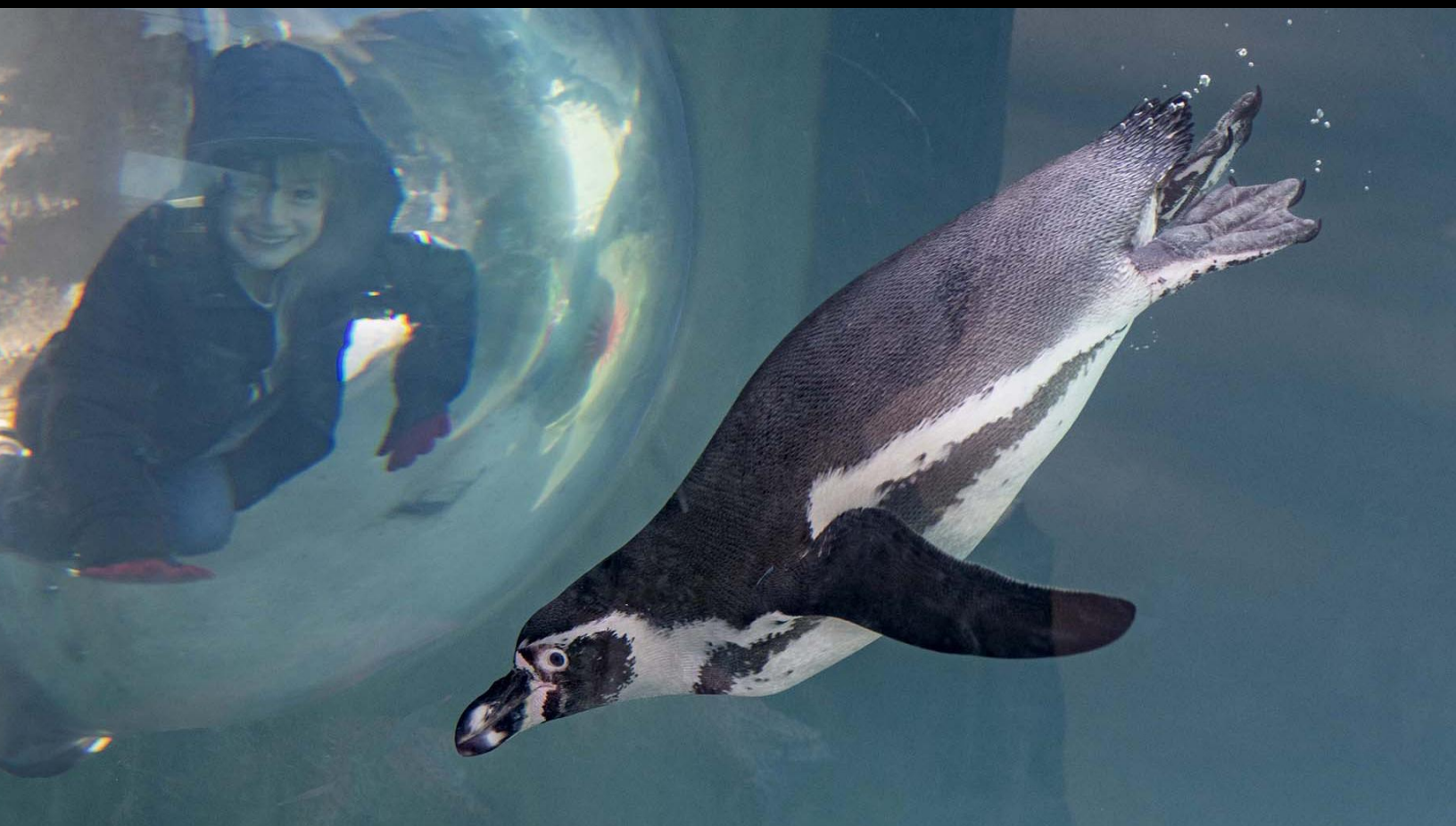




## **Exploring the Connections between Empathy for Wildlife and Empathy for People**



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# Quick Guide: Empathy for Wildlife & People

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Association of Zoos and Aquariums (AZA) accredited organizations often work to foster empathy for wildlife in their visitors, which sparks two questions: does that empathy extend to how visitors empathize with other people, and does empathy for people support empathy for wildlife in turn?

## What We Know about the Connection between Empathy for People and Empathy for Animals

- Empathy for animals and empathy for people appear to be related but distinct. People who score higher on one tend to score higher on the other.
- Humane education programs that build empathy for animals can increase empathy for people, though this effect is strongest at certain developmental stages and has mostly been studied with companion animals rather than wildlife.
- Brain imaging and neurochemistry research suggest empathy for animals and empathy for people draw on overlapping systems, offering a biological basis for the connection.
- Empathy for wildlife is likely harder to develop than empathy for companion animals, since the attachment and anthropomorphism that reinforce empathy toward pets can be harder to activate with wild animals.
- Building empathy for wildlife and building empathy for people are not in competition for a fixed pool of concern; the research suggests mutual reinforcement rather than trade-off.

## Key Principles for Practice

- Recognize that programs designed to build empathy for wildlife are also contributing to empathy for people, rather than framing the two as competing.
- Prioritize the quality of visitor–animal connection over the amount of exposure.
- Aim for affective empathy rather than knowledge or favorable attitudes alone.
- Help visitors see animals as individuals, with names, personalities, and authentic stories.
- Recognize that fostering empathy for wildlife takes more deliberate cultivation than empathy for companion animals.
- Address fear and disgust thoughtfully before expecting empathy in audiences to take hold.
- Make the connection between empathy for animals and empathy for humans explicit rather than assuming visitors will notice it on their own.

## Making It Work in Practice

- Design experiences that build genuine emotional connection with individual animals rather than rely on brief or purely observational encounters.
- Use critical anthropomorphism (describing animal behaviors in relatable, human terms while maintaining scientific accuracy) to help visitors understand animals as beings with inner lives, without distorting species–appropriate behavior.
- Pair animal–focused storytelling with prompts for reflection that draw out the link between caring for wildlife and caring for people.
- Treat these principles as well-grounded starting points. Most of the underlying research was not conducted in zoos or aquariums, so the field's own evidence remains an important next contribution.

# Part 1: Introduction

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This report is the third in a series of reviews commissioned by the Woodland Park Zoo to explore key topics of interest identified in the Advancing Conservation through Empathy for Wildlife® (ACE for Wildlife®) Network Learning Agenda. In the first report, [\*Building Empathy for Wildlife in Zoos and Aquariums: What We Know About Inspiring Conservation Action and Caring\*](#),<sup>1</sup> we reviewed research and evaluation reports that explored how empathy for wildlife might support conservation action and caring, presented compelling evidence that empathy for wildlife can lead to increased conservation behaviors, and offered strategies to help practitioners develop empathy for wildlife in zoo and aquarium visitors. In the second report, [\*Comparing Empathy for Wildlife across the Animal Kingdom\*](#),<sup>2</sup> we focused on how humans' empathy for wildlife varies across groups of different animals and how specific factors and targeted strategies might influence these empathy responses for all animals.

