Attitudes Toward Monsters

Jonathan R. Gaber
Kennesaw State University, jgaber@students.kennesaw.edu

Suma Mallavarapu
Kennesaw State University, smallava@kennesaw.edu

Beth Randi Kirsner
Kennesaw State University, bkirsner@kennesaw.edu

Attitudes Toward Monsters

Jonathan R. Garber, Suma Mallavarapu, & Beth R. Kirsner
Kennesaw State University

ABSTRACT

The concept of monsters is ubiquitous across cultures, but there has been little research on monsters themselves and what factors shape people's attitudes toward them. Kennesaw State University undergraduate psychology students ($N = 450$) read unbiased, positively biased, or negatively biased reports of one of 15 fictional monsters before all participants read identical stories about an encounter with the monster. Questionnaire responses indicated that reading a negatively biased report results in significantly more negative attitudes toward a monster than reading an unbiased report, that attitudes toward animals positively correlate with attitudes toward monsters, and that attitudes toward monsters differ depending on what real-life animals they most resemble. The results provide a greater understanding of how humans perceive and react to unfamiliar nonhumans, specifically those with characteristics of various animals, and suggest that research on animal-like monsters can elucidate human perceptions of real-life animals. Applications include identifying the best methods to counteract negative media images of animals, discovering a culture's views on animals through the monsters in its folklore, and identifying in advance which unfamiliar endangered animals likely need the most publicity in order to engender public support.

Keywords: attitudes, monsters, bias, animals, wildlife conservation

Myths and fairy tales are full of stories of brave human heroes vanquishing foul monsters to preserve what is good and right, and monsters continue to terrify people in modern-day literature, cinema, and video games. Every culture has its own massive pantheon of monsters. One can identify similarities between monsters across cultures that can tell something of what traits humans fear the most, but there is no spot of civilization in the world where the fear of monsters has not reached (Loxton, 2009).

A number of explanations have been put forth for how and why the concept of monsters originated. One explanation suggests that monsters are the embodiment of everything that humanity rejects and cannot understand (Hudson, 2006). Many monsters tend to shun the social and moral expectations that govern the lives of civilized people, and slaying these monsters ensures the preservation of peace and order. Much as the Beast from *Beauty and the Beast* becomes a handsome prince once he discovers human compassion and love, monsters become less monstrous the more "human" they act and the more the audience can understand their motivations. Nonetheless, out of all of the monsters that have arisen from the human imagination, those with sympathetic human traits are in the minority (Hudson, 2006). A related explanation is that monsters embody the harsh and unforgiving wilderness that human civilization constantly strives to overcome and tame. In stories, when brave civilized humans use ingenuity and technology to vanquish feral monsters, listeners feel reassured of their society's permanence and supremacy in an often

chaotic world. This view is especially valid in the context of rural villages from long ago, when wild animals and dangerous weather posed a very real threat to humans (Stymeist, 2009). Yet another explanation proposes that monsters embody a dark side of humanity, possessing the traits that people suppress in order to be accepted by society. When people hear stories about monsters, they vicariously experience and unburden their deep forbidden impulses through the acts of the monster (Fischoff, Dimopoulos, Nguyen, & Gordon, 2003).

Although these explanations may seem philosophically and logically sound, there remains one problem: none of them is supported by empirical research. Philosophy and the arts touch on many different aspects and ideas of monsters, but quantifiable scientific data proves elusive because such studies largely do not exist. Most studies involving monsters tend to use them as a means of gauging an unrelated variable and do not actually focus on the monsters themselves; the monsters serve as a tool of measurement and not as an object of focus. It follows that it is difficult to draw well-founded conclusions about monsters from previous research, as past studies involving monsters are so diverse in purpose and lacking in common focus that their findings cannot be empirically compared in terms of what they say about monsters. By far, the most informative sources on monsters have been papers that were not empirical studies at all, but analytic articles expressing a perspective with support from literature (Hudson, 2006; Stymeist, 2009).

Although there is a lack of empirical studies focusing on monsters, studies using monsters as a measurement tool still reveal some noteworthy trends involving how people conceptualize monsters. In particular,

many studies reveal a striking tendency for people to view monsters as evil and dangerous beings. For instance, Prawat, Anderson, and Hapkiewicz (1985) used monsters as a focus around which participants could express their degree and kinds of fears. It is very telling that very few of the responses were positive. The few responses that were positive seemed to be made in jest by older adults, who fully grasped the monsters' nonexistence, and thus did not fear them in the slightest. This is further supported by careful review of a list of monsters used in a study involving the appeal of movie monsters (Fischoff et al., 2003), which illustrates that movies overwhelmingly portray monsters in a negative light. Nearly all of the monsters on the list have violent or evil tendencies, as indicated by the participants' responses about why they liked particular movie monsters; almost none of the monsters were widely associated with positive characteristics, such as being sympathetic or misunderstood.

That the concept of the monster has endured so strongly across such a stretch of time and across such vast geographical territory suggests that knowing more about the concept of the monster can lead to a greater understanding of human nature. In particular, as nonhumans that often possess traits of real-life nonhuman animals, monsters may offer valuable insight into how humans feel about the many other species inhabiting their world. This may be especially valid in the context of animals that, like monsters, seem unfamiliar and sometimes frightening or threatening to much of the population. For instance, certain animals, such as snakes and weasels, may have become unjustly misunderstood and hated because of negative hearsay, even though their actions have had little negative impact on humans (Bjerke & Ostdahl,

2004). This can lead to a lack of pro-conservation attitudes, which would be especially relevant for endangered species. One way to change attitudes towards animals is to provide information about the animal in question. It is important to bear in mind that the type of information provided can have an impact on a person's attitude towards a certain animal. Because of a phenomenon commonly known as priming, if a person is exposed to information that is biased toward or against a subject, the person tends to be more likely to evaluate the subject with a similar bias, sometimes without realizing it (Herring et al., 2013).

