotes were subsequently posted to the social networking site Facebook. A Facebook group, titled, “Wildlife Monitoring and Animal Consumption for Food at BC,” was created as a platform for these posts. Upon seeing these posts, researchers could use their individual Facebook accounts to ask follow-up questions regarding the human participant’s wildlife interaction.

Consent Procedure

human participants are invited by researchers to join this study via Facebook’s group invitation function. By joining a public platform (a Facebook group), it is evident to human participants that their responses will be available and viewable to everyone who accesses the platform. We have made it clear in the “About” section of the Facebook group that this data and posting will be public, so that posters are made aware of this fact. The statement reads as follows: “By posting on this page, you are effectively consenting to have the data you provide viewable by any and all people who view this page. Moreover, you are consenting to the research team viewing and utilizing your posts as data in our analysis. We ask that only individuals over the age of 18 respond to this page.”

Anonymity

These posts were shared within a private Facebook group and were thus made available for all members of the group to view and interact with. Because of this, the human participants were not anonymous to one another but will have their identities concealed for data analysis and result publication purposes. Moreover, the members of the Facebook group must have been invited to join by invitations sent by team members, and the human participants’ posts in the group will not be visible to the greater Facebook community.

Sample

Our sample is a non-random convenience sample, with a total of 50 human human participants. We recruited individuals within our social networks, including those from extracurricular activities, clubs, and roommates at and around Boston College. That said, our sample will consist of college-aged students, ages 18-22, of various ethnicities and genders. We engaged in intentional action to enhance the diversity and inclusion of our human participants. Noteworthy inclusivity practices from the literature that we incorporated into our sample are as follows: identifying inclusiveness targets; providing learning opportunities to ensure high-quality research; using collaborative data collection methods such as digital technologies (Paleco et. al. 2021) Specifically, we set targets to ensure at least 50% women human participants to address historical underrepresentation of women in broad scientific communities but also in participatory action research. We also set a target of 25% of our human participants to identify as non-white to ensure racial and ethnic diversity, of which whites primarily make up the dominant narrative. Then, to ensure high-quality data, the research time offered learning opportunities to all human participants in the form of guidance posts (discussed later in Methods). Finally, we chose a fully digital, widely-recognizable, user-friendly platform (Facebook) to ensure that the largest number of people- regardless of socioeconomic status, race, gender, ability status, etc.- could engage in the project. Overall, encouraging diversity in citizen science is critical, as it will not only benefit those diverse communities but it will also benefit society as a whole.

Data Collection

The main focus of our data collection is social artifacts. These social artifacts include pictures, videos, audio clips, and narratives written by members of the Facebook group. We will accept pictures, videos, audio clips, and narratives from any period of time from our human participants- past or present- as we find this flexibility important to engage people in sharing sentience. Researchers will also provide example posts to enlighten human human participants on what it is they are expected to post. Additionally, researchers may ask probing questions in the comment sections with human participants if there are any particularly striking comments or posts from the members, or if researchers feel that expanding on the posts may provide valuable data that may have been missing initially. These social artifacts will lead us to have meaningful insight into the everyday interactions that people have with other sentient life and challenge our members to think about their relationships with sentient life. Data collection will take place continuously from the end of October until March. Members of the Facebook group will have the liberty to post whenever they want during this time period and there is not a limit as to the amount they can post. During the data collection period, we will be accepting social artifacts from any date in time and the artifacts are not restricted to the collection period.

Analysis

The data analysis will involve a review of the social artifacts uploaded to the Facebook group. It will be necessary to look at the animal photographed, the specific type of animal and the unique characteristics associated with that animal (class, warm versus cold-blooded), the

location of the animal, associations of the animal with consumption for protein, and the physical proximity of the person to the animal. Additionally, we will analyze how the human participant felt during and after their interaction based on their posts and responses in the group.

Comparisons will also be made between posts that lack accompanying texts and texts that lack accompanying photographs to search for emotive differences. Furthermore, posts will be categorized by keywords that convey emotion (e.g. empathy) and dietary styles (e.g. veganism). Such keyword analysis will give us statistical data to draw conclusions about which animals evoke certain emotions and what that says about collegiate consumption of animals as food.

From a detailed look at these social artifacts, the research team will be able to identify themes that emerge from the social artifacts using an inductive and deductive approach. For example, we may see themes that relate to the existing literature including compassion, carnism, compartmentalization of companion and food animals, and other themes. Specifically, we expect to see different human participants talk about their perception of animals in various ways- such as certain individuals viewing turkeys as merely food, whereas others may never even conceive of turkeys as a food source. We also anticipate other themes which may arise and which will enable us to comprehensively and holistically analyze the data. These narratives will be analyzed deductively. Overall, a thorough analysis of our data will help us to answer our questions about the consumption of sentient beings, and how attitudes are affected by wildlife encounters.

Guiding Principles of our Analysis

Citizen science and participatory action research (PAR) is an equal part contribution of the research team, our human participants, and the sentient beings involved in the documented interactions. The goals of our project and PAR aim to break down the barriers between all forms of sentient life and strive towards greater unity between them. At all times, we strive to understand our human participants as “thinking-feeling humans” rather than as “subjects” or “clients” (Borda, 2006). The same must go for the sentient beings documented and interacted with in citizen-reported posts. We must develop a multispecies ethnography in which the sentience of these beings is respected and the communication between humans and non-human animals is understood such that their political, cultural, and economic conditions are accounted for in our research (Kirksey and Helmreich, 2010). Overall, we must be guided by a “praxis-inspired commitment” to research that elevates and liberates humans and non-human sentience from oppression and advocates for their liberation (Borda, 2006). Science must promote, “research, education, and action” (Borda, 2006). When dealing with the issues surrounding the consumption of other sentient beings, our research team aims to promote a view of science and research that may, “alleviate conflict, violence, and repression,” of all sentient beings (Borda, 2006).

The concept of the “multispecies ethnography” was central to the work produced throughout this project. At its most basic, this is the term for ethnographic considerations that take into consideration the agency of non-human animals and the impact these interactions have on their identities. Fundamental to this form of ethnography is the concept of “becomings,”

which are defined as emerging perspectives on relationships informed by “nonhierarchical alliances, symbiotic attachments, and the mingling of creative agents,” (Kirksey & Helmreich 2010: 546). Though research human participants were not encouraged specifically to incorporate animal agency and attitudes in their reflections, many sought to.

Ultimately, the ethnographic analysis done throughout this project will not be geared towards selecting keywords, preconceived notions of animal sentience, or coding for specific results. The value that multispecies ethnographies present to researchers is in their emotive, qualitative work, and social science researchers must be able to construct narratives from the stories that they are presented (Bönisch-Brednich, B. (2018). Writing the ethnographic story: Constructing narrative out of narratives. *Fabula*, 59(1-2), 8-26.). As was postulated in *Being Ethnographic: A Guide to the Theory and Practice of Ethnography*, “What qualitative social scientist in their right mind would want to give over the power of analysis and interpretation to ‘data?’” (Madden 2017: 140).

With novel research such as citizen science, setbacks and failure are to be expected throughout the course of the research. Contreras highlighted that his experience with ‘personal failure’ throughout his research allowed for new themes to emerge, while introducing novel perspectives with which to approach his work (Contreras, 2019). Researcher positionality provides a unique lens through which to analyze the data, and thus revealing personal experiences that emerge throughout the research is critical for a holistic understanding of the project (Contreras, 2019; Richardson, 2001). Citizen science research amplifies personal experiences, thus, addressing positionality is critical to provide context to the work.

The idea of just preservation fits into our work as well, since we feel that we have a duty to represent other forms of sentient life and bring that into the forefront of the anthropocentric-dominated thoughts of our peers. It states that adults have an ethical responsibility to give a voice to those without a voice, namely other forms of sentient life and youth with a clear non-anthropocentric twist (Treves, Avila, Lynn et al. 2019). Rather than falling prey to a form of soft anthropocentrism, which is defined as having a prejudice against sentient beings but in a rather palatable way. In order to not fall prey to this form of anthropocentrism, we accepted all forms of posts about sentient life, and not just charismatic species.