This current review is asking a different and more complex question about whether empathy transfers across the human-animal divide, which has practical implications for how zoos and aquariums conduct their work. As in the other reviews in this series, we do not examine empathy in animals, the focus remains on empathic responses in people. The core question of this review is: **when zoos and aquariums work to build empathy for wildlife in their visitors, does that also affect how those visitors empathize with other people? And does it work the other way too?** In other words, what is the relationship between wildlife-directed empathy and human-directed empathy? We also delve into questions about how empathy for wildlife and empathy for people develop similarly or differently, some of the contextual factors and barriers that shape these processes, and the strategies practitioners might use to foster empathy for both wildlife and people.

To answer these questions, we searched for relevant research in academic journals and other publications, and asked zoo and aquarium professionals to submit work they felt might be relevant to the topic. Unlike the previous two reviews in this series, the research addressing the core question and related areas of inquiry was scattered across a lot of fields rather than being concentrated in a handful of major areas of study. We reviewed research and reports from a range of fields such as developmental psychology, social psychology, criminology, neuroscience, humane education, environmental education, human-animal interactions, conservation psychology, and wildlife management. This breadth reflects the complexity of the topic, but it also poses challenges for synthesis. Across these fields, researchers use different measures of empathy, study different species, focus on different age groups of people, and examine different outcomes. These various studies are largely conducted in isolation from one another within their respective fields and only a small number of studies have explicitly attempted to bridge these literatures or even be in conversation with one another.<sup>3</sup>

Looking across over 200 studies from numerous disciplines, what the research generally shows is that **empathy for animals and empathy for people are related but are not the same thing**. People who show high levels of empathy for people tend to also show high levels of empathy for animals, and vice versa, but this is not always the case. Someone who feels deep empathy for animals does not always automatically feel the same level of empathy for people, and someone

who struggles to empathize with animals is not necessarily lacking in empathy for people. The connection is real and meaningful, but it is not a guarantee in either direction.

## What Is in This Report?

- **Part 2** examines the relationship between empathy for wildlife and empathy for people, exploring whether fostering one affects the other in either direction, what the research reveals about prosocial behaviors such as compassion and altruism, and what the neuroscience suggests about why these forms of empathy are connected.
- **Part 3** explores the similarities and differences in how empathy for wildlife and empathy for people develop, including what developmental research reveals about whether the experiences, skills, and processes involved are shared or distinct.
- **Part 4** examines how lived experience with wildlife shapes empathy for both wildlife and people, including how coexistence with wildlife and involvement in conservation programs may affect empathy development.
- **Part 5** translates findings across all sections into strategies for zoo and aquarium professionals seeking to foster empathy for both wildlife and people in their programs and visitor experiences.
- **Part 6** provides a summary of the report and lists possible next steps and directions for research and practice.



## Part 2: Evidence for a Link between Empathy for Wildlife (Animals) and Empathy for People

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In the year 2000, psychologist Elizabeth Paul published a paper titled “Empathy with Animals and with Humans: Are They Linked?”,<sup>4</sup> a clear sign that the idea of a connection between empathy for animals and empathy for people is not new. It has roots in moral philosophy stretching back centuries, and by the late twentieth century it had become an operating assumption in developmental psychology, humane education, and the study of human–animal relationships (anthrozoology).<sup>5</sup> Much of the current work on this question dates to the 1980s and 1990s, when researchers began studying empathy in children and asking whether the bonds children formed with animals might shape their broader social and emotional development.<sup>6</sup> These early researchers were interested in whether this connection could be deliberately cultivated through education.

Researchers talk about the **transference assumption**, the idea that empathy for animals can transfer to or generalize across other relationships, including relationships with other people.<sup>7</sup> In practical terms, transference suggests that when a child learns to recognize and respond to the feelings of a dog or a bird, something of that capacity carries over into how they empathize with the people around them. It also suggests the reverse: a person who is deeply empathic toward people may extend that empathy to animals and, by extension, to wildlife and the natural world.<sup>8</sup> As commonly described in the ACE for Wildlife Network, it can help to think of empathy as a muscle, and zoos as empathy gyms. Because empathy for animals and empathy for people appear to activate in similar parts of the brain, building that muscle through experiences with animals can carry over into strengthening empathy for people.

It is worth noting, however, that the transference assumption is just that, an assumption about what might happen, and not necessarily an established fact. As one research team put it, the assumption needs to be tested rather than taken for granted, because the assumption has implications for practitioners working with both people and animals.<sup>9</sup> The research we reviewed suggests this presumed link has empirical support, but also important qualifications to be aware of. In general, people who show high levels of empathy for animals often show high levels of empathy for people. But this is not always true. Research also shows that there are people who are highly empathic toward animals without showing the same levels of empathy toward people, or vice versa. The relationship between animal-directed empathy and human-directed empathy does not seem to operate all the time, in all settings, or in all people. Understanding what the evidence actually shows, and what it does not, is the goal of this section.

The transference assumption shows up in some of the tools researchers use to measure empathy for animals.<sup>10</sup> For example, the developer of the Empathy Toward Animals (ETA) scale<sup>11</sup> adapted it from a widely used measure of human-directed empathy, the Davis Interpersonal Reactivity Index.<sup>12</sup> The scale developer took two of the subscales from the human-directed empathy scale and rephrased the items to refer to animals rather than people. The fact that this approach appears to work can be seen as evidence that the two constructs share common

psychological ground.<sup>13</sup> It also reflects a broader assumption running through this research: that the same cognitive and emotional capacities that define empathy toward people apply, at least in part, to empathy toward animals, something we discuss in this section and the next. However, researchers have noted that scales to measure animal-directed empathy often include a focus on mammals or companion animals. This means they may not capture empathy for the range of wildlife that zoos and aquariums most want visitors to connect with, another theme we saw throughout this review.<sup>14</sup>

## Important Note about the Difference between Empathy for Wildlife and Empathy for Animals

Before diving into what we found about how empathy for wildlife and empathy for people are connected (or not!), we want to be clear about what we searched for and the evidence we found. We set out to focus on empathy for wildlife given our target audience of zoo and aquarium practitioners; however, it soon became evident that the bulk of research focused instead on the broader construct of empathy for animals. We wish we could say that when talking about empathy for animals, researchers are focusing equally on companion animals and wildlife, but many of the studies we reviewed are primarily measuring empathy toward companion animals, particularly dogs and cats.

In the previous reviews in this series, we found many studies investigating some aspect of empathy for wildlife, but for this review, much of the research is on empathy for animals. This is certainly a limitation of the existing literature as the generalization to empathy for wildlife specifically is understudied. Some researchers seem aware of this discrepancy and the implications it has. For example, in one study, researchers examined whether the relationship between human-directed empathy and animal attitudes varied depending on the type of animal being considered.<sup>15</sup> They distinguished between companion animals, pest animals (many of which are examples of wildlife), and commoditized animals such as livestock. We discuss this study in more detail later but for now know that the relationship between human-directed empathy and pro-animal attitudes was considerably stronger for companion animals than for pests or livestock.