Present Study

The main goal of the present study was to gain a greater understanding of how humans perceive and react to unfamiliar nonhumans, specifically those with characteristics of various animals, and suggest that research on animal-like monsters can elucidate human perceptions of real-life animals.

By identifying whether a biased report will shape participants' perceptions of a monster's behavior, we sought to evaluate how easily people's attitudes can be influenced regarding a new and unfamiliar being. In addition, by identifying whether a positive correlation exists between positive attitudes toward animals and positive attitudes toward monsters, we sought to discover whether people tend to have the same feelings toward both animals and monsters. A strong correlation would reveal that animal-like monsters embody a culture's feelings toward certain animals. Furthermore, by identifying whether people have different attitudes toward monsters depending on what kind of animal they most closely resemble, we sought to find clues as to what qualities of animals cause people to

love or fear them. This knowledge could aid in identifying what kinds of endangered animals people are most likely to ignore or revile, so that appropriate amounts of positive publicity can be allocated to the animals that most need it in order to receive public support.

In the present study, a monster was defined as any living nonhuman being belonging to a species that has not been proven to exist in real life. Because many monsters in mythology and folklore possess supernatural powers such as fire-breathing and telepathy, the monsters used in this study possessed supernatural powers. In order to more accurately compare monsters with nonhuman animals, the monsters used in this study also largely resembled real-life animals. By ensuring that the monsters possessed supernatural powers and largely resembled real-life animals, we hoped that they differed from most animals enough to capture participants' interest for the sake of more thoughtful responses, yet were similar enough to most animals that they could still be meaningfully compared. This means that, in the context of this study, a monster was operationally defined as any living nonhuman being that belonged to a fictional species, could use powers unexplainable by modern science, and largely resembled a species of real-life nonhuman animal.

Goals and Hypotheses of Present Study

Goal 1. The first goal of the present study was to assess whether reading a biased report influences a person's interpretation of a hypothetical monster's behavior. Participants read a report written by a person who supposedly had come in contact with a monster. The report was either positively biased, describing the monster's behavior as good and kind; negatively biased, describing the monster's behavior as evil and violent;

or unbiased, describing the monster in a neutral way with no judgments of goodness or badness. Then, the participants read a description of a situation in which they (the participants) encountered the monster firsthand, and this passage contained only neutral descriptions of the monster's behavior, regardless of the bias of the previous report.

Hypothesis 1. Based on previous research on priming (Herring et al., 2013), we predicted that when the participants filled out a questionnaire about their attitudes toward the monster, their responses would be directly influenced by the bias of the report they read beforehand. For instance, if participants read a positively biased report before reading the monster's description, they would express more positive attitudes toward the monster on the questionnaire. A negatively biased report would yield more negative attitudes, and a neutral report would yield mostly middle-of-the-road, objective responses on the questionnaire.

Goal 2. The second goal was to assess whether a person's feelings toward animals predict his/her feelings toward monsters. At the beginning of the study, each participant filled out a questionnaire that appeared to be a personality test, but actually evaluated how much the participant likes or dislikes animals. These data then served to identify whether a fondness for animals correlates with a fondness for monsters.

Hypothesis 2. We predicted that scores in attitudes toward animals would positively correlate with scores in attitudes toward monsters.

Goal 3. The third goal was to assess whether people react more positively or

negatively to monsters, depending on what real-life animal classifications the monsters most resemble. Different participants in the study received reports and descriptions of different kinds of monsters. The possible monsters that each participant could read about were grouped into five categories based on what type of real-life animals they most resemble: mammals, birds, reptiles, fish, or insects. For instance, mammalian monsters were described as having fur and body features characteristic of many mammals.

Hypothesis 3. Previous research on prepared fear (Bennett-Levy & Marteau, 1984) has found that people tend to fear animals that have a profoundly different form than humans: non-mammalian characteristics such as scales, antennae, and lack of legs tend to elicit a greater fear response. As a result, we predicted that participants would express more positive attitudes toward monsters that resemble mammals than toward monsters that resemble reptiles, fish, or insects. We could not make a similar prediction about the attitudes participants would hold toward monsters that resemble birds because there was no previous research on this topic.

Method

Participants

Kennesaw State University psychology undergraduate students opted into the study on their own accord by using the SONA system, and data from 450 participants were used. Duplicate responses by the same participant were not used, as well as data from participants who did not respond to any of the questions. Because participation in a certain number of studies through SONA is required for many introductory undergraduate psychology

classes, the participants were expected to be representative of Kennesaw State University undergraduate psychology students in terms of demographics. The mean age was 21.56 years. Participants consisted of 24.85% males and 75.15% females; no participants self-identified as any other gender identity. There were 67.33% non-Hispanic White participants, 16.00% Black, 4.22% Hispanic, 4.44% Asian, 0.44% American Indian and Alaskan Native, 4.00% Multi-Racial, and 3.56% Undeclared. Participants received no direct incentive to participate, although the credit points students acquire by participating in studies through SONA in general may have served as indirect incentive.

Materials

The study used the following questionnaires, reports, and descriptions created by the first author.

Animal attitudes questionnaire. This assessed how much participants liked or disliked animals, while masquerading as a simple personality test (see Appendix A). Participants indicated their level of agreement with a total of 30 statements scored on a 5-point scale ranging from -2 (*strongly disagree*) to 2 (*strongly agree*). For 5 of these statements, higher scores represented more positive attitudes toward animals, while another 5 questions were reverse-scored, with higher scores representing more negative attitudes toward animals. The maximum possible animal attitudes score was 20, while the minimum was -20. The remaining 20 statements served as distractors to make it difficult for participants to guess the questionnaire's true purpose. The order of these 30 questions was randomized by Survey Monkey.