Guidance Posts

Throughout the data collection process, various members of the research team have posted example posts to serve as models after which respondents can base their posts. These posts were crafted to include a narrative component of animal encounters, emotional reflection, and photographic documentation, all of which combine to create an ideal post for the purposes of this research. These posts were timed strategically to create a systematic inflow of posts to the group and to inspire human participants to engage with the project. Please see Appendix B for the images that were included in these guidance posts, and written examples are as follows:

“Today I was walking the reservoir and I saw these geese all sitting in a group. While the reservoir was not very crowded, there were multiple people walking and running past

them. Despite this action around them, the geese remained calm and were just enjoying the day. It was apparent that there was a mutual acknowledgment of sentience between the people and the geese in that there was no need to disrupt each other, but rather that each could enjoy themselves while at the reservoir.”

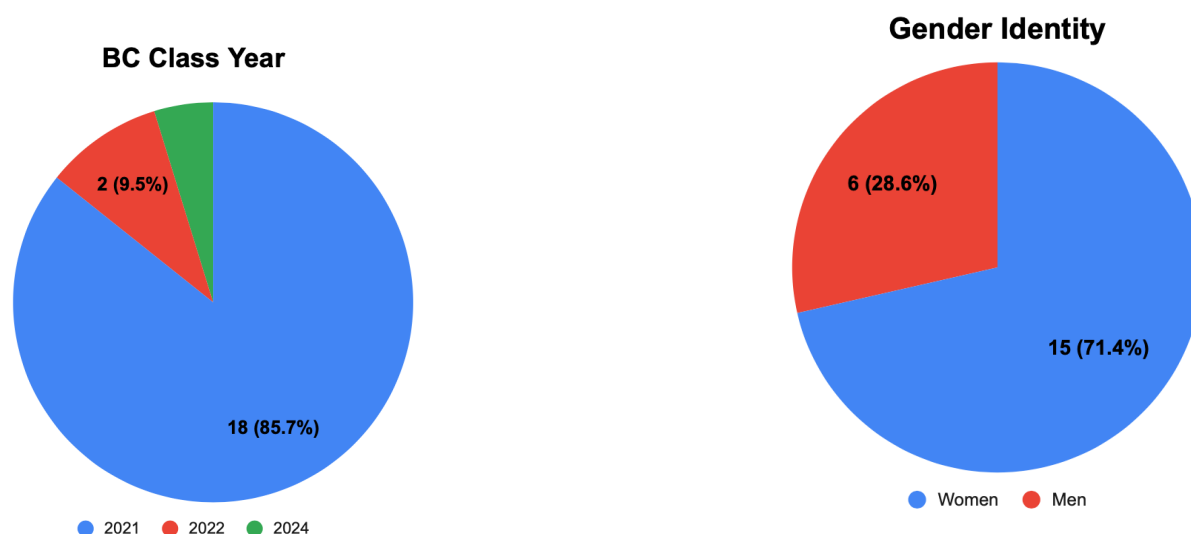
(Mckenna Foy, October 2020)

“This is an encounter I had with a black-capped chickadee during the Fall of 2020. I was walking into O’Neill when this little guy flew into the window and knocked itself out in the middle of the footpath. Myself and others stopped and I decided to get the bird out of harm’s way. I moved it off to the side and thought to put in the bushes but quickly realized that the sun was soon to set and the bird would be vulnerable to predators if left defenseless at night. So I waited with it for about 15-20 minutes until it gained the strength to hop off on its own. I felt very empowered to protect this creature and it made me reflect on my own meat eating. I try to only eat meat and seafood that I myself have harvested in accordance with laws and ethics that promote sustainability and spent the fall semester doing exactly that with minimal exceptions, and helping this bird out only enforced that belief. Mankind has done so much to inhibit the proliferation of birds over the centuries that we owe it to these guys to help out when we can. Thanks for reading and remember to keep those posts coming!” (Frankie Wilton, February 2021)

Research Schedule

Our data collection began in late October 2020 when our platform was released and made available to be commented on. This will mark the official start of our research project, barring that the IRB Committee does not disallow the use of any data collected before their approval. We plan for the platform to be open for posts until March of 2021. At this point we will conclude the citizen science and wildlife monitoring portion of the project and commence analysis of the social artifacts contributed. Between March and May of 2021 the research team will conclude the project and produce a final report of our findings.

Quantitative Results



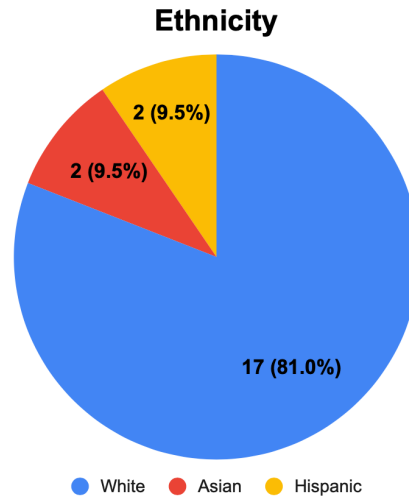
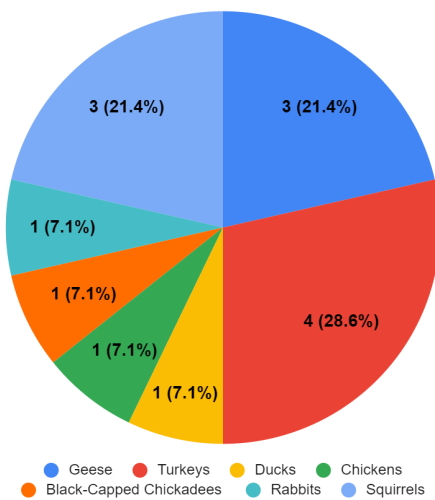


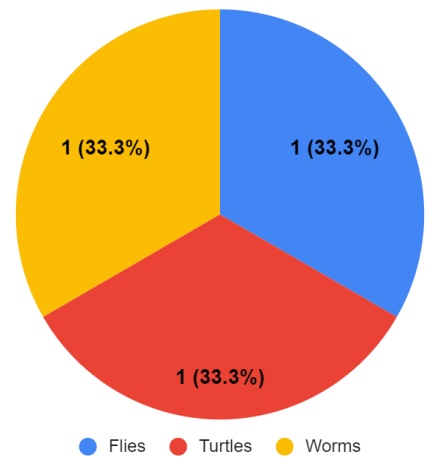
Figure 1: Description of Human Sample

As seen in Figure 1, our sample consisted of 18 Boston College seniors (85.7%), 2 juniors (9.5%), 1 freshman (4.85%) and zero sophomores. The gender identity of our human participants was 71.4% women and 28.6% male. Lastly, 81% of our sample identified as white, 9.5% identified as Asian, and 9.5% identified as Hispanic.

Warm Blooded Animals Recorded



Cold Blooded Animals Recorded



Total Animals Recorded

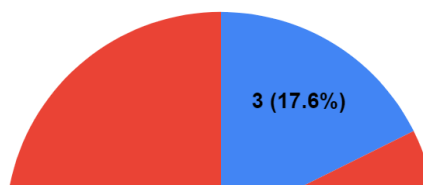


Figure 2: Description of Non-Human Animals Recorded

As seen in Figure 2, the majority of animals represented in this study (17) are warm-blooded animals (14; 82.4%). Of the cold blooded animals(3; 17.8%) there is equal representation of turtles(1; 33.3%), worms(1; 33.3%), and flies(1; 33%). Of the warm blooded animals, the majority recorded were turkeys (4; 28.6%), geese (3; 21.4%), and squirrels (3; 21.4%). The other warm blooded species represented are rabbits (1; 7.1%), black-capped chickadees (1; 7.1%), chickens (1; 7.1%), and ducks (1; 7.1%).