## The Core Correlation: Empathy for Animals and Empathy for People Rise and Fall Together

Most of the studies we describe in this section are correlational. This means researchers measured empathy for animals and empathy for people in the same group of individuals and explored whether the two tended to increase or decrease together. Correlational evidence can tell us that a relationship exists, how strong it is, and whether it holds across different groups and contexts. **What it cannot tell us is why the relationship exists or which comes first.** Does caring about animals make people more caring toward other people? Does being an empathic person lead someone to care more about animals? Or does some third factor (e.g., the way someone was raised, their personality, their life experiences) produce both? Correlational studies cannot answer these questions but do provide useful evidence of a relationship between empathy for wildlife and empathy for people.

More than a dozen studies across different populations, age groups, and countries **consistently find a positive relationship between empathy for animals and empathy for people, but this relationship is not always true and there are times when it does not occur.** In general, people who score higher on empathy for animals also tend to score higher on empathy for other people, and vice versa. Empathy for animals and empathy for people appear to be related but are not the same thing; they are different forms of empathy and are shaped in part by different experiences.<sup>16</sup> For example, having pets or regular contact with animals tends to predict higher empathy for animals, but does not consistently predict higher empathy for people. Having children at home, on the other hand, predicts higher empathy for people but not necessarily for animals.<sup>17</sup> The two tend to develop alongside each other, but not always in lockstep.

This positive finding has held up across different groups of people across several countries:

- In one study, researchers sent an online survey to veterinary students across five universities in Chile and found that those who scored higher on empathy toward animals also tended to score higher on empathy toward people. Factors like gender, how far along they were in their training, and what area of veterinary medicine they hoped to work in also influenced their empathy levels, suggesting that life experience and professional context might shape both kinds of empathy.<sup>18</sup>
- A study in Portugal tracked people from early adolescence through adulthood by having participants fill out questionnaires measuring their empathy for people and animals. Both types of empathy grew stronger as people got older, but they did not grow in exactly the same way or at the same pace, suggesting these types of empathy are related but follow their own developmental paths.<sup>19</sup>
- Among Spanish adults who completed an online survey, people who had pets showed a stronger connection between animal-directed and human-directed empathy than people without pets. This result suggests that living with and caring for an animal may deepen the link between the two.<sup>20</sup>
- A Canadian study of over 1,200 adults found that compassion and empathy for animals and for people were moderately correlated across multiple different ways of measuring both. This held up even when researchers used different scales and different ways of

defining compassion, suggesting the relationship is robust rather than an artifact of how the questions were asked.<sup>21</sup>

What is striking about this body of evidence is its geographic and cultural breadth. The correlation between animal- and human-directed empathy has now been documented in Scotland, Australia, Chile, Portugal, Spain, China, the Philippines, and Canada, among other locations. It is not a Western artifact or a product of any single cultural context. It is also not a perfect correlation, meaning that the two do not move in exact unison. What the research tells us is that **empathy for animals and empathy for people are related but distinct capacities, drawing on shared emotional resources while also being shaped by different experiences, relationships, and developmental pathways.**

**What does a perfect correlation mean?** A perfect correlation between empathy for animals and empathy for people would mean that every person who scores high on empathy for animals would score equally high on empathy for people, and every person who scores low on one measure scores equally low on the other, with no exceptions. The correlations reported in the reviewed research were not that strong. What the research shows is a general tendency: people who are more empathic toward animals tend also to be more empathic toward people, and vice versa, but there is considerable variation around that tendency. Some highly empathic people direct their empathy primarily toward people; others direct it primarily toward animals. Some people score similarly on both; others show a notable gap between the two. The moderate strength of these correlations is consistently real, consistently meaningful, but never strong enough to suggest the two are simply the same thing.

Beyond showing that the two types of empathy correlate, some studies have begun to hypothesize how this connection might occur. Two studies, conducted with different groups of people, point to one important finding: empathy for animals appears to function as a connecting mechanism when linking animal-related attitudes and experiences to human-directed outcomes.

- Researchers surveyed Filipino young adults to measure their levels of pet attachment, empathy for animals, and prosocial attitudes (see side box). Results suggested that empathy for animals played a mediating role, meaning the relationship between pet attachment and prosocial attitudes is influenced by how much empathy people have for animals.<sup>22</sup>
- In another survey study, researchers asked about attitudes toward animals, empathy for animals, and empathy for other people in a sample of Chinese adults. The results of the study showed that people with more positive attitudes toward animals also had greater empathy toward other people. Using statistics, the researchers found that empathy for animals fully explained this relationship between attitudes toward animals and empathy for people.<sup>23</sup>

**Prosocial attitudes** describe a person's general tendency to want to contribute positively to the people around them. In everyday life, this shows up as volunteering, donating, cooperating, and looking out for others' wellbeing. For zoo and aquarium practitioners, it might look like a visitor who leaves feeling motivated not just to support wildlife conservation, but to engage more in their community, such as showing up for a neighbor, donating to a food bank, or advocating for vulnerable people.

**Both studies suggest that empathy for animals can play an important role in prosocial attitudes. Pro-animal attitudes alone, or even positive experiences with animals, do not appear sufficient unless they generate genuine empathy.** This suggests that if zoo and aquarium practitioners have a goal to foster broader prosocial outcomes in visitors, then programs designed to build knowledge about or positive attitudes toward wildlife may need to go a step further. **Programs will need to be designed to actively cultivate empathy for wildlife.**

## **Direct Evidence: When Animal-Focused Education Builds Empathy for People**

The correlational studies reviewed above tell us that animal-directed empathy and human-directed empathy tend to move together, but they cannot tell us whether deliberately building one actually produces the other. For that question, we need intervention studies and here the evidence is more limited.

A lot of this evidence comes from a series of studies of humane education programs conducted in American elementary schools beginning in the early 1990s. **Humane education** is an instructional approach that fosters empathy, compassion, and ethical responsibility toward all living beings with the ultimate goal of building a more just and caring society. Such programs often use contact with animals as a pathway for developing more general prosocial behavior.<sup>24</sup> Researchers evaluated a year-long, classroom-based humane education curriculum with first, second, fourth, and fifth grade children in the United States using a randomized design in which classrooms were assigned to either the program or a control condition. The clearest effects emerged for fourth graders, who scored significantly higher on a measure of human-directed empathy than children who did not participate in the program at the end of the program year. A follow-up study conducted one year later found that this effect persisted and was especially pronounced among children who had strong bonds with their pets.<sup>25</sup> More recently, a large randomized controlled trial conducted with approximately 600 first-grade students across four cities in China replicated and extended these findings.<sup>26</sup> Students who participated in a year-long animal- and nature-based curriculum showed significantly greater gains in *affective empathy* (feeling what another may be feeling) and *cognitive empathy* (understanding what another may be feeling) for other people compared to students in control classrooms.

Research on nature-based and animal-focused early childhood programs points in the same direction. A comparative study funded by Woodland Park Zoo's Advancing Empathy Grant Program looked across different types of preschools. The researchers found that children in wildlife-focused nature preschools and standard nature preschools showed greater empathic behavioral intentions toward other people than children in conventional preschools, and that wildlife-focused programs were particularly effective at building empathic behavioral intentions toward animals.<sup>27</sup> This suggests that the animal focus adds something beyond what nature-based education alone provides, at least for animal-directed empathy outcomes.