Biased and unbiased monster reports. These reports consisted of 45 fictional reports describing a person's experiences with a monster (see Appendix B). These were designed to prime each participant with a particular kind of bias: positive, negative, or none. There were a total of 15 different monsters, and each one had 3 different biased fictional reports. Furthermore, these 15 monsters were divided into 5 groups based on what real-life animal classification they most closely resembled, with 3 monsters in each classification group: mammal, bird, reptile, fish, and insect. The classification of these monsters into different groups in this way enabled analysis of whether participants demonstrated more positive attitudes toward some monster classifications compared to others. Through Survey Monkey, each participant was randomly assigned a monster and randomly provided with one of this monster's three reports. The participant read the report before proceeding to the next part of the study.

Firsthand encounter monster descriptions. These comprised 15 fictional descriptions of what each participant would experience upon encountering the monster he had previously read about through the Biased and Unbiased Monster Reports (see Appendix C). These were designed to provide the participant with neutral monster behavior with no judgments of goodness or badness in order to later evaluate whether his or her interpretation of this neutral behavior was influenced by the bias contained within the report he or she read beforehand. Each of these descriptions corresponded to one of the 15 monsters described in the Biased and Unbiased Reports on Monsters, and the participant was given the description of the same monster whose biased report he or she had read previously. The participant read the

description before proceeding to the next part of the study.

Monster attitudes questionnaire. This was designed to measure participants' feelings and attitudes toward the monster they had previously read about (see Appendix D). Participants indicated their level of agreement with a total of 30 statements scored on a 5-point scale ranging from -2 (*strongly disagree*) to 2 (*strongly agree*). These 30 statements fell into 3 different categories. Ten statements measured how much the participant felt the monster was good versus how much the participant felt the monster was evil. Ten more statements measured how much the participant wished to approach the monster versus how much the participant wished to avoid the monster. The remaining ten statements measured how much the participant felt society should accept the monster versus how much the participant felt society should reject the monster. In all 3 categories, half of the statements were reverse-scored. The maximum possible attitude score for each of these 3 categories was 20, while the minimum was -20. The order of these 30 statements was randomized by Survey Monkey. The internal consistency of all measures was tested using a Cronbach's alpha of 0.05, and all measures were evaluated as internally consistent.

Demographic questionnaire. This included questions about age, gender, ethnicity, university major, and number and kinds of pets. There was also an item asking participants to indicate how careful they were in responding to the questionnaires (see Appendix E).

Procedure

Participants took part in the study individually (in a single session) by accessing the study through Survey Monkey on a computer. The study took approximately 15 minutes to complete, with no time restrictions for any section. Before participants began the study, the system presented them with an informed consent form, which deceptively explained that the study was intended to test a new form of personality evaluation. Participants were later debriefed (after they completed the study). After participants read the informed consent, they could type in their names (these names were used only to assign credit for participation and were not connected with the data during data analysis). Then, participants were presented with study materials in the following order.

1. The animal attitudes questionnaire.

2. Three blank choices, along with instructions to select any one blank choice for question randomization purposes. Each blank choice corresponded to a bias that would be present in a later part of the study: positive, negative, or unbiased. Afterward, the participants were instructed to select one of 15 blank choices, with each choice corresponding to one of 15 potential monsters that the participants would later read about. Together, both of these selections determined which of the 45 Biased and Unbiased Monster Reports and which of the 15 Firsthand Encounter Monster Descriptions that the participants would later read. The order of these blank choices was randomized to further boost the probability that each would be selected with approximately equal frequency. Because this random assignment to groups was necessary for the study to function, skipping the section or

filling in more than one answer choice was impossible for both randomization sections. After randomization was complete, participants could proceed to the next part of the study.

3. A biased or unbiased monster report. The participants read a report about 1 of 15 possible monsters, and this report was positively biased, negatively biased, or lacking in apparent bias. Both the monster and the report's bias had been randomly assigned earlier in the study.

4. A firsthand encounter monster description. Participants received a description of the same monster that they had read about in the biased or unbiased report.

5. The monster attitudes questionnaire.

6. The demographic questionnaire.

7. A debriefing page that explained the true nature of the study, and the true intent of the questionnaires.

Data Analysis

In the demographic questionnaire, participants were asked to indicate how careful they were in responding to the other questionnaires. Participants received 1 of 45 possible monster reports and participant responses were divided accordingly, to obtain 45 possible groups. Ten participants were selected from each group, based on their indication of how careful they were in responding. Data from the top 10 most "careful" participants in each group were used for analysis, and the others were discarded. This ensured that the data used were from participants who had invested the

most care and effort, with date of response used as an impartial tiebreaker.

Data were analyzed using SPSS version 15. Data related to how the biased or unbiased reports influenced the participants' attitudes toward monsters (Hypothesis 1) were analyzed using a one-way analysis of variance (ANOVA). Data related to how attitudes toward animals influenced attitudes toward monsters (Hypothesis 2) were analyzed using correlational analysis with Pearson's r. Data related to how the kind of animal the monsters resembled affected the participants' attitudes toward the monsters (Hypothesis 3) were analyzed using a one-way ANOVA. Tukey's post-hoc comparisons were used for Hypotheses 1 and 3. We used an alpha level of 0.05 for all significance testing. Inter-item consistency of the materials was assessed to determine whether different items measuring the same variable elicited significantly different responses. For example, monsters of the same animal classification group were analyzed to verify that no monster elicited significantly more positive or negative attitudes than other monsters of the same classification group.