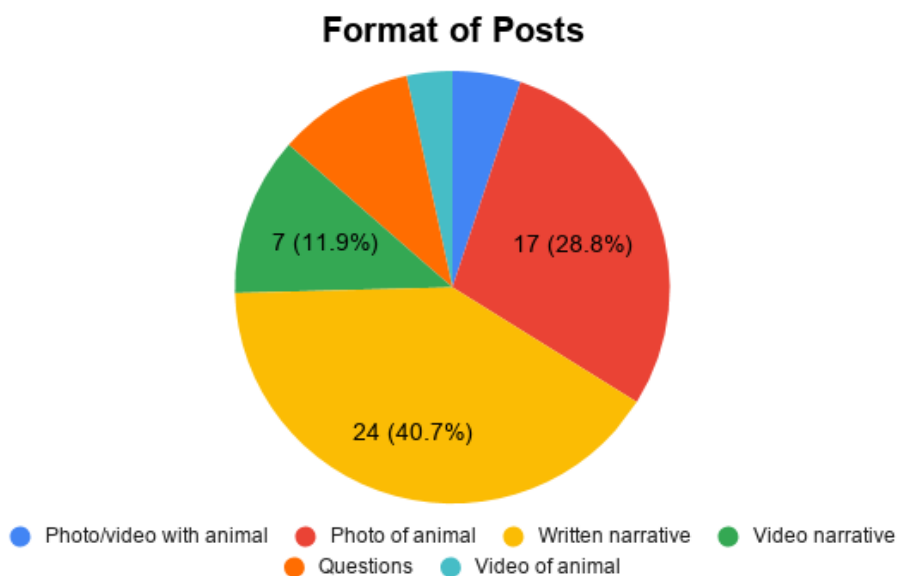


Figure 3: Format of posts

As seen in Figure 3, the majority of posts we received were in the form of written narratives (nearly 41% of posts) followed by photos of animals (nearly 29%). The third most common format of post was video narratives (i.e. individuals speaking about wildlife interactions, but not showing animals in their videos) at nearly 12%. Other, less common formats we received were 6 questions (10.2%), 3 photos/videos with the animal (5.1%), and 2 videos of animals (3.4%).

Physical Proximity between Animals and Participants

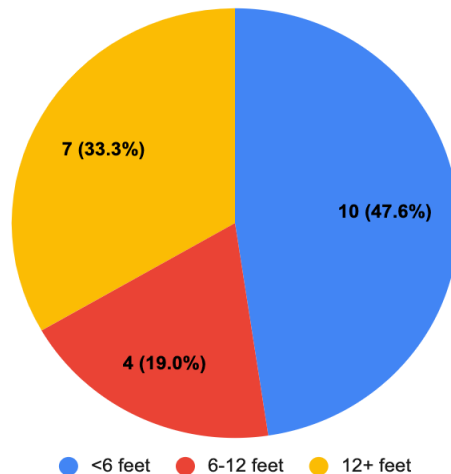


Figure 4: Approximate Physical Proximity between Animals and Human human participants

As seen in Figure 4, the physical distance between human human participants and animals in the photos and videos they submitted was generally quite close, with 47.6% of media being captured from less than 6 feet, 19% falling in between 6-12 feet, and just 33.3% of media being captured from 12 or more feet away. Distance between human human participants and animals was approximated using physical markers in the photo and extrapolating distance by replicating that figure.

Format of Posts

It is useful to first analyze the different formats of posts we received, as this in itself may provide several insights into how humans perceive wildlife, how comfortable students felt interacting with wildlife, and how compelled and engaged they were in the project. As seen in Figure 3, the majority of posts we received were in the form of written narratives- at nearly 41%- which includes *any written story* in the form of a post (with or without a photo) or in the form of

a follow-up comment. The second most common form of post was photos of animals (nearly 29%), followed by video narratives (i.e., human human participants speaking about wildlife, but not showing animals in their videos) at nearly 12%. Other, less common formats we received were 6 questions (10.2%), 3 photos/videos *with the animal* in the frame (5.1%), and 2 videos of animals on their own (3.4%).

The fact that most of our posts were in the form of written and video/audio narratives is understandable- given the human inclination to practice storytelling- and speaks to the importance of incorporating storytelling into new social science research. Specifically, it is reasonable that most of our posts were written and video narratives given the power of storytelling to convey human emotion and engage wide-reaching audiences (Richardson, 2001). This is because stories help individuals make sense of their reality, ascribe meaning to their lives, and influence the way they perceive their own stories (Bonisch-Brednich, 2018). Thus, the sheer volume of written and video narratives we received speaks to how our human human participants tended to use storytelling to communicate, interpret, explicate, and make sense of their wildlife interactions in the context of their own lives. Additionally, the fact that most of our posts were written and video narratives attests to the importance of incorporating nontraditional research methods to engage wide-reaching audiences (i.e., non-traditional methods such as the usage of personal stories by the researchers, and incorporation of human emotions and subjectivity) into scientific research. Such nontraditional research methods are an emerging trend within the social sciences, and are useful because they provide a more effective, human-based approach and a holistic lens and through which to conduct research projects that are most impactful for local communities. Scholars have noted that constructing stories is useful in reframing traditional scientific methods with new language and methods- such as participatory action methodology- which we also engaged in our methods (Borda, 2006). Although the desire to engage in novel, narrative-based ethnographic research is often at tension with the desire to adhere to traditional methods, the large volume of narrative posts we received demonstrates the power of narrative-based research to engage and connect community members.

Photographs of animals were the next most common format of post received. The large number of images we received speaks to the fact that photographs, images, and other visual representations are powerful modes of communication that both portray and evoke human emotion, compassion, and sentience, especially on virtual platforms where face-to-face interaction is absent. The large number of photographs we received also indicates that photographs are important vehicles through which our student human participants shared their wildlife encounter stories. In fact, only *one* written narrative was posted *without* an accompanying photograph (i.e. 23 out of 24 written narratives we received- besides those posted as comments- had at least one accompanying photograph). Thus, our human human participants found photographs to be vital signifiers of their wildlife encounters and effective in bolstering their stories over the virtual platform. The one written narrative without an accompanying photograph is below:

“I saw a pretty neat squirrel booling on the hill behind Gabelli today. It was raining and everyone else looked pretty miserable but this guy was unfazed and that really inspired me to enjoy the day for what it was, weather and all....I did feel like we’d formed a bond in the short time we locked eyes and then went our separate ways.”

October 28, 2020

This one written narrative that was posted without an accompanying photograph was composed by a male human participant, which speaks to broader gender differences observed in our research (a theme which is discussed below). The lack of an accompanying photograph may signal a visual disconnect; as we found that images are powerful portrayals of emotion and nature, and without an image the story is less poignant. Also notable in this account is the use of the word “separate” to describe the squirrel’s path versus the student’s life. Thus, the word choice paired with the lack of an accompanying photograph speaks to a general disconnect between the male human participant and the wildlife individual he interacted with. Despite this, most of the posts received did in fact have accompanying photographs or videos, which signals a broader understanding of shared sentience within our human human participant group. Overall, the frequent use of photographs indicates the importance of visual aids to communicate and understand wildlife interactions, especially in conjunction with written narratives.

Other, less common formats we received were photos/videos of humans *with* the wildlife individual in the frame, written questions posed to the group, and videos of animals. The smaller number of photos/videos of humans pictured with wildlife in the frame indicates that most of our student human participants might have built cognitive separations between themselves and the animal, or feel disconnected from animals, and thus took photos/videos of the animal *without* themselves also in the photo/video. The small number of questions posed to the group could point to the fact that our human’s human participants were less interested in learning about other people’s direct opinions, but rather were more interested in reflecting on their own actions in relation to others’ wildlife interactions. Finally, the small number of videos we received which only featured the animal- and no verbal narrative- corroborates our previous asserting that both verbal and written narratives were more powerful and impactful in this research.

Content of Posts

Within the written and video narratives, photographs, and other formats of posts received, the actual content of these posts is also very telling. Factors such as the location of the animal, the physical proximity of the person to the animal, and images/videos of the person *with* the animal versus the animal *from* a distance, reveal important characteristics about individuals’ underlying beliefs about and connections to nonhuman animals, and may correlate with the degree to which that individual recognized animal sentience or animal consumption for food in their response.

Most of the photographs we received were taken approximately 6-12 feet away from the animal human participants. The fact that most of the photographs were taken in close proximity to animal human participants indicates that wildlife individuals are pervasive throughout the

Boston College campus and surrounding areas, and that these animals frequently cross paths with student populations. Additionally, the ability and willingness of the student human participants to take out their mobile phones and quickly photograph the animal from less than 12 feet away indicates that they are comfortable seeing wildlife at close distances, and likely regularly do so. Other photographs were taken at what appears to be much greater distances: notably, two long-distance photographs were of ducks in the water, and two long-distance photographs were of turkeys. In the case of the ducks, this may be due to logistical concerns (e.g., student human participants did not want to immerse themselves into freezing water); and in the case of the turkeys, this may be due to other, less clear factors, especially since we had some photographs and videos of turkeys up close, and some that were further away. Thus, this inconsistency may be due to individual-level differences and socio-cultural perceptions, or a simple matter of logistics, which explains why some turkeys were photographed up close and why others were photographed from notably longer distances.