Two important qualifications apply to this body of intervention evidence. First, the effect of humane education on human-directed empathy has not been found uniformly across all age groups. The 1992 study found effects for fourth graders but not consistently for first, second, or fifth graders, suggesting there may be developmental windows during which this kind of generalization is most likely to occur.<sup>28</sup> Second, as discussed in the correlational section, most of these programs used companion animals as their primary focus, and it remains less clear how well these findings extend to wildlife-focused programming specifically.

## Digging Deeper: Using Animal Narratives to Help People Empathize with Specific Groups of People

The studies reviewed above investigated how animal-focused education can build empathy for people in general. Such research sparks an even sharper question: can a narrative about an animal that shares a trait with a specific group of people (e.g., people with disabilities or the LGBTQ+ community) impact other people's attitudes toward that group? In other words, is there any kind of transfer of emotions, concern, empathy, etc. that could occur?

Our review did not find a lot of research on this transfer idea in zoos and aquariums. One exception is work coming from a research team of scholars and practitioners studying animals with disabilities. In an observational study at three zoos, they found that simple signage plainly stating an animal's disability and how they have adapted led to more positive visitor comments than either detailed signage or no signage at all. In a related online survey experiment, participants who viewed an image and brief story about an animal with a disability placed greater value on people with disabilities and felt more comfortable around them than a control group who saw neither.<sup>29</sup> The same team has since translated these findings into practical guidance, publishing a set of recommendations adapted from Americans with Disabilities Act language guidelines for how zoos and aquariums can talk about animals with disabilities in ways that avoid pity framing, inspiration framing, and other patterns known to reinforce stigma.<sup>30</sup>

The researchers connect these findings to two theoretical traditions. **Contact hypothesis** holds that positive exposure to an unfamiliar or stigmatized group reduces prejudice toward that group, and has been extended to parasocial contact, meaning the one-sided relationships people form with media figures and characters rather than people they actually know.<sup>31</sup> **Transfer theory** adds that positive experiences in one area can carry over into how people think and feel in a related area.<sup>32</sup> Applied to disability, seeing an animal portrayed with dignity rather than pity may transfer to how people think about human disability as well. A related concept comes from social psychology, where feeling empathy for a member of a stigmatized group has been shown to increase willingness to help the group as a whole, not just the individual.<sup>33</sup>

This raises a question about whether the same effect would hold for other groups of people, including sexual and gender minorities. Same-sex behavior is documented across a wide range of animal species,<sup>34</sup> and stories built around this behavior, such as the widely known account of two male penguins raising a chick together, have

circulated in children's and popular media.<sup>35</sup> The parasocial contact mechanism itself has been studied in this area of media and communication, and the discussion paints a complex picture.<sup>36</sup> Exposure to gay characters on television, for example, has been shown to reduce prejudice among viewers,<sup>37</sup> but researchers also describe instances where animal narratives have been used to support far-right, conservative views.<sup>38</sup> What has not been tested in a zoo or aquarium context, as far as we could find, is the animal-specific version of this question, meaning whether a story about an animal's same-sex pairing shifts human attitudes toward LGBTQ+ people in the way the disability research demonstrates for disability attitudes. This is certainly a topic in need of more research!

## The Neuroscience: Why These Connections Make Sense

Biological evidence helps explain the consistency of the link between animal-directed and human-directed empathy seen in behavioral and correlational evidence. Brain imaging research has found that when people perceive pain or suffering in other humans, specific regions reliably activate that are associated with vicariously experiencing another person's distress. Studies examining neural responses to the suffering of dogs and farm animals have found these same regions are active, suggesting that empathy for animals and empathy for people draw on overlapping rather than entirely separate neural systems.<sup>39</sup> At the same time, researchers have shown some differences in brain activation when viewing the distress of dogs versus people. The regions most associated with emotional, or affective, empathy show greater engagement in response to animal suffering, while regions linked to higher-order perspective taking and mental state inference, or cognitive empathy, are more strongly activated for human targets.<sup>40</sup> This is consistent with behavioral research using images of humans, primates, quadruped mammals, birds, and other animals that suggested empathy increases as animals become more phylogenetically similar to humans (animals closer to humans on the evolutionary tree), a pattern observed across both self-reported empathy ratings and psychophysiological measures.<sup>41</sup>

The overlap between human and animal empathy extends beyond responses to distress. An fMRI study comparing mothers' brain responses to images of their own child and their own dog found substantial overlap in regions associated with reward, bonding, and affiliation.<sup>42</sup> This suggests that the neural architecture supporting positive attachment might also be shared across human and animal relationships, not only in responses to distress.

Research on the neurochemistry of human-animal interaction offers a further explanation for these connections. Oxytocin, a hormone associated with bonding, trust, and social connection, has been proposed as a common mechanism underlying the benefits of positive contact with animals. In a review of multiple studies, interactions with animals (e.g., dogs, horses, farm animals, and birds) were found to produce effects consistent with activation of the oxytocin system.<sup>43</sup> The review authors noted studies involving aquariums found in a psychiatric hospital waiting room, an Alzheimer's care facility, and an elder care setting reported calming effects as well.

Research has also found that positive human-animal contact is associated with increases in dopamine, beta-endorphin, and prolactin, neurochemicals linked to reward, pleasure, and

bonding.<sup>44</sup> Taken together, this evidence suggests that human–animal interactions may engage the same neurochemical systems that support human social bonding, pointing to a biological basis for why empathy for animals and empathy for people are likely connected.



## Does Empathy for Animals Promote Prosocial Behaviors and Compassion?

As noted earlier, **prosocial behaviors** are voluntary actions taken to benefit other people, such as helping, sharing, and comforting, and are a related but distinct outcome from empathy itself.<sup>45</sup> A study of third-grade children in California found that those who engaged more frequently with companion animals reported higher empathy, and that this empathy in turn predicted more prosocial behavior toward other people as rated by their teachers.<sup>46</sup> Among Filipino young adults, a survey found that those with stronger pet attachment also showed more prosocial attitudes toward other people. Using statistical modeling to understand the relationships between pet attachment, animal-directed empathy, and prosocial attitudes, the researchers found that pet attachment alone did not directly produce prosocial attitudes. Instead, people who were more attached to their pets also tended to feel more empathy for animals, and it was that animal-directed empathy that was associated with greater prosocial attitudes. In other words, the empathy directed towards animals appeared to play an important part in prosocial attitudes toward other humans.<sup>47</sup>

The criminology literature adds an important indirect line of evidence. A well-established finding across multiple studies is that cruelty to animals and violence toward people tend to co-occur,

with low empathy appearing to underlie both.<sup>48</sup> Researchers have argued that this relationship operates in both directions: just as low empathy predicts harm toward both animals and people, deliberately building empathy through animal-focused programs may inhibit aggression and promote prosocial behavior toward people.<sup>49</sup> This is somewhat different from the transference argument as it is less about building warmth toward others and more about preventing harm, but it points to the same underlying connection.