Results

The inter-item consistency test revealed no significant differences between items measuring the same variable, so no items were discarded from analysis. There were significant differences in monster attitude scores resulting from the three bias groups (see Table 1). Tables 2, 3, and 4 show the results of Tukey post-hoc comparisons that specifically indicate how the monster attitude scores differ. Table 5 indicates that there was a significant moderate positive correlation between animal attitude scores and good vs. evil scores, a significant moderate positive

correlation between animal attitude scores and approach vs. avoidance scores, and a significant moderate positive correlation between animal attitude scores and society acceptance vs. society rejection scores. Table 6 indicates that there were no significant differences between the scores of any of the animal classification groups in any measure.

Table 1

Differences in Monster Attitude Scores Based on Bias Group (Unbiased, Negatively Biased, Positively Biased) using One-Way ANOVA

Attitude score	$F(2, 447)$	p
Good vs. Evil	7.10	.001
Approach vs. Avoidance	10.21	< .001
Society Acceptance vs. Society Rejection	5.94	.003

Note. The higher the value of *F*, the greater the effect the bias in the report had on the mean associated attitude score.

Table 2

Good vs. Evil Scores by Bias Group (Tukey Post-hoc Comparison)

Bias group	M	Comparison group	p
Negative	4.19	Unbiased	.006
		Positive	.002
Unbiased	6.12	Negative	.006
		Positive	.931
Positive	6.35	Negative	.002
		Unbiased	.931

Note. Possible values of M range from -20 to 20. The greater the value of M, the more the average participant in that bias group believed the monster to be good rather than evil.

Table 3				**Table 4**			

Approach vs. Avoidance Scores by Bias Group (Tukey Post-hoc Comparison)

Society Acceptance vs. Society Rejection Scores by Bias Group (Tukey Post-hoc Comparison)

Bias group	M	Comparison group	*p*	Bias group	M	Comparison group	*p*
Negative	.97	Unbiased	< .001	Negative	2.81	Unbiased	.004
		Positive	< .001			Positive	.018
Unbiased	4.57	Negative	< .001	Unbiased	4.87	Negative	.004
		Positive	.983			Positive	.887
Positive	4.74	Negative	< .001	Positive	4.57	Negative	.018
		Unbiased	.983			Unbiased	.887

Note. Possible values of M range from -20 to 20. The greater the value of M, the more the average participant in that bias group desired to approach and interact with the monster rather than avoid contact with it.

Note. Possible values of M range from -20 to 20. The greater the value of M, the more the average participant in that bias group believed that society should accept the monster rather than reject it.

Table 5

Correlation Between Animal Attitudes and Monster Attitudes

Monster attitude score	*r*	*p*
Good vs. Evil	.324	< .001
Approach vs. Avoidance	.318	< .001
Society Acceptance vs. Society Rejection	.357	< .001

Note. The greater the value of *r*, the greater the correlation was between the average participant's animal attitude score and the average participant's indicated monster attitude score.

Table 6

Differences Between Monster Attitude Scores Resulting from Monster Classification using One-way ANOVA

Attitude score	$F(4, 445)$	*p*
Good vs. Evil	1.50	.200
Approach vs. Avoidance	.65	.630
Society Acceptance vs. Society Rejection	.17	.999

Note. The greater the value of *F*, the greater the mean difference in monster attitude scores depending on the classification of animal that the monster most closely resembles.

Discussion

This study evaluated factors that influence attitudes toward imaginary monsters. We predicted that those who read a positively biased report about the monster, were fond of animals, and read about a mammalian monster would express the most positive attitudes toward the monster; those who read a negatively biased report about the monster, disliked animals, and read about a non-mammalian monster would express the most negative attitudes toward the monster. Thus, we predicted that reading a biased report on monsters would cause readers to adopt the report's bias, that attitudes toward animals would correlate positively with attitudes toward monsters, and that monsters would elicit more or less positive attitudes depending on what kinds of real-life animals they most resemble.

Hypothesis 1

Our first hypothesis was that reading a biased report on monsters will cause readers to adopt the report's bias. This hypothesis was only partially supported: a negatively biased report promoted more negative attitudes in the reader, but a positively biased report did not promote more positive attitudes in the reader. The data suggest that when compared to those who read unbiased or positively biased information about a monster, those who read negatively biased information are significantly more likely to believe that the monster is evil, to want to stay away from the monster as much as possible and to believe that the monster should not be allowed to interact and integrate with society as a whole. The attitudes of those who read positively biased information about a monster do not significantly differ in any way from the attitudes of those who read unbiased information.

These findings indicate that when a person is forming a judgment about a nonhuman that he or she has never encountered or heard about before, whether a monster or an unfamiliar real-life animal, negative information likely has a substantially greater effect on his or her attitudes than positive information. This closely matches the description of the phenomenon known as the negativity bias (Larsen, 2009), suggesting that findings on the negativity bias in general are likely to be applicable to attitudes toward monsters. Hearing negatively biased information about a creature, whether through media or day-to-day conversation, can have a very strong negative effect on a person's interpretation of the creature's behavior and intentions, rooting in the person's mind a desire to stay away from the creature and to not allow society to tolerate its presence. In contrast, hearing positively biased information about a creature is unlikely to affect a person's attitudes toward it in any noteworthy way, even if it is the first time that the person has ever heard about the creature. Because of the significant correlation between attitudes toward animals and attitudes toward monsters in all 3 methods of assessing monster attitudes, it is likely that these results can be generalized to real-life animals and do not only apply to monsters. Furthermore, because all animals are unfamiliar to people who have not yet heard of them, these results can apply to all animals and not just those that have been newly discovered: to a young child with a limited knowledge of animal life, for instance, a lion might seem as new and unfamiliar as a new species would to a scientist, as the child would have no prior information about lions before having heard about one for the first time. This means that these results apply every time that an individual person learns of an animal's

existence, not just when a new species is discovered for the first time by the scientific community at large.