In the posts we received of human human participants *with* the wildlife individual, the closest an individual person physically got to in proximity to an animal can be seen in the case of an injured black-capped chickadee who was photographed resting in the hand of one of our researchers. The little bird appears to be calmly sitting and laying on the human hand with ease (see Figure 5 below). This intimate encounter shows the interconnectedness of humans and animal species and an interaction of shared sentience: the researcher noticed that the bird was hurt- and acknowledging pain within the animal- stopped and decided to hold and nurture the bird until he/she appeared better. In this particular instance, the bird seemed willing to participate in a sentient human-animal interaction, even after fluttering its wings. Beyond this interaction, we had one other photograph and one video in which the student human participant showed themselves in the image alongside the wildlife individual. Such documentations suggest an involved, active participation in shared sentience between human and non-human animals. Overall, though, the small number of photos and videos in which the student human participants included themselves with the animal indicates a pervasive perception that humans and animals are separate, and that our human human participants may have been afraid or otherwise apathetic towards getting within touching distance to the animals they encountered.



Figure 5: Photograph submission of an injured black-capped chickadee resting in the hands of one of our researcher human participants.

Qualitative Results

Theme	Description	Examples
Acknowledgment of shared sentience	Most human human participants found a mutual acknowledgment of shared consciousness, awareness, feelings, and/or life between all sentient beings.	<p>“I think there must have been sentience to choose of all places in the [reservoir] to lean on each other”</p> <p>“It was apparent that there was a mutual acknowledgment of sentience between the people and the geese in that there was no need to disrupt each other”.</p> <p>“I feel like animals can sense that I'm vegan," and that because of this, "[the animals] gravitate toward me"</p>

<p>Opinions on warm-blooded versus cold-blooded animals</p>	<p>The ways in which different kinds of animals evoked different emotional responses to wildlife was prominent in our research.</p>	<p>“I just saw this fly walking back to my room. Unfortunately and shamefully, my first reaction was to swat at it...Perhaps preconditioned ideas about the dirtiness of insects may have sparked such a reaction, because no other animal but a fly would I consider such an act of unprovoked violence.”</p>
<p>Gender differences in animal consumption</p>	<p>Different gender identities prompted very different styles of posting and different willingness to accept moral responsibility for consuming sentient beings</p>	<p>“I saw some chickens today and began to reflect on my diet. Is animal consumption natural? Is it moral? If God did not intend for us to eat animals, then why did he make them out of meat? Would love to hear your thoughts” (male)</p> <p>“I am far more aware of the relationship between the animals that enrich our everyday lives and the detriments of meat consumption. I am far more apt to choose a vegetable-based meat substitute now because of this formative interaction in my life.” (female)</p>
<p>Associations of animals for food versus “wild” animals</p>	<p>Students’ descriptions of their interactions with wildlife differed depending upon whether the animals were traditionally used for consumption or embodied the classical depiction of ‘wildlife.’</p>	<p>“Seeing so many turkeys roaming around Upper throughout freshman year gave me so much joy since I love animals and have never seen wild turkeys before attending [...] My main reason for this is because of how animals tend to be treated in factory farms as well as the environment, and spotting wildlife like these turkeys reminds me of my commitments to animals!”</p> <p>“I saw this squirrel running outside the O’Connell House on upper with a slice of pizza. While people don’t typically see a squirrel and immediately think of meat</p>

		<p>consumption, it did make me think of how we as students really impact the wild animals”</p> <p>“I saw this cute bunny chilling outside of the hillside while I was studying today. It looked so fluffy, I wanted to give it a hug. Brought a smile to my face while I was drowning in midterms”</p>
<p>Expression of compassion for animals and impact on consumption of animals for food</p>	<p>Despite the human participants feeling comfortable sharing their initial feelings when encountering animals, people were less comfortable expressing their diet.</p>	<p>“The fact that turkeys are always walking around in groups makes me think that they’re definitely sentient, smart, and social animals. I do eat meat on occasion, but I’m trying to cut down now that I don’t have to rely on the dining hall for food”</p> <p>“It is moments like this, and further knowledge on the impact of consuming animals that has inspired me to be vegetarian today!”</p> <p>“...maybe we will be more aware that the animals we consume are living, breathing beings that play a greater role in the natural ecosystem than being served at our meals.”</p>
<p>Moral justifications for consuming animals as food</p>	<p>A few students’ interactions with wildlife prompted them to discuss their moral justifications for consuming animals as food.</p>	<p>“I try to only eat meat and seafood that I myself have harvested in accordance with laws and ethics that promote sustainability and spent the fall semester doing exactly that with minimal exceptions”</p> <p>“Everyone in my family eats meat, I grew up eating pork all the time and seafood. My parents are from Ecuador so that’s a big thing that we eat...It’s something I was raised on”</p>

Table 1: Results. The main themes that emerged from our research are listed above, along with descriptions of the themes that emerged and examples of data that exemplify each theme.

Defining Sentience

Numerous key insights emerged from the responses of our citizen scientists on the definition of sentience. We will summarize the findings as showing that respondents attributed the abilities to form intra-species relationships and inter-species relationships, displaying emotionality, and a property of universality to their respective definitions of sentience. A connecting feature of the latter two themes was the development of a multispecies lens amongst our human human participants. Amid the Anthropocene, our citizen scientists developed a better understanding of sentience as being in community and communication with other species (Kirksey and Helmreich, 2010). The accounts of our human human participants well display that mutual acknowledgment of sentience and the necessity of “living with” other beings (Kirksey and Helmreich, 2010).

Intra-species Relationships

Many citizen scientists claimed that animals displaying community and coexistence within their own species was evidence of their sentience. One human human participant observed two turtles lying atop each other at the Chestnut Hill Reservoir and stated, “I think there must have been sentience to choose of all places in the [reservoir] to lean on each other”. The same point was echoed by another citizen scientist who documented turkeys walking in the road near campus, “The fact that turkeys are always walking around in groups makes me think that they’re definitely sentient, smart, and social animals”. There is a clear indication from these responses that the possession of sentience may be perceived by individuals as being dependent on an organism’s capability to form communities with other beings of their own kind.

Inter-species Relationships

A fascinating observation from our citizen scientists was how sentience may not only be indicated by relationships within one’s own species, but the capability of interacting with others as well. This was beautifully encapsulated by one student who said, “It was apparent that there was a mutual acknowledgement of sentience between the people and the geese in that there was no need to disrupt each other”. In this framing of mutual acknowledgment, the circle of consideration of sentience is greatly expanded. Beings are sentient not just by limiting themselves to their most immediate relationships; rather, their sentience is enhanced and enriched by sharing in experience with other beings.

Other respondents acknowledged this idea of inter-species relationships in rich narrative storytelling. One student said of an interaction between him and a squirrel, “[We] formed a bond in the short time we locked eyes and then went our separate ways.” Another stated that, “I feel like animals can sense that I’m vegan,” and that because of this, “[the animals] gravitate toward me.” Sentience in an old paradigm might have been summed up in the West as, “Cogito, ergo

sum” or “I think, therefore I am.” What these responses do is shift the framing of sentience away from an individualistic focus on the “I” towards a communal understanding of the “we.”

Universality

While an inter-species understanding of sentience expands the circle of ethical consideration compared to an intra-species understanding, there was one citizen scientist who proclaimed sentience as a universal characteristic of all animals. The citizen scientist stated that, “this interaction reminded me that all animals are sentient beings and deserve to be valued as such.” While this respondent was alone in their assertion, it is of great importance to grapple with in our research. Sentience as universal encompasses, for this respondent, all living breathing animals. Furthermore, it is in their very existence, their most essential essence, that they are inherently worthy of love, value, and respect. The post opens up a discussion of more than just a definition of sentience, but asks what rights are conferred upon a sentient being? What do we as members of a community of other beings owe to one another? The statement seems to imply a biological contract between beings, that we owe to one another love and respect, but it should come at no cost. It is a transactionless relationship, built solely on the inherent worth of sentience itself.