**Compassion** is related to empathy but goes further. Empathy involves feeling concern for another's suffering. Compassion adds a motivation to do something about it.<sup>50</sup> Some researchers describe how affective and cognitive empathy combine and can lead to empathic concern, which some people call compassion or **motivational empathy**. Whichever term is used, the idea is the same: this deeper form of empathy motivates a person to take action to relieve the suffering of others.<sup>51</sup> This approach fits with how many zoo and aquarium practitioners think about the goal of empathy work. **Empathy is not the end goal by itself, rather it is a path toward conservation action.**

In one study, researchers developed a measure of compassion for animals and tested it with over 1,200 Canadian adults.<sup>52</sup> Women and older adults reported higher levels of compassion for animals, mirroring patterns observed in research on empathy for people. The study also revealed three key elements of animal compassion:

- (1) Feeling and thinking compassionately about animals in distress,
- (2) Taking action or intending to help alleviate their suffering, and
- (3) Using your own pain to connect with the suffering of animals.

This action orientation helps distinguish compassion from standard empathy measures, which often focus only on cognitive and affective empathy.

In another study, researchers used online survey data from 3,500 people to compare empathy and compassion toward animals across species.<sup>53</sup> Results showed that empathy and compassion decreased with evolutionary distance from humans, meaning people generally feel less of both empathy and compassion toward species that are less like us. Interestingly, compassion scores decreased more slowly than empathy scores. Compassion also appeared to be shaped more by a person's knowledge and personal views than empathy was, while empathy tracked more closely with how much a species physically resembles a human. This finding comes from a single study and should be interpreted with caution, but it suggests that compassion, and the motivation to act that it carries, may be more flexible than affective and cognitive empathy when it comes to species that are evolutionarily distant or unfamiliar.

To illustrate this finding, the study's authors described and compared responses for two species they asked about in the survey: an oak tree and a tick. The oak tree got one of the lowest empathy scores in the study but also got a surprisingly high compassion score. The researchers think this is because of the oak tree's size, long life, and what an oak tree symbolizes to people, not because the tree resembles a human. The tick shows the opposite pattern as the empathy score for a tick was about what you would expect for an animal that distant from humans, but

the compassion score dropped below the expected level, likely because people see the tick as a pest or a threat rather than simply as an unfamiliar creature.

This study suggests that compassion can rise or fall somewhat independently of empathy, based on a species' role, life story, or what that species represents to people, not just how much it resembles a human. **For animals that are less popular or very different from humans, such as reptiles, invertebrates, or amphibians, this points to a practical opportunity: stories about their role, their resilience, or their value may build more compassion, and more motivation to act on their behalf, than trying to make them seem cute or humanlike.** Empathy, by contrast, tracked more closely with resemblance to humans in this study, a dependency that is harder to shift through information or storytelling alone. This distinction matters for practice. If empathy is treated as the end goal, phylogenetic distance can look like a hard ceiling. But if empathy is understood as one route toward compassion and action, then knowledge, narrative, and symbolic meaning offer a second, more flexible route, one that may matter more for less familiar or less charismatic species. Again, this is based on a single study, and the relationship between empathy, compassion, and action needs further research. Empathy remains foundational; these findings simply suggest that compassion offers an additional pathway, especially for less familiar species.

## The Other Direction: How Empathy for People Supports Empathy for Wildlife and Conservation Action

Most of the discussion so far has focused on whether empathy for animals leads to empathy for people. Some researchers have also looked at the reverse: empathy for people as an enabler of animal-directed empathy and conservation caring. For example, researchers in one study tested the effectiveness of the Empathy Toward Animals (ETA) scale and found that people who felt more empathy toward other people also tended to feel more empathy toward animals.<sup>54</sup> The researchers recruited 800 adults online and had them complete a set of questionnaires, including the ETA scale, along with separate scales measuring empathy toward people, compassion, attitudes toward animals, and a person's connectedness to nature. Using a statistical model, the researchers found that both human-directed empathy and nature relatedness helped predict levels of empathy for animals. It is worth noting that the ETA scale, like most measures in this literature, draws primarily on familiar and companion animals rather than wildlife specifically.

This study showed a meaningful relationship between empathy for people and empathy for animals, but it did not test whether a specific activity or program could build one form of empathy from the other. However, the authors did point to two things that may be useful for practitioners. First, empathy-focused programs to support caring and conservation behaviors work best when paired with building people's knowledge about animals and the environment (a practice also identified in the ACE for Wildlife Network's [foundational research](#)<sup>55</sup>). Second, nature relatedness was a strong predictor of empathy for animals, which suggests that helping people feel connected to nature may be an important lever for building empathy toward animals. There

is a growing body of research on how zoos and aquariums can help connect people to nature<sup>56</sup> and practical implications include:

- Incorporating guided interpretation rather than unstructured viewing,<sup>57</sup>
- Adding thematic or hands-on components to standard tours,<sup>58</sup>
- Offering direct physical encounters with wildlife where possible,<sup>59</sup>
- Designing multi-day rather than single-day programming,<sup>60</sup> and
- Helping people identify and overcome barriers to spending time in nature.<sup>61</sup>

Three additional studies also looked at how empathy for people might be related to empathy for animals.

- In a study of Australian adolescents, higher empathy for people predicted not only prosocial behavior toward people but also more humane treatment of animals.<sup>62</sup> These results suggest that empathy for people can extend outward to how young people feel and treat animals.
- A large cross-national study conducted in Russia, Chile, Mexico, and other unspecified Spanish-speaking countries found that empathy for people predicted ecological behavior, and highlighted connection to nature as a driver of ecological behavior.<sup>63</sup> In other words, empathic people were more likely to feel connected to the natural world, and that connection helped drive them to take action to care for the environment.
- A study focused on empathy for wildlife drew explicitly on research on empathy for people, including the identifiable victim effect and the role of individual recognition in promoting empathy, to explain what makes people empathize with wild dolphins. The **identifiable victim effect** is the tendency for people to feel more empathy and offer more help when they see the victim (the recipient of empathy and help) as an individual rather than an anonymous group or statistic. The researchers tested whether this effect held for wild animals by asking people without expertise in dolphins to identify individual dolphins from pictures of each dolphin's dorsal fins. Researchers then measured whether the ability to recognize a specific dolphin predicted empathy for an injured dolphin and willingness to commit to conservation behaviors. It did, with the researchers suggesting individual recognition can trigger empathy for a wild animal through the same psychological mechanism already established and understood in research on empathy for people.<sup>64</sup>

Looking across the reviewed research in this section, there is evidence that **empathy for people can support empathy for wildlife through distinct pathways such as connection to nature and the ability to recognize an animal as an individual**. For practitioners, this suggests benefits to helping visitors build a broader connection to nature and to individual animals.



## A Caution: Are There Unintended Consequences of Building Empathy for Wildlife?

Most of the research reviewed in this section points in an encouraging direction: empathy for animals and empathy for people tend to reinforce each other, and programs that build one may strengthen the other. However, some practitioners have asked if building empathy for wildlife could, under some circumstances, have unintended consequences for how people relate to other people and animals. This is an area the research has not yet examined systematically, but several threads in the literature are worth talking about.