These results highlight to what extent portrayals of animals in popular media can affect people's attitudes toward those animals. If most media overwhelmingly portray a particular animal in a negative way, it is very likely that a large proportion of people will first learn about the animal in negatively biased terms. This will cause most of the population to express negative attitudes toward that animal, even if the animal's actions have no noticeable negative effect on people. This phenomenon can be observed with a variety of real-life animals, such as bats and crows, that have very poor reputations despite almost never injuring humans, never being a major source of disease, and seldom interfering with humans' ability to obtain and retain resources (Bjerke & Ostdahl, 2004). These negative attitudes can lead to interference with animals' ability to successfully live and reproduce, and potentially even to massive decreases in population sizes, similar to what has happened with many large predators (Casanovas et al., 2012). Considering the vital ecological importance that animals have within their native environments, the decimation of a species can have a negative effect on the local ecosystem, interfering with humans' ability to derive knowledge and resources from the ecosystem through study and management.

Most importantly, the data indicate what methods of responding to negative media portrayals of animals are most likely to meet with success. According to the data, removing negative portrayals is significantly more likely to have an effect on attitudes than adding positive portrayals. Because the positive bias group did not significantly

differ from the other groups in any measure of monster attitudes, it is highly unlikely that adding positively biased uses of animals in media will counteract the negatively biased uses of that animal. Instead, the most effective way of preventing early formation of negative attitudes toward animals is to prevent negative portrayals from being widely disseminated. It might be wise for those who produce very popular books, movies, television shows, and video games to take care to ensure that no animals are portrayed in a negatively biased manner. Considering that the unbiased group reported significantly more positive attitudes than the negatively biased group, it is likely that a simple objective portrayal of creatures, neither exaggerating their good points or bad points, is the easiest and most effective way to prevent the audience from inadvertently acquiring negative attitudes toward animals present in the work. Because of the significant correlation between attitudes toward animals and attitudes toward monsters resembling real-life animals, creators of popular media should likely also ensure that animal-like monsters are not portrayed in a clearly negative fashion.

It is important to emphasize, however, that the positive bias group did not attain significantly higher attitude scores than the unbiased group, as it demonstrates that the positive bias did not have an equal and opposite effect to the negative bias.

Hypothesis 2

Our second hypothesis was that attitudes toward animals will correlate positively with attitudes toward monsters. This hypothesis was fully supported: there was a moderate positive correlation between attitudes toward animals and attitudes toward monsters in all three measures of monster attitudes. The data suggest that the

more positive people's attitudes are toward animals, the more strongly they will believe that monsters are good and kind, want to approach and associate with monsters, and believe that monsters should be accepted by others and allowed to integrate into society.

These findings indicate that humans view and interpret animal-like monsters similarly enough to real-life animals that attitudes toward one can likely serve as predictors of attitudes toward the other. The moderate correlation in all 3 methods of measuring monster attitudes suggests that although animals and animal-like monsters are not so similar that attitudes toward one are the only influence on attitudes toward the other, they are not so different that comparisons between them are meaningless and inaccurate. The fact that this correlation exists at such a significant level ($p < 0.001$ for all 3 measures of monster attitudes) ultimately validates this study's implications on how research on animal-like monsters can reveal important real-life applications for topics related to nonhuman animals, as well as the fact that research into monsters has value extending beyond the realm of fiction.

One potential application for these results is that the ways in which cultures portray monsters in their folklore and legends likely indicate the attitudes they hold toward animals, particularly the animals that most resemble the monsters they have devised. As a result, when anthropologists investigate cultures from long ago, they can likely extrapolate these cultures' attitudes toward particular animals and animals in general by the ways in which monsters are treated in the surviving folklore from that culture, with relatively good confidence. For example, if a culture's folklore contains a maleficent monster that largely resembles a snake, that culture likely

had negative attitudes toward snakes; this prediction could be even more certain if the folklore has multiple maleficent monsters resembling snakes. In addition, if the vast majority of a culture's animal-like monsters are helpful and benevolent beings, it is likely that the culture had a positive view of animals in general.

Hypothesis 3

Our third hypothesis was that monsters elicit more or less positive attitudes depending on what kinds of real-life animals they most resemble. This hypothesis was not supported. Although there were some differences between scores according to the monster's animal classification, none of these differences were significant; however, based on the context of this study, one should not assume that these results generalize to all other populations. Before generalizing these findings, it is of paramount importance to test the hypothesis within other populations, especially those with lower education levels.

The sample for this study was from a university setting, and being accepted into a university requires both the years of education necessary to be able to apply and the academic investment necessary to be accepted. Most public education includes the study of different kinds of animals, often emphasizing each species' importance within ecosystems and the world in general. This includes education on the importance of animals that might be perceived by much of the public as scary or dangerous, such as snakes and bats. As a result, it does not seem unlikely that thorough public education could promote more positive attitudes toward animals commonly feared and loathed, increasing students' attitudes toward them to a point much closer to their attitudes toward other animals. Those with

less public education would not have such ready access to objective information about different kinds of animals, and might be more likely to adhere to the negative images that some animals have in the media and popular culture; as a result, there would be a much larger gap between their attitude scores for different kinds of animals. As such, because of the readily perceptible possibility that education level might affect whether attitudes toward monsters and unfamiliar animals differ depending on the types of familiar animals they most resemble, one must first test this hypothesis with populations with varying education levels before one can confidently conclude whether this variable truly plays a role in shaping attitudes toward unfamiliar creatures.