Expressions of Compassion for Animals and Impact on Diet



Figure 6: Photograph submission of a bunny at Boston College Campus

In our data, 7 posts illustrated expressions of compassion towards the non-human animals as an individual remarked about “wanting to give a hug” to the bunny in figure 6. Other human participants experienced feelings of “joy”, “empathy”, and “inspiration” from these animals. One individual even mentioned that “these animals deserve better” after seeing dead worms on a flight of stairs on campus. These 7 particular posts indicate that a significant portion of the respondents actively enjoy their time around animals.

Additionally, there were four other posts that did not explicitly mention feelings of compassion but instead acknowledged the dignity of non-human animals. This subtle distinction indicates that some individuals might not actively enjoy their time around animals but still understand the intrinsic worth of non-humans. These courageous posts are able to transcend the socially constructed binaries between human and nature and acknowledge the agency of these individual animals (Özdemir, 2020). One individual remarked that turkeys are “definitely smart, social, and sentient creatures” in an acknowledgment of the turkey’s dignity. Another human participant remarked that their interaction with a duck was a “super peaceful interaction” that reminded them that animals are sentient beings “and deserve to be treated as such.” Additionally, another human participant posted about an interaction where he attempted to swat a fly, a being of unacknowledged sentience, but then realized that he “strives not to hurt animals” in a sobering self-assessment. Finally, a last student human participant experienced a “mutual acknowledgment of sentience” with a gaggle of geese while walking around the reservoir, which is a pillar of the One Nature framework necessary for the survival of Mother Earth (Özdemir, 2020). These posts express a deep sense of connection with non-human animals not contingent upon a personal sense of connection with the animals. These human human human participants express that they understand humans and non-humans live in a co-constitutive continuum among life forms and ecosystems (Özdemir, 2020).

Despite the human participants feeling comfortable sharing their initial feelings of compassion when encountering animals, human participants were less comfortable expressing their diet. One possible justification for the lack of comfort was that people are themselves aware of their own hypocrisies. Individuals might be aware that consuming animals as food is inconsistent with their morals yet still continue out of convenience or social pressure. For example, one human participant mentioned that they did not eat animal protein such as chicken yet they still consumed fish. This person did not know if fish consumption is “more morally justified than chicken” consumption but is “working to figure out a balance” in an example of an individual unable to eloquently express or justify their personal diet. Another human participant felt comfortable sharing that they only eat “meat and seafood that I myself have harvested” which again raises more questions than answers on why people consume animals as food. Despite our human participants’ frequent mentions of compassion and respect for sentience in their posts, many of our human participants seemed unable to translate that compassion and respect to their dietary choices (i.e. many continue to consume animals for food).

Opinions on warm-blooded versus cold-blooded animals

Of the seventeen animals that were recorded during our study, fourteen of them were warm-blooded animals. Warm-blooded is defined as an animal that has warm blood, and so mammals and birds would be placed in this category. Typically speaking, these are the vast majority of companion animals, and therefore have a bias towards them for most people. Cold-blooded animals, on the other hand, have to thermoregulate to keep a constant body temperature. This group includes reptiles, amphibians, fish, invertebrates, and insects. These

animals are more typically looked at with fear or disgust, and so we decided to look into these two groups in order to see if there was a discrepancy between them in terms of compassion.

Of the fourteen warm-blooded animals recorded, there were three interactions with geese, four interactions with turkeys, one interaction with ducks, one interaction with chickens, one interaction with a black-capped chickadee, three interactions with squirrels, and one interaction with rabbits. Of the cold-blooded species, there were three interactions total, with one interaction being one with turtles, one interaction with flies, and one interaction with worms (Figure 2). Perhaps this discrepancy was due to the fact that we were taking our results during the winter months. Our cold-blooded friends were most likely brumating, awaiting the warm sunshine of the spring and summer months. Perhaps another reason for this is due to the climate around Boston College being rather harsh in the winter, and so ectotherms cannot really thrive here in abundance without our assistance.

It's also interesting to note that many of the species studied were avian in nature. Of the seventeen total species with a logged interaction, ten of those animals were birds (Figure 2). It's interesting to note that these interactions occurred more frequently, as researcher Christian McCoy personally has noticed birds more than quadrupeds during his time at Boston College. Perhaps this is due to their nature to fly away when posed with a threat, whereas a quadruped is much more likely to scurry away into their burrow or some other safe place on the ground where they can hide before an interaction can occur.

Our human participants had significantly more interactions with warm-blooded animals than cold-blooded animals, yet there wasn't any discrepancy between the compassion shown for sentience as a whole. The respect for sentient life in our Facebook group was overwhelming. There weren't any I was particularly moved by was about an interaction with a fly, where a member stated:

"I just saw this fly walking back to my room. Unfortunately and shamefully, my first reaction was to swat at it. Why would I do such a thing? It hadn't bothered me or done anything wrong, it was simply just flying around. I reflected after on my own vegetarianism. I strive to not hurt or consume animals because I want to not cause harm to them, but in a moment of not thinking I swatted at a harmless creature. Perhaps preconditioned ideas about the dirtiness of insects may have sparked such a reaction, because no other animal but a fly would I consider such an act of unprovoked violence."

October 14, 2020

I found this post to be particularly powerful because a fly is typically never thought of as a sentient being. Yet, as we encouraged our members to move into a space where sentience would be respected, no matter the organism, I noticed that many animals that we share this Earth with were being shown the respect that they deserve. It didn't matter that the animal here was a fly, they were still shown the same respect that charismatic species would. Comparing this post to another post from the same day about a rabbit, you can see this mindset in action:

“saw this cute bunny chilling outside of Hillside while i was studying today. it looked so fluffy, i wanted to give it a hug. brought a smile to my face while i was drowning in midterms”

October 14, 2020

Both of these posts highlight a respect for the sentience of both animals. In both posts, you can tell that each of the human participants held positive regards for each of the creatures mentioned. In the fly post, specific language such as “It hadn’t bothered me or done anything wrong” and “harmless creature” highlights the fact that this human participant had thought about the sentience of the fly and reflected on their actions towards the fly. Through reflection on this fly, they connected this to animal consumption and their attitudes towards harming animals, either directly or indirectly. Ultimately, they held positive feelings towards the fly because of the shared sentience during that moment of reflection. Similarly, the human participant post about the bunny shows that the human participant held positive feelings towards the sentience of the animal. Just looking at the bunny “brought a smile to [their] face” during what would otherwise be a situation where negative emotions would be felt. The overall trend for the 17 species studied was similar to these specific posts, where sentience was respected and embraced, and induced positive emotions within the human participants when this was finally recognized.

It was fantastic to see both a typically cared for species, a rabbit in this case, shown the same respect as a fly, which is usually thought of as a nuisance. Seeing as there was just one interaction for both of these species, the two above narratives can be taken as a microcosm for general sentiments of our group members towards animals as a whole. As we encouraged our friends and peers from Boston College to move into more sentient-life-centric ideals, we saw an embracing of those ideals. It did not matter what the animal was, all were shown the same amount of respect, which was uplifting.

Gender Differences on Attitudes of Animal Sentience

Differences in the gender identity of posters were associated with altogether different styles of posting and group participation. The group was female-dominated in terms of both population and discussion. From a purely numerical perspective, females accounted for 15 of the 21 individuals who penned one or more narrative entries. No people who identify nonbinary participated in this research

Male respondents were hesitant to reflect on their own meat consumption unless probed, whereas female human participants tended to discuss the topic openly amongst themselves. Male respondents often made justifications for their animal product consumption before considering alternatives whereas female human participants tended to frame their animal product consumption as a weakness that they were seeking to eliminate in themselves. This pattern is best illustrated in the contrasting examples of two male human participants that recorded multiple entries in the Facebook group and female responses to the April 7, 2021 post from

researcher Lizzy DiSanto. The two male human participants that made multiple posts in the group demonstrated ongoing involvement in the project through repeated engagement (likes, comments, et cetera) but seemed to never adapt in reflecting on their own approach to animal product consumption. One male human participant posed a question to the group, stating the following:

“I saw some chickens today and began to reflect on my diet. Is animal consumption natural? Is it moral? If God did not intend for us to eat animals, then why did he make them out of meat? Would love to hear your thoughts”

February 21, 2021

This post, innocuous at first glance, speaks to many of the gendered differences present in this research. First is the human participant's use of the word “meat.” In stating that animals are “(made) out of meat,” the human participant is distinguishing the animal’s consciousness from its consumability. Such distinguishments are deeply problematic, as they neglect notions of animal sentience and instead present these creatures as vehicles for fueling human lust for flesh. This reflects, too, on the male attitude toward women as mere exploitable facets in the quest for sexual and societal domination. The ideas put forth in Carol Adams *The Sexual Politics of Meat*, namely that meat-eaters try to call out vegetarians for eating decently as a reflection of their insecurities (Adams, 1990: 116) and that slaughter is fundamental to male sexuality (Adams, 1990: 88), are reflected in such removals of meat from the souls that they’re bound to. When one researcher answered the poster’s question and probed for his own thoughts, the human participant failed to respond.