The observation that some people who show intense devotion to animal welfare appear indifferent or even hostile to human suffering has been noted by scholars for decades. It is sometimes raised as a challenge to the assumption that animal and human empathy are always positively linked.<sup>65</sup> There is limited and dated research suggesting that for some individuals strong emotional investment in animals may function more as a displacement of emotional energy from people than as an extension of it.<sup>66</sup> It seems likely these cases represent the extreme end of a spectrum rather than a general pattern, and **the weight of evidence reviewed in this section does not support the idea that caring about animals routinely comes at the expense of caring about people.** Research suggests that for most people, empathy for animals appears to generalize outward and that care for animals coexists with and may reinforce care for people.

In conservation research, a concern has been raised that attention to charismatic or flagship species can crowd out concern for less visible species or the broader ecosystem, with research suggesting this concern is real.<sup>67</sup> For example, in the United States, one study found that a species' popularity, not its official priority ranking, predicted how much federal funding it received under the Endangered Species Act.<sup>68</sup> An analysis of 2020 federal spending data found that animals such as the West Indian manatee, right whale, grizzly bear, and northern spotted owl each received tens of millions of dollars in recovery funding, while the Virginia fringed mountain snail, a species seen only once in the past 35 years, received just one hundred dollars.<sup>69</sup>

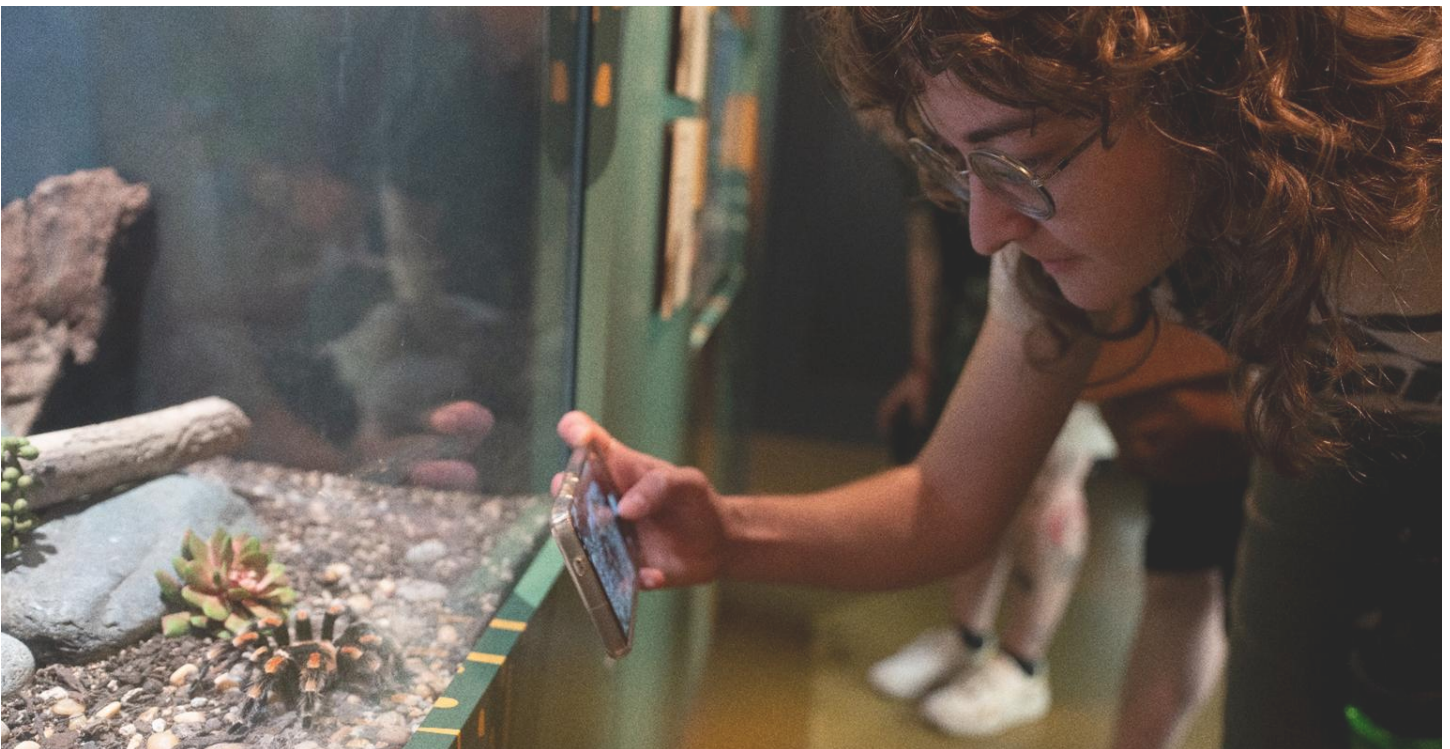
What is not clear is whether empathy plays a role in this, as there is simply not enough research in this area yet. Across studies and academic musings related to charismatic species and conservation funding, it is clear that no one is calling for a moratorium on developing empathy for wildlife. Instead, researchers thinking about this topic emphasize that empathy for wildlife can be a valuable tool if practitioners pair it with deliberate attention to less visible species and the broader ecosystem in which charismatic and flagship species live.

More empirically grounded is the concept of empathy as a limited resource. The psychologist Paul Bloom, drawing on a body of experimental work, has argued that empathy is not an infinitely expandable capacity but that it can be depleted, misdirected, and sometimes leads people toward focus on local concerns rather than broader or global concerns.<sup>70</sup> If empathy functions more like a spotlight than a floodlight, then questions about where it is directed matter. A related concern comes from the psychological literature on **moral licensing**, which is a documented

tendency for people who have done something they perceive as virtuous to feel less obligated to act virtuously in other domains.<sup>71</sup> Applied here, the question is: Do visitors who leave a zoo feeling they have done something good for conservation feel less motivated to engage with human-focused social concerns?

As far as we can tell, the idea of moral licensing has not been studied in the context of wildlife-directed empathy. And we only reviewed one study that investigated the idea of empathy as a depletable resource in a context related to wildlife.<sup>72</sup> In that study, participants completed a computer-based card-deck choice task, repeatedly choosing between a deck representing a human and a deck representing an animal (in this case, a koala). Researchers then asked participants to imagine and describe the internal experience of whichever target they chose (the person or the koala). The study was repeated a second time, but this time, participants no longer chose directly between the human and the koala. Instead, for each target separately, they chose whether to empathize with that person/koala or to stay objective and simply describe it. The results suggested that people do treat empathy for animals and empathy for people as competing when they are placed in a forced, direct tradeoff, but this competition disappeared once the tradeoff was removed.

We want to stress that even if these issues exist, they likely cause insignificant problems when it comes to developing empathy for wildlife. In other words, while thinking about empathy as a depletable resource and moral licensing in the context of wildlife can be a good thought exercise, we want to be clear that there is simply not enough research around the question: “Does building empathy for animals reduce how much people care about other people?” Ideas like moral licensing and depletable empathy are borrowed from other areas of psychology and applied here speculatively only because we have heard from some practitioners that they have wondered about unintended consequences of empathy development for wildlife. These ideas, if applicable in this context at all, likely only affect a small number of people in a small way.