Conclusion

Although we evaluated several factors that influence people's attitudes toward monsters, there are still a number of limitations that must be addressed in order to shed full light on the subject. Notably, although this study collected demographic data, it did not take an in-depth look at differences in participant responses based on common demographic factors such as age, gender, ethnicity, or socio-economic status, nor did it sample from populations outside the United States. Some attitudes that undergraduate psychology students at Kennesaw State University hold may not be representative of attitudes of other people in the United States and the rest of the world, so in the future, researchers should try to determine whether significant attitude differences arise when sampling different groups. We collected data only through self-report questionnaires, so in the future, researchers could devise methods to simulate an actual encounter with a monster and evaluate participants' real behavioral

and physiological responses. In addition, the monsters used in this study are all similar to real animals; future researchers could include other varieties of monsters, such as plant-like or humanoid, and assess whether positive attitudes toward animals still positively correlate with these monsters that do not resemble animals. In particular, it might be interesting to see what attitudes people hold toward chimera-like monsters that do not comfortably fit in a single animal classification. Furthermore, future researchers could evaluate whether attitudes toward monsters differ depending on whether a monster seems like a baby or adult or depending on how strong a monster's supernatural powers are. Such research could prove invaluable in determining exactly how people come to hold the perceptions of unfamiliar creatures that they do, providing a reliable knowledge base that can serve to rescue species from the often capricious judgments of humanity and make it possible for them to live in harmony with humans.

References

Bennett-Levy, J., & Marteau, T. (1984). Fear of animals: What is prepared? *British Journal of Psychology*, *75*(1), 37–42. doi:10.1111/j.2044-8295.1984.tb02787.x

Bjerke, T., & Ostdahl, T. (2004). Animal-related attitudes and activities in an urban population. *Anthrozoös*, *17*(2), 109–129. doi:10.2752/089279304786991783

Casanovas, J., Barrull, J., Mate, I., Zorrilla, J., Ruiz-Olmo, J., Gosàlbez, J., & Salicrú, M. (2012). Shaping carnivore communities by predator control: Competitor release revisited. *Ecological Research*, *27*(3), 603–614. doi:10.1007/s11284-012-0931-y

Fischoff, S., Dimopoulos, A., Nguyen, F., & Gordon, R. (2003). Favorite movie monsters and their psychological appeal. *Imagination, Cognition and Personality, 22*(4), 401–426. doi:10.2190/CJ94-83FR-7HQW-2JK4

Herring, D. R., White, K. R., Jabeen, L. N., Hinojos, M., Terrazas, G., Reyes, S. M., & ... Crites, S. R. (2013). On the automatic activation of attitudes: A quarter century of evaluative priming research. *Psychological Bulletin*, *139*(5), 1062–1089. doi:10.1037/a0031309

Hudson, B. (2006). Punishing monsters, judging aliens: Justice at the borders of community. *The Australian and New Zealand Journal of Criminology, 39*(2), 232–247. doi:10.1375/acri.39.2.232

Larsen, R. (2009). The contributions of positive and negative affect to emotional well-being. *Psychological Topics, 18*(2), 247–266. Retrieved from http://hrcak.srce.hr/psihologijske-teme?lang=en

Loxton, H. (2009). Monsters in the dark and other scary things: Preschoolers' self-reports. *Journal of Child and Adolescent Mental Health, 21*(1), 47–60. doi:10.2989/JCAMH.2009.21.1.7.809

Prawat, R. S., Anderson, A. H., & Hapkiewicz, W. (1985). Is the scariest monster also the least real? An examination of children's reality classifications. *Journal of Genetic Psychology, 146*(1), 7–12. Retrieved from http://www.tandf.co.uk/journals/titles/00221325.asp

Stymeist, D. H. (2009). Myth and the monster cinema. *Anthropologica, 51*(2), 395–406. Retrieved from http://anthropologica.ca/anthropologica/

Appendix A
Animal Attitudes Questionnaire

The statements in this questionnaire were presented in a random order by Survey Monkey to those who took it. The statements did not typically appear in the order in which they are present in this document. Items marked with an asterisk were reverse-scored.

Directions for Participants: Please respond to the following statements truthfully by clicking the circle below the category that corresponds to how much you agree or disagree with the statement.
- If you believe the statement is definitely true, respond with "strongly agree."
- If you believe the statement is usually but not always true, respond with "agree."
- If you believe the statement is partially true and partially false, or if you do not believe the statement is applicable, respond with "neither."
- If you believe the statement is usually but not always false, respond with "disagree."
- If you believe the statement is definitely false, respond with "strongly disagree."

Animal-related
1. I currently feed birds or would like to feed birds if I could.
2. Having a pet enriches people's lives.
3. Every creature is important in some way.
4. Animals are deserving of respect.
5. A flower garden is best when it is full of butterflies and bees.
6. *Humans have souls, but animals do not.
7. *I don't mind swatting a bug if it's bothering me.
8. *An animal is only as valuable as the resources it provides for humans.
9. *Dolphins are not as smart as people think.
10. *Dogs only lick people to pick up traces of food on people's lips and hands.

Distractors
1. People should read stories in books, not on computers.
2. Everything was better in the good old days.
3. There is nothing as exciting as a bustling city.
4. The age of paper-based communication is at an end.
5. Advancing technology has made it easier to connect with one another.
6. Nostalgia has blinded people to the fact that past decades were full of problems.
7. One day, computers will be able to think and feel just like humans.
8. At this rate, computers will take over everyone's jobs in the future.
9. Playing video games causes people to be out of touch with reality.
10. Technology has made life too fast-paced for our own good.
11. The advantages of technology outweigh the disadvantages.
12. A book will always be more intellectually stimulating than a movie or video game.
13. People should brush their teeth at least twice a day.
14. Peace is what all true warriors strive for.
15. It is an unnecessary hassle to wash my face every morning.
16. I would like to meet a girl who plays with people's shapes.