While males would not go so far as to admit responsibility for the slaughter of animals for food, they would acknowledge sentience through repeatedly expressing a desire to bond with wild animals. Two male posters separately mentioned a desire to “bool,” a slang term for hang-out, with wild animals, specifically a squirrel and a turtle. Notable here is that these creatures are not “made of meat” in the typical sense for New Englanders, as turtle and squirrel flesh are not consumed by these people. While animals like chickens have been recharacterized to the point where they are merely meat vessels, male posters have preserved the sentience of creatures whose flesh is not prominently consumed.

Females present different outlooks on the ethics of animal consumption. Unlike male posters, female posters in the group revealed an ethical imperative centered on preserving animal sentience. The following posts reflect the nature of that ethical framework:

“...maybe we will be more aware that the animals we consume are living, breathing beings that play a greater role in the natural ecosystem than being served at our meals.”

April 7, 2021

“ I am far more aware of the relationship between the animals that enrich our everyday lives and the detriments of meat consumption. I am far more apt to choose a vegetable-based meat substitute now because of this formative interaction in my life.”

April 7, 2021

“It is moments like this, and further knowledge on the impact of consuming animals that has inspired me to be vegetarian today!”

April 7, 2021

All of these posts reflect a deep internalization of the consequences of eating meat and the ethical implications of an animal-protein-centered diet. (In a contrasting pattern of guilt and deflection, a male interviewee made repeated mention of his family’s cultural ties to “pork” and “seafood,” never once reflecting on his own agency to decide for himself his patterns of consumption nor acknowledging the names of the animals consumed, referring to them instead as the bastardized versions of these names used for the selling of animal products). There seems to be a sense of guilt and vulnerability that permeates both genders in this study, but women are more willing to engage with those feelings directly while men tend to deflect their feelings. Women in this study reflect a deeply shared sentience with non-human animals, reflecting the idea that feminism and plant-forward diets are intrinsically linked, and a study of one without the other reinforces patriarchal norms (Adams, 1990: 30).

The refusal to fully immerse in the project on the part of male human participants may be attributed to societal expectations of meat consumption as manly, as determined by implicit association testing (Love & Sulikowski, 2018). Men attribute meat consumption with virility and healthfulness and are generally more attentive to foodstuffs containing meat than those without it. This pattern was exemplified by a March 12 video featuring three male human participants. When asked about how their animal consumption was informed by wildlife interactions, all of the human participants went on to provide situations in which their animal consumption could be heralded as more ethical, but not one imagined a situation in which they would no longer consume flesh. For these human participants, animal consumption was a foregone conclusion and ethical considerations pertained to factors such as the manner of slaughter and animal’s quality of life. While clearly aware of the shared sentience in wildlife encounters, none of these human participants would go so far as to refuse animal consumption.

Associations of animals for food vs ‘wild animals’

Animals as food

human participants' description of their interactions with wildlife differed depending upon whether the animals were traditionally used for consumption or the classical depiction of

‘wildlife.’ There were 5 total posts depicting animals conventionally consumed, with all postings in this category of poultry – 4 of turkeys and 1 of chickens. Of these posts 4 out of 5 expressed acknowledgment of sentience and compassion towards the animals depicted in the post. The remaining post, depicting turkey, acknowledged its presence but remained disconnected from the being. 1 out of 5 of the posts of animals seen as food appeared disconnected from the animal, while the other 4 appeared to have more of a connection. The post categorized as disconnected did not express a relationship with the animal, nor did they explicitly mention sentience or acknowledgment of the cognitive or emotional capabilities of the being in their image. The following posts reflect this disconnection:

“I saw this turkey near upper campus on one of my runs the other day. I usually see them in packs but this one was all by itself which I thought was interesting. I tried to get a little closer but it ran away”



Figure 7: Photograph submission of a turkey near upper campus at Boston College.

February 10, 2021

However, those categorized as compassionate demonstrated some form of connection either through reflection, questioning, or explicit recognition of sentience. The following examples detail responses evident of compassion:

“I was out on a run this morning and ran into a group of turkeys on Foster!! They let me get pretty close (I was on the sidewalk and they were on the front lawn) and didn’t seem too phased.”



Figure 8: Photograph of turkeys on Foster Street in Brighton, MA.

October 17, 2020

“Seeing so many turkeys roaming around Upper throughout freshman year gave me so much joy since I love animals and have never seen wild turkeys before attending BC [...] My main reason for this is because of how animals tend to be treated in factory farms as well as the environment, and spotting wildlife like these turkeys reminds me of my commitments to animals!”



Figure 9: Photograph taken by human participant with turkeys in the background on Upper Campus.

February 15, 2021

“I saw some chickens today and began to reflect on my diet. Is animal consumption natural? Is it moral?”

February 21, 2021

“The fact that turkeys are always walking around in groups makes me think that they’re definitely sentient, smart, and social animals. I do eat meat on occasion, but I’m trying to cut down now that I don’t have to rely on the dining hall for food”

February 24, 2021

Non-food Animals

There were 14 posts in the Facebook group depicting animals not traditionally understood as suitable for consumption in western culture. These posts included animals such as geese, ducks, birds, insects, or worms. Of the posts of non-food animals, all expressed an observation of sentience and expressed compassion towards the animal they were depicting. However, the posts

depicting insects or worms, while acknowledging sentience, characterized these beings as weak, helpless, or as subjugated or soon to be subjugated to harm. Thus, while these posts still acknowledged sentience, human participants characterized these smaller creatures as below that of humans, and thus, vulnerable. These descriptions were not observed in posts of geese or other comparatively larger animals, indicating that although these human participants recognize the sentience of these smaller beings, they continue to do so in a way that they are hierarchically below humans. Posts detailing these smaller beings as inferior include:

“Myself and others stopped and I decided to get the bird out of harm’s way. I moved it off to the side and thought to put in the bushes but quickly realized that the sun was soon to set and the bird would be vulnerable to predators if left defenseless at night. So I waited with it for about 15-20 minutes until it gained the strength to hop off on its own. [...] Mankind has done so much to inhibit the proliferation of birds over the centuries that we owe it to these guys to help out when we can.” – See figure 5 for image.

February 3, 2021

“Perhaps preconditioned ideas about the dirtiness of insects may have sparked such a reaction, because no other animal but a fly would I consider such an act of unprovoked violence.”

October 14, 2020

“It is unusual but necessary to think of flies and other insects as wildlife and as beings who are fully capable of sentience, and maybe reflecting on this fact more often can prevent senseless violence from occurring again, like it did for you.”

October 14, 2020

“I found these worms dried up and dead on the stairs headed to the main campus. It is sad that we’ve destroyed their habitat and countless passerbys didn’t stop to put them back in the soil. These sentient creatures deserved better.”



Figure 10: Image of dried up worms after rain storm on stairs.

April 3, 2021

Geese and ducks are non-food animals that are predominantly characterized as beings of unacknowledged sentience at Boston College for their propensity to clash with runners along campus adjacent reservoirs and make waste on campus lawns. This indicates that although recognition of sentience may not have been present prior to posts, doing so allowed for a revelation of their dignity and peacefulness. Moreover, while human participants may have observed these animals to be irksome prior to their engagement with this group, human participants appeared to transition to a view, more akin to “One Nature”, viewing that both humans and non-human interact in a way to create meaning from shared interactions (Özdemir, 2020). All of the posts of geese expressed appreciation for these animals and a mutual respect. The following are posts detailing interactions with geese, displaying mutual respect between the human participant and the animal.

“It was apparent that there was a mutual acknowledgment of sentience between the people and the geese in that there was no need to disrupt each other, but rather that each could enjoy themselves while at the res.”