## A Caveat: Building Empathy for Animals Is Not Always Neutral

We did not find evidence that building empathy for wildlife comes at a cost to empathy for people. However, several scholars note that messaging about animal welfare can be used by political groups to claim moral authority or make discrimination against minority groups seem acceptable or justified. For example, anthropologists have documented how rhetoric about cow protection is used by Hindu nationalist movements in India to justify violence against Indian Muslims, a historically marginalized group.<sup>73</sup> While building empathy for wildlife may not detract from empathy for people, it does not prevent animal-protection messaging from being used to deepen social division. When aiming to build empathy for wildlife and people, it is important to make these goals explicit and to consider the full social and political context, so that messaging meant to protect animals does not end up being used to justify harm to people.

Programs that explicitly connect concern for wildlife to concern for people, that avoid framing the two as competing, and that invite participants to reflect on the links between human and animal wellbeing are more likely to produce the broadest and most durable effects. The transfer from animal-directed empathy to human-directed empathy appears to be real, but it may need to be cultivated rather than assumed. This approach mirrors a broader pattern in conservation research: community-based conservation interventions that position community wellbeing (e.g., health, livelihoods) and wildlife protection as aligned, rather than as a tradeoff, tend to outperform those built on restriction or exclusion (e.g., strict enforcement of poaching or wildlife trade laws).<sup>74</sup> At the same time, alignment alone is not a guarantee of success.

In summary, practitioners can follow these two recommendations to help community-based conservation efforts support wildlife protection:<sup>75</sup>

- Conservation efforts need to be developed and implemented with meaningful community engagement throughout the process.
- The connection between community wellbeing and wildlife protection needs to be explicitly and continually communicated.

## The Special Challenge of Wildlife: Companion Animals versus Wild Animals

Much of the research reviewed in this section focused on empathy for companion animals, and while we believe many findings apply to wildlife contexts, developing empathy for wildlife presents a fundamentally different psychological challenge. One helpful way to understand this comes from a review of human-animal relationships. The researchers suggest that empathy toward animals does not work alone but is part of a system involving two other processes: attachment and anthropomorphism.<sup>76</sup> In this study, the researchers defined attachment and anthropomorphism in the following ways:

- **Attachment** refers to the emotional bond a person forms with a specific animal, one that leads them to seek closeness and comfort with that animal and to feel distress when separated from them.
- **Anthropomorphism** refers to the tendency to attribute human-like mental states, such as emotions, intentions, and thoughts, to an animal.

Each of the three processes (empathy, attachment, anthropomorphism) amplifies the others (see Fig. 1). Stronger attachment leads to greater empathy; anthropomorphic thinking supports perspective-taking and empathic response; and empathy motivates caregiving behaviors that deepen attachment. In relationships with companion animals, all three processes typically work together.

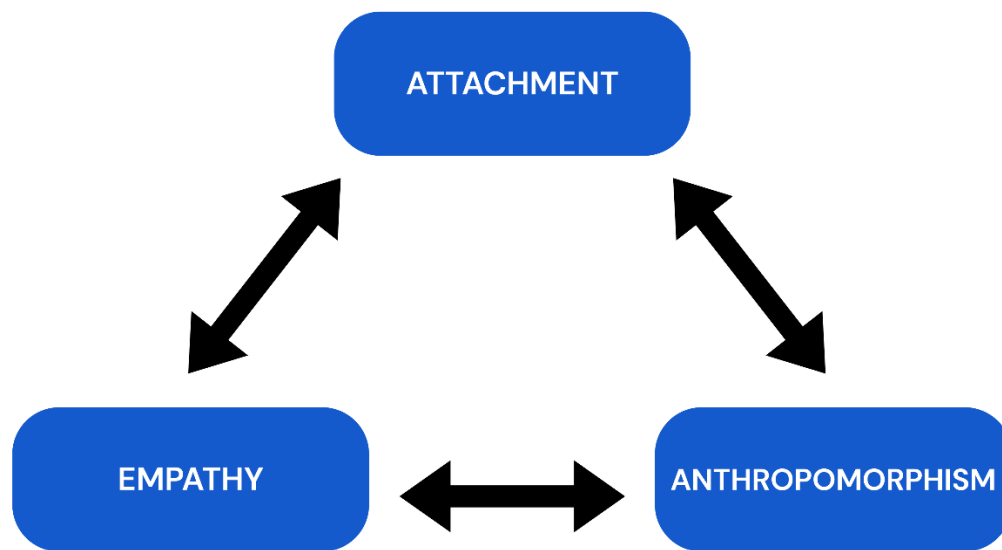


*Figure 1. In companion-animal relationships, all three processes typically reinforce one another.*

In wildlife encounters, however, it can be more difficult to activate these processes. People generally do not form close attachment bonds with wild animals the way they do with pets since the repeated, intimate, reciprocal contact that generates attachment is rarely available in wildlife contexts (nor should it be). Opportunities for the kind of anthropomorphic thinking that develops through sustained interaction are also more limited, both because of reduced familiarity and because wild animals may lack features and domestic behavioral cues that most readily trigger anthropomorphic engagement. This means that empathy for wildlife must rely more heavily on the generalized empathic component (i.e., the shared root of both human and animal empathy<sup>77</sup>) without the amplifying support of attachment and anthropomorphism that companion animal relationships naturally provide.

The **phylogenetic distance finding** (the tendency to feel less empathy for animals further from humans on the evolutionary tree) compounds this challenge. Across multiple studies, empathy decreases with evolutionary distance from humans.<sup>78</sup> One study of children (ages 5–12) found

that this effect grew stronger as children got older, meaning the empathy gap between familiar and unfamiliar species widens over the course of childhood rather than narrowing.<sup>79</sup> The type of animal also matters in ways that go beyond phylogeny. Research using a scale that distinguished between companion animals, pest animals, and livestock found that the link between human-directed empathy and pro-animal attitudes was strongest for companion animals and considerably weaker for the other categories.<sup>80</sup> The second report in this review series, [\*Comparing Empathy for Wildlife across the Animal Kingdom\*](#), tackled this issue of differing empathy levels for different groups of animals in detail and suggested ways to mitigate these differences.<sup>81</sup>

While all of this may seem to suggest that building empathy for wildlife is going to be much harder than building empathy for companion animals, researchers and practitioners are finding ways to overcome these challenges. For example, using critical anthropomorphism in wildlife encounters is one way to partially close this gap. **Critical anthropomorphism** deliberately maintains scientific accuracy while still using relatable, human terms to describe animal behaviors. This technique helps visitors connect with an animal without misrepresenting their biology.<sup>82</sup> Research suggests this kind of framing can increase connectedness and empathy toward the animal being described.<sup>83</sup> Examples of critical anthropomorphism in practice are:

- Instead of saying that warthogs enter mud wallows to maintain internal temperatures and skin health, a practitioner might say, “Warthogs like taking mud baths because they enjoy cooling off just like people enjoy pool parties on hot summer days. An added bonus is mud acts as a natural sunscreen!”
- Instead of describing gibbon movement as brachiation, a keeper might say, “Gibbons swing from branch to branch the way kids do on the monkey bars, but unlike humans, they retain that skill their whole life.”