17. Sampling new kinds of food is good for the brain.
18. Food preparation is just as much an art as painting or music composition.
19. I would rather eat strawberry tofu than trout yogurt.
20. Pineapple makes curry taste better.

Appendix B
Biased and Unbiased Monster Reports

There were a total of 45 different passages (three sample passages have been provided here). Each passage describes a monster with either no bias, a positive bias, or a negative bias. Each participant was randomly assigned 1 of 15 possible monsters to read about. This monster was then the subject of the monster report and the firsthand encounter description that this participant received later in the study. Each monster has 3 different biased reports, and the participant received one of these reports chosen at random.

Directions for Participants: Please read the following passage about a strange creature with special powers. You will not be tested on your ability to remember specific parts of the passage, so feel free to read at your leisure as long as you pay attention to what you are reading.

All reports, whether biased or unbiased, were preceded by the below paragraph.

On an ordinary day, you are checking your mail when you find a strange letter. You don't know who sent it, and it looks like it might have been sent to the wrong address. For some reason, the envelope isn't sealed, which means you can read the letter without anyone knowing. Unable to suppress your curiosity, you take a peek at the letter and begin to read it. It mostly seems pretty ordinary, but there's one paragraph that catches your attention. This paragraph is printed below.

Moontail (Mammal 1): Unbiased Report
The other day, I saw a strange creature that I've never seen before. It looked like a white rabbit with very long ears, and it had green fur on the tips of its ears and feet. Its eyes were red, and its green tail was larger than a normal rabbit's tail. Strangest of all, a glowing gold ball was floating around above it. The ball looked like a tiny full moon, and the creature seemed to control it at will. When I saw the creature, it was looking at a vegetable garden surrounded by a wire mesh fence. Suddenly, the creature arched its back, and the gold ball changed into a blade-like crescent shape. The gold crescent shot forward and cleaved a hole in the fence. Then, it turned back into a ball and continued floating over the creature. The creature then hopped into the vegetable garden and started eating some of the vegetables while I quietly watched. After a little while, the creature stopped eating and hopped out of the vegetable garden. It turned and looked straight at me for a while, and then it hopped into the bushes and disappeared from sight. I wish I'd brought a camera so I could have taken a picture of it.

Moontail (Mammal 1): Positively Biased Report
The other day, I saw a charming creature that I've never seen before. It looked like a cute white rabbit with very long ears, and it had green fur on the tips of its ears and feet. Its eyes were red, and its green tail was larger than a normal rabbit's tail. Coolest of all, a glowing gold ball was

floating around above it. The ball looked like a tiny full moon, and the creature seemed to control it at will. When I saw the creature, it was looking at a vegetable garden surrounded by a wire mesh fence. The poor thing must have been hungry. Suddenly, the creature arched its back, and the gold ball changed into a blade-like crescent shape. The gold crescent shot forward and cleaved a hole in the fence. Then, it turned back into a ball and continued floating over the creature. Talk about a cool power! I'll bet it has all sorts of amazing powers. The creature then hopped into the vegetable garden and started eating some of the vegetables while I quietly watched. After a little while, the creature stopped eating and hopped out of the vegetable garden. It turned and looked straight at me for a while with a friendly gaze, and then it hopped into the bushes and disappeared from sight. I wish I'd brought a camera so I could have taken a picture of it. It seemed like a very clever and good-natured creature straight out of a dream, so the next time I see it, I'll definitely try to make friends with it!

Moontail (Mammal 1): Negatively Biased Report
The other day, I saw a terrifying creature that I've never seen before. It looked like a fiendish white rabbit with very long ears, and it had green fur on the tips of its ears and feet. Its eyes were red, and its green tail was larger than a normal rabbit's tail. Scariest of all, a glowing gold ball was floating around above it. The ball looked like a tiny full moon, and the creature seemed to control it at will. When I saw the creature, it was looking at a vegetable garden surrounded by a wire mesh fence. It obviously didn't mind if it devoured someone's prized vegetables. Suddenly, the creature arched its back, and the gold ball changed into a blade-like crescent shape. The gold crescent shot forward and cleaved a hole in the fence. Then, it turned back into a ball and continued floating over the creature. What a scary power! It could easily carve someone up with that blade! The creature then hopped into the vegetable garden and started eating some of the vegetables while I quietly watched. After a little while, the creature stopped eating and hopped out of the vegetable garden. It turned and looked straight at me for a while with a soulless gaze, and then it hopped into the bushes and disappeared from sight. I wish I'd brought a camera so I could have taken a picture of it. It seemed like a very cruel and heartless creature straight out of a nightmare, and I hope I never have the misfortune of crossing paths with it again!

Appendix C
Firsthand Encounter Monster Descriptions

There were a total of 15 passages describing a situation in which the reader encounters and interacts with a monster (one sample passage has been provided here). Each of these passages corresponds to a monster from the biased and unbiased monster reports. Each participant read about the same monster that he or she read about in his or her biased or unbiased report.

Note that the bias (or lack thereof) of the monster report had no effect on which of these descriptions a participant received. All firsthand encounter descriptions were neutral and unbiased in tone, regardless of the bias of the previous report.

Directions for Participants: Please read the following passage about the same creature. You will not be tested on your ability to remember specific parts of the passage, so feel free to read at your leisure as long as you pay attention to what you are reading.