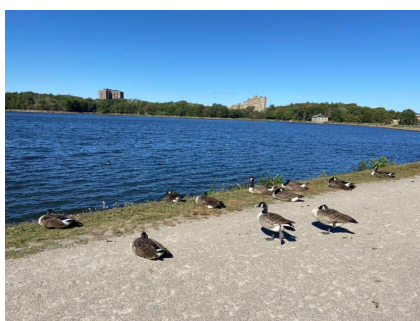


Figure 11: Image of a group of geese at the Chestnut Hill Reservoir

October 8, 2020

“However, I snapped this picture over the summer of a mother goose and her goslings and it made me glad to see them as opposed to my normal annoyance with the geese at the res. I am a vegetarian and don’t eat animals of any kind, but the fact that I had so much for sympathy and such a positive reaction towards the goslings just because they were younger than the older geese who I see all the time was a very interesting experience for me and really made me think.”



Figure 12: Image of a mother goose and her goslings at the Chestnut Hill Reservoir

February 10, 2021

“I saw these ducks on the res in early December. Since it was raining, they had the res to themselves and were swimming around minding their own business. It was a super peaceful interaction.”



Figure 13: Image of a group of ducks swimming in the Chestnut Hill Reservoir

February 14, 2021

“Here are some geese from this past fall. I personally didn’t grow up in a place with geese, so I love documenting and walking past them, observing how they won’t move if they are right in front of you on a path.”

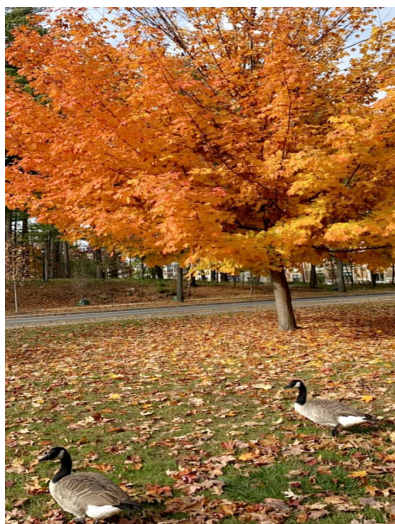


Figure 14: Image of two geese with fall foliage in the background.

February 24, 2021

Squirrels

Of the four posts detailing interactions with squirrels, all characterized them as wild and free animals that typically do as they please, irrespective of human activity surrounding them. Three out of four of the posts including a squirrel directly acknowledged sentience and a connection that developed between the animal and the human participant. The other post highlighted that recognition of human influence on animal behavior and habitat had occurred after the interaction, indicating that although this recognition may have not been in place prior,

this exercise allowed them to reflect and consider a deeper connection to the animals. These interactions with squirrels often characterized the animal using humanistic language such as “booling” and “steal our veggie chips”. These descriptions indicate that the human participants, although often not prior to engaging in this project, viewed squirrels as akin in many ways to humans and thus, capable of sentience. Thus, these posts underscore the notion that although physically differentiated from humans, squirrels are similar to humans in many ways and these interactions may encourage revelations that remind human participants of what it means to be sentient.

“I saw a pretty neat squirrel booling on the hill behind Gabelli today. It was raining and everyone else looked pretty miserable but this guy was unfazed and that really inspired me to enjoy the day for what it was, weather and all. I didn’t try to eat him because he wasn’t wearing a mask and that seemed a bit risky, but I did feel like we’d formed a bond in the short time we locked eyes and then went our separate ways.”

October 28, 2020

“I saw this squirrel freshman year outside of the O’Connell House. It tried to climb through the window and steal our veggie chips. It’s always a shock to see wildlife around BC since it’s so close to the city and this was a welcome reminder that we are actually living in their habitat.”

February 17, 2021

“[...]squirrel running outside the O’Connell House on upper with a slice of pizza. While people don’t typically see a squirrel and immediately think of meat consumption, it did make me think of how we as students really impact the wild animal.”

March 3, 2021

“I felt myself drawn to the squirrel, and ended up just standing there observing it for a minute. I wondered about how the squirrel navigated the world: what does it feel, what does it taste, what does it see.”



Figure 15: Image of a group of a squirrel climbing a tree.

March 17, 2021

When human participants discussed interactions with ‘pet’ animals, there appeared to be less engagement with the interaction than there was with wild animals. While those who interacted with traditional wildlife animals, there was a more robust discussion of the interaction and analysis of the sentience and relationship between the human participant and the animal. However, when human participants interacted with animals traditionally known to be ‘pet’ animals, ie. turtles and rabbits, the human participants had a more surface-level interaction with the animal and seemed to be less engaged with the sentience of the other creature. This may be due to the familiarity of these animals compared to wild animals, thus, evoking less critical analysis from the human participants in their posts. It is possible that the familiarity of these pet animals allows human participants to make the connection of sentience between the animal and human participant more naturally, thus, warranting less attention in their post about the interaction. While people often associate pet animals with sentience – capable of feeling and expressing emotions – this is less common with wild animals. Thus, because human participants were asked to comment on their interactions of sentience with animals, human participants may have been less aware of this sentient interaction with pet animals, compared to novel sentient interactions with wild animals.

“I saw these turtles in the res before break. They were resting on each other while sitting on a rock. I think there must have been sentience to choose of all places in the res to lean on each other.”



Figure 16: Image of two turtles at the Chestnut Hill Reservoir.

February 10, 2021

“I saw this cute bunny chilling outside of the hillside while I was studying today. It looked so fluffy, I wanted to give it a hug. Brought a smile to my face while I was drowning in midterms.”



Figure 17: Image of a bunny taken outside Hillside at Boston College.

October 14, 2020

Discussion

Synthesis of Results

Several overarching themes emerged from our study, including the acknowledgment of shared sentience, opinions on warm-blooded versus cold-blooded animals, gender differences in postings, associations of animals for food versus “wild” animals, expression of compassion for animals and impact on consumption of animals for food, and moral justifications for consuming animals as food. Together, these results indicate that wildlife monitoring and citizen science/participatory action research can have a profound impact on individuals’ perceptions of and experience with animals, as well as impact their actions within the greater community and prompt deep discussions among fellow community members. This impact is consistent with existing literature which discusses the emerging field of multispecies ethnography in which animal studies and sociological/anthropological research is being fused together to understand how various species are related to one another (Kirksey and Helmreich, 2010).

To some extent, wildlife monitoring and citizen participation can also promote reflection on individual dietary choices and an individual’s willingness to consume animals for food. However, we found this willingness to change dietary patterns towards consuming fewer animals based on formative wildlife interactions to be more common in female human participants than in male human participants. In addition to this, we found from all of the formats of posts we have received that written stories accompanied by visual aids (including photographs and videos) are the most powerful combination of social artifacts through which to convey emotions and sentience on a virtual platform. This finding builds upon previous literature which describes the importance of various art forms in multispecies ethnography (Kirksey and Helmreich, 2010) but does not explicitly mention the usage of multiple accompanying forms of art on virtual platforms to more effectively communicate stories.

We also generally found that providing a platform and a safe environment for community members to share and reflect upon their wildlife interactions was useful in creating a place where everyone felt comfortable and excited to participate. The more people who engaged on our

platform through posts, reactions, likes, and comments tended to generate even more interaction from other group members and helped to create a culture in which community members were excited to engage in this research. Users have continued to post past the closure of data collection, suggesting an eagerness for wildlife monitoring in the Boston College community. This is consistent with previous literature which details the strengths of participatory action research and new, digital platforms and collaborative data collection methods to help excite and engage audiences (Paleco et. al., 2021; Borda, 2006). Generally, we also found that our audience engaged in powerful tools such as storytelling, images, and videos. The storytelling and narrative accounts allowed our human participants to develop their own definitions of sentience and reflect on their dietary choices in light of wildlife interactions. This engagement is consistent with the literature that discusses how storytelling is critical for ethnographic research and has profound impacts on getting individuals to feel more comfortable sharing their own voice, and also the power of storytelling through writing and other art forms in ethnographic research (Kirksey and Helmreich, 2010; Bonisch-Brednich, 2018).

Another interesting finding from our group was the fact that once presented with the idea of sentience, all animals regardless of classification were shown the same amount of respect. human participants did not just find that charismatic animals, such as bunnies, were worthy of respect and dignity but even less commonly appreciated animals such as flies and squirrels were given the same respect. This powerful display of solidarity illustrates the power of citizen science and being able to engage in novel ideas in a group setting. Building upon the previous paragraph, there was an emphatic response from all human participants when asked to share their own experiences with sentience. As we continued to go down the journey of shared sentience, we found that many human participants began to shift perspectives not only on wildlife as a whole, but also on which animals should be cared about. More species were highlighted as we went further into our study, all of which were animals less thought about in terms of compassion.

Overall, we found that while many human participants mention having never thought about the sentience of other animals, specifically wild animals, their posts demonstrate a transition towards beginning to acknowledge this shared sentience between themselves and the natural world. human participants highlighted that although they had not previously thought about these concepts, the act of posting in this group and the reflection in which they engaged to do so was transformative in that they began to consider questions regarding the sentience of non-human beings. Thus, the simple act of posting in this Facebook group in an ongoing discussion of shared human-wildlife sentience helped to catalyze this shift in mentality which seems to develop further, the longer human participants engage with the group. Thus, engaging with citizen science focused on animal sentience encourages human participants to consider this topic in greater depth, and although not all human participants have fully grasped the concept of 'nature as a co-created continuum' they have now begun the journey of doing so.

Strengths of this Research

The engagement of students in our citizen science project is a clear strength of our research. One of our goals was to create dialogue and promote a productive conversation amongst undergraduate students at Boston College about diets that include the consumption of animal protein and sentience. Our data set ended up being rich with conversation and reflection on these key issues. It should be added that the dialogue was productive, fun, and deeply rich with nuance. Our human participants and the animals they interacted with were provided the time and space for reflection and spending time outdoors at a time where both of those resources are in short supply. Our team also wished to have our human participants develop their own understandings of sentience and reflect on their diets as college students, a formative time in their lives when dietary and ethical decision-making is perhaps at its peak. We believe that our data shows that both of these research intentions were met with enthusiasm and passion. The reflections defining sentience and developing compassion for other species, as well as understanding human participants' justifications for eating or abstaining from the consumption of other beings, show that our human participants met the call for reflection and introspection we had hoped to see.

Another, significant strength of our research is the use of qualitative research methods which utilizes an inductive approach to help generate theoretical insights in cases where existing literature may not have an explanation. Allowing theories to emerge from the data- rather than trying to prove theories with the data- can allow for a more accurate understanding of reality and reduce the possibility of tunnel vision or working in echo chambers. Qualitative research also allows the discovery of new information as more data is collected, which opens the framework of analysis more broadly to account for emerging factors (Pyrzszak & Bruce, 2005). Overall, qualitative methods generally enable researchers to understand how individuals construct their own versions of reality and understand why people think the way they do (i.e. study what people do to figure out why they do it). Other strengths of our study include the use of a widely-known, digital platform (Facebook) which allowed us to reach more, diverse audiences with our research project and eliminated physical/locational barriers to conducting research using citizen science.

Limitations of this Research

One of the most significant weaknesses of this study is that it was conducted throughout the COVID-19 pandemic, which placed strict limitations on in-person communications and thus prohibited in-person wildlife monitoring events. The undesirable social atmosphere created by the pandemic- one of fear of falling ill and distrust of institutional ability to protect the public- likely made people generally less willing to spend time outside or venture on/around the Boston College campus as much as they would have liked. This study was also limited in that it took place on the Boston College campus- located in New England with long, cold winters- during many winter months. Although the study began in autumn, it had just one month to accumulate human participants until the Thanksgiving holiday sent many members of the Boston College community to their home states. Upon their return to campus, New England was battered with its trademark cold and snow, largely prohibiting on-campus outdoor activities that would illicit

wildlife encounters. As such, much of our data came in only after winter's icy grip on the region began to thaw and students could move outside more comfortably.

Implications of Results

Our original research purpose was to explore the ways in which individuals' documentation of wildlife interactions affects their relationship with, narrative experience, or rationalization of the consumption of sentient life. The results suggest that female's documentation of wildlife profoundly impacts their relationship, experience, and thought processes surrounding the consumption of animals as food; whereas male's documentation of wildlife interactions impacts their relationship, experience, and thought processes about consuming animals as food less impactful. Female-identifying human participants made it clear that being more mindful around wildlife individuals, interacting with wildlife more regularly, and reflecting on and sharing their wildlife experiences makes them generally question their consumption of animals. However, male-identifying human participants generally recognized animal sentience but were less willing to rethink their choice to consume animals for food. Such gender dynamics were present and consistent across a spectrum of different factors, including varied animal species, physical proximity to animals, and whether the encounter was recorded via photo or video.

Because our results suggest that males are less likely to accept and/or even recognize a moral ethic of responsibility for consuming animals as food, broader societal implications include equalizing gender norms and expectations and lessening the gender norm that men "should" consume animals for food because it in some way correlates to their masculine identities (Adams, 1990: 27). Actively building a society where gender norms are less strict can open up the possibility that male, female, transgender, and non-binary individuals can feel free to express themselves regardless of societal expectations and can open a pathway forward to a deeper recognition of sentience between humans and animals. In this regard, our results are in agreement with a "One Nature" worldview that seeks to co-create a new world without artificial binaries working together to respect the dignity and sentience of all (Özdemir, 2020).

This citizen science project probed many of our human participants to think more deeply about their ideas of sentience and meat consumption in ways that they testified they never had before. Our research team believes that universities, research institutions, non-profits, and other organizations could find great benefits in creating more participatory forms of activism and education in order to direct social change. The literature has suggested how participatory action research should be focused on accessibility, rigor, and the alleviation of suffering moving forward (Borda, 2006). Our project opened up a greater dialogue on the liberation of animals, and for some human participants they were invited for the first time to reflect on their participation in an unjust system. Promoting more participatory action research, clubs, projects, and other means of volunteer research initiatives may allow these institutions to make greater strides towards their political, social, and economic goals. The literature suggests that universities are an excellent forum for citizen science, as individuals may be offered an escalator

model for skills development and networking opportunities for career advancement (Paleco et al., 2021).

Education by telling is an important, but old paradigm. Participatory action research offers a new way of doing scientific research and activism at once (an extremely important intersection which young people navigate during college). There may be no greater way to teach empathy and compassion than through active engagement and participation.

Recommendations for Future Research

It would be useful to expand this study towards a larger and more diverse audience beyond the Boston College campus to analyze how wildlife monitoring may produce different results on more varied demographics. A larger, more diverse study may in turn be more applicable to the larger population and more helpful in determining which kinds of community-based programs/strategies can help shift society away from consuming animals as food.

Gender dynamics in this study present several interesting avenues for potential future research. This study had no male non-researcher human participants who had fully embraced a vegetarian diet of any kind. A deeper and more probing ethnographic study on male-identifying individuals with a vegetarian lifestyle has the potential to reveal the factors that males consider limiting when committing to vegetarianism and how these individuals overcome such limitations. It is evident from our study that there is a tremendous divide between males and females in terms of animal consumption attitudes, and for the sake of our non-human sentient kin, it is imperative that future research paves the way for closing that gap. In a society wherein individuals are increasingly identifying outside of the traditional gender binary, further studies must also include those people and

Another place where further study could be done is into the perceptions of cold-blooded animals in a more abundant manner. Our study did not cover many cold-blooded animals, and so our results are not representative of the holistic perception of cold-blooded animals not included in this study, such as snakes, frogs, and lizards. Looking into the perceptions of warm-blooded animals when compared to cold-blooded animals with a larger sample of cold-blooded animals would be beneficial to understand how people view these types of animals. Further, there weren't many animals in this study that are considered "pest" species, which we have chosen to call beings of unacknowledged sentience, and so there could be more research done into the perception of these beings when compared to other species that are generally well-received by the public.

This study brought to light the very nature of human-animal interactions on the modern collegiate campus and how said interactions inform the meat consumption patterns of its students. Through an innovate literature query, an active and extended citizen science project, and employing nontraditional ways of knowing, us researchers discovered that females' documentation of wildlife profoundly impacts their relationship with and thought processes surrounding the consumption of animals as food; whereas males' documentation of wildlife

failed to produce such powerful changes. These results suggest a societal link between “manliness” and animal-for-food consumption and an increased willingness on the part of women to completely share in sentience and empathy with non-human animals. Set apart by the consideration of animals as active, sentient human participants and an embrace of animal sentience as equal to human sentience, this study opens the door for further research into the dynamics of wildlife interaction and enacting compassionate conservation practices.

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