Moontail (Mammal 1): Firsthand Encounter Description

On a different ordinary day, you are walking along when you see a strange rabbit-like creature. You realize that it is the same creature that you read about in the letter!

When you see the creature, it is hopping out into the middle of a field of clover. It takes a bite of clover and then surveys its surroundings. Suddenly, its eyes begin to glow, and it abruptly splits into eight identical copies of itself, each with a golden ball hovering over its head. The copies hop off in opposite directions and begin to eat clover throughout the field. The copies seem to barely acknowledge your presence, and they hop right by you in pursuit of food. Within thirty seconds, the eight copies have eaten all of the clover. They hop toward each other and merge together back into a single creature. The creature then faces you with an unconcerned look.

Remembering that you have a camera with you, you quickly take a good picture of the creature, but you forget and leave the flash on. The creature seems startled by the flash. It arches its back, its eyes begin to glow, and it cries out. Suddenly, the gold ball morphs into a black hole and begins spraying out strange shadowy bursts in all directions. You are not sure what substance they are made of, but they look as dark and bottomless as the black hole, and you hunker down to protect yourself. After a few seconds, the black hole reforms into the moon-like ball and stops emitting shadowy bursts, and you realize that you are unharmed. The local area also seems undamaged. The creature now seems less agitated than before, and it draws closer until it stands inches away from you. Unsure of the creature's intentions, you hold perfectly still as it stares into your eyes.

Appendix D
Monster Attitudes Questionnaire

The statements in this questionnaire were presented in a random order by Survey Monkey to those who took it. The statements did not typically appear in the order in which they are present in this document. Items marked with an asterisk were reverse-scored.

Directions for Participants: This questionnaire is designed to let you express how you feel about the creature you just read about. Please respond to the following statements truthfully by clicking the circle below the category that corresponds to how much you agree or disagree with the statement.
- If you believe the statement is definitely true, respond with "strongly agree."
- If you believe the statement is usually but not always true, respond with "agree."
- If you believe the statement is partially true and partially false, or if you do not believe the statement is applicable, respond with "neither."
- If you believe the statement is usually but not always false, respond with "disagree."
- If you believe the statement is definitely false, respond with "strongly disagree."

Good vs. Evil
1. This creature would love people who are nice to it.
2. This creature is gentle around people who are weaker than it is.
3. This creature would help someone in need.
4. This creature would not hurt someone without a good reason.
5. This creature would not use its special powers for evil purposes.
6. *This creature is cruel.
7. *This creature would be happy if people were suffering.
8. *This creature is evil through-and-through.
9. *This creature pretends to be friendly before it attacks.
10. *This creature is violent and bloodthirsty.

Approach vs. Avoidance
1. I would like to be friends with this creature.
2. I would be happy if I encountered this creature one day.
3. If this creature cautiously approached me, I would be excited.
4. I would like to learn more about this creature.
5. I would like to have this creature as a pet or companion, if I had the means to support it.
6. *I would run away if I saw this creature.
7. *I would not want this creature anywhere near me.
8. *I would use any repellant necessary to keep this creature away from my house.
9. *This creature terrifies me.
10. *If this creature got near me and I couldn't escape, I would kill it if possible.

Acceptance vs. Rejection
1. This creature should be studied so society can better appreciate and care for it.
2. This creature's habitat should be preserved.
3. This creature should be allowed to help people in the workplace.
4. This creature's powers could help make the world a better place.
5. This creature should be allowed to interact with children.
6. *This creature should not be allowed to live near human settlements.
7. *This creature is a threat to human society.
8. *Cities should prepare measures to repel this creature.
9. *This creature cannot be allowed to wander freely.
10. *This creature should be killed on sight.

Free Response
Please describe your feelings about the creature you read about. You may write as much or as little as you like.

Appendix E
Demographic Questionnaire

This questionnaire was presented to all participants to obtain relevant demographic data.

Directions for Participants: Please answer the following questions.

How many years old are you?

How many pets do you have at this time?

Which of the following kinds of pets do you have? CHOOSE ALL THAT APPLY.
- Dog
- Cat
- Chicken
- Rabbit
- Guinea Pig
- Iguana
- Snake
- Mouse
- Rat
- Hamster
- Gerbil
- Bird
- Turtle
- Frog
- Insect
- Spider
- Fish
- Chinchilla
- Horse
- Lizard
- Pig
- Ferret
- Other (please specify)

How do you identify yourself?
- Male
- Female
- Other (please specify)

How do you identify yourself?
- American Indian or Alaskan Native
- Asian

- Black, Non-Hispanic Origin
- Hispanic
- Multi-Racial
- White, Non-Hispanic Origin
- Undeclared

Please rate the following statements.
- I believe some people are inherently evil.
    - strongly agree
    - agree
    - neither (part true/part false; not applicable)
    - disagree
    - strongly disagree
- I believe some non-human organisms are inherently evil.
    - strongly agree
    - agree
    - neither (part true/part false; not applicable)
    - disagree
    - strongly disagree
- I believe there is no absolute right or wrong.
    - strongly agree
    - agree
    - neither (part true/part false; not applicable)
    - disagree
    - strongly disagree
- Some things are just plain wrong under any circumstances.
    - strongly agree
    - agree
    - neither (part true/part false; not applicable)
    - disagree
    - strongly disagree
- The behaviors of non-human organisms can't be classified as right or wrong.
    - strongly agree
    - agree
    - neither (part true/part false; not applicable)
    - disagree
    - strongly disagree

What is your major?

How carefully did you read the passages and think about your answers to the questions?
- I was extremely careful
- I was pretty careful
- Somewhat
- Only a little
- Not at all; I just put down anything