Researchers have looked at anthropomorphism in children’s media (e.g., books, television, and film) and how it impacts things like empathy, attitudes toward animals, pro-environmental attitudes, and ecological knowledge.<sup>84</sup> In general, this research contains mixed findings, with some work linking anthropomorphized animal characters to pro-environmental attitudes and others cautioning that heavily anthropomorphized, scientifically inaccurate portrayals can distort children’s understanding of real animal behavior.<sup>85</sup> In this strand of research, we saw few mentions of the idea of critical anthropomorphism. Researchers tended to discuss anthropomorphism as a broad and largely undifferentiated narrative technique. More clearly defining what we mean by anthropomorphism and testing the use of critical anthropomorphism as a practical tool represent areas of future research that should be funded and explored.



## Part 3: Same or Different? How Empathy for Animals and People Develop

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The evidence reviewed in Part 2 makes a strong case that empathy for animals and empathy for people are meaningfully connected. But connected is not the same as identical. Understanding what the two have in common, where they diverge, and how each develops is not just an academic question; it has direct, real-world implications for practitioners who want to cultivate both. This section explores the shared foundations and distinct pathways of empathy for animals and empathy for people.

### A Surprising Starting Point: Empathy for Animals May Be Stronger Than We Assume

Before exploring how the two types of empathy are similar and different, it is worth pausing on something the research reveals about empathy for animals itself. Most people assume that empathy for other people is stronger, and that empathy for animals is somehow less or secondary. Preliminary research suggests this may not always be true. In a series of experiments, participants read scenarios describing a human or animal victim in need of medical attention and rated how much empathy they felt. Women expressed significantly more empathy for a dog or cat than for an adult human. Perhaps more striking, both men and women expressed equivalent levels of empathy for a puppy and for a baby or young child, even though these are two targets we might expect to sit at very different points on a moral hierarchy.<sup>86</sup> One explanation researchers offer is that animals, like young children, tend to be perceived as having no responsibility for their suffering. Whatever the mechanism, the finding matters for zoo and aquarium practitioners: **the empathy visitors feel for animals is not a pale substitute for human empathy. It is a genuine, powerful emotional response and one that may be a meaningful starting point for broader empathic development.**

### What Empathy for Animals and Empathy for People Have in Common

As discussed in Part 2, a recently validated tool for measuring animal-directed empathy was adapted from a widely used measure of human-directed empathy. Scores on this adapted scale aligned with human-directed empathy scores,<sup>87</sup> with the researchers who tested the scale noting that animal-directed empathy is a related but still distinct construct. Also presented in Part 2, the neuroscience evidence reinforces this conclusion. Brain imaging studies have found that perceiving suffering in animals activates similar areas of the brain as when people perceive suffering in other people.<sup>88</sup> And, a review has proposed that oxytocin may serve as a common mechanism, with positive interactions with animals triggering the same neurochemical pathways that support trust, prosocial behavior, and empathy toward people.<sup>89</sup>

Gender effects are also strikingly consistent across both empathy for people and empathy for animals. Women score higher than men on both animal-directed empathy and human-directed empathy across nearly all studies reviewed, regardless of population, culture, or measurement

instrument.<sup>90</sup> This consistency itself suggests shared foundations because if the two were entirely independent, we would not expect the same demographic variable to predict both so reliably. Both empathy for people and empathy for animals also tend to increase toward adulthood, with important nuances discussed below.

## Where Empathy for Animals and Empathy for People Diverge

Despite their shared foundations, empathy for animals and empathy for people are also likely influenced by different factors and develop along somewhat different trajectories. Understanding these differences matters for practitioners who want to cultivate both. The most striking evidence of divergence comes from Paul's foundational 2000 study, which found that pet ownership (both current and in childhood) predicted empathy for animals but not empathy for people. Having children in the home, on the other hand, predicted empathy for people but not empathy for animals.<sup>91</sup> These findings suggest that while both types of empathy draw on a common emotional foundation, each is also shaped by domain-specific experiences. As would be expected, relationships with animals develop and amplify animal-directed empathy, while relationships with people develop and amplify human-directed empathy. In a study of Spanish adults, emotional intelligence predicted empathy for people but predicted empathy for animals only among pet owners. This finding again suggests differences in development of empathy for people and empathy for animals; based on this evidence, the pathway from emotional intelligence to empathy for animals requires direct experience with animals to operate.<sup>92</sup> This divergence was also seen in a study of Italian veterinarians, where length of professional service had a significant effect on empathy for people (e.g., more experienced vets scored higher) but showed no effect on empathy for animals, which remained stable across career stages.<sup>93</sup>

The developmental timelines of the two types of empathy (i.e., how they develop across lifespan) also appear to differ slightly. In a study of young children (ages 3–5), children's empathy toward their peers correlated with their empathy toward pets, and children with strong pet bonds showed higher empathy toward other children.<sup>94</sup> Over time, however, the pathways appear to diverge. A study following participants from pre-adolescence through adulthood found that while both empathy for animals and empathy for people generally increased toward adulthood, they did not follow identical paths. Empathy for animals increased more linearly, while empathy for people showed a different developmental pattern.<sup>95</sup> A study of children aged five to twelve found that the effect of phylogenetic distance on empathy for animals actually strengthened with age. Although this finding needs more study, this could serve as further evidence that the two types of empathy diverge rather than converge as children develop.<sup>96</sup>

Individual differences beyond these factors may also shape how empathy for animals and empathy for people diverge. For example, emerging evidence suggests that neurodivergence, particularly autism, may be associated with differences in empathy experienced for animals versus empathy experienced for people, though autism represents a wide spectrum and these patterns likely will not hold true for every autistic person.

One study comparing autistic and non-autistic adults found that self-reported empathic ability differed between the two groups for human targets, but not for other species, indicating that

empathy for animals may be relatively preserved in autism even where empathy for people, as conventionally measured, is reported to differ.<sup>97</sup> In an eye-tracking study, autistic children as a group showed reduced visual attention to human faces but preserved or heightened attention to animal faces and eyes.<sup>98</sup> A related study found that autistic adolescents, on average, recognized emotions more accurately in animal faces than in human faces.<sup>99</sup> In a qualitative study, some autistic adults described animal interaction as free of the confusing verbal and facial cues that can make human communication difficult to understand, and as not requiring the social masking that many autistic people feel compelled to perform around other people.<sup>100</sup>

## The Special Role of Empathic Concern and Joy

Across multiple studies by the same research team working with Australian community samples, an interesting finding emerged: it is not empathy in general that links most strongly to pro-animal attitudes, but one specific dimension of it, namely, empathic concern.<sup>101</sup> **Empathic concern** refers to the tendency to feel compassion and concern for others who are struggling or suffering. In this group of Australian studies, empathic concern was the dimension of human-directed empathy that most consistently and strongly predicted pro-animal welfare attitudes across the three different groups of animals under study—what the researchers called the pet, pest, and profit animal categories.

Empathic concern is activated by seeing suffering or misfortune. Zoo and aquarium experiences, however, center around seeing animals that are healthy and safe. A second, less studied pathway may be more relevant to what visitors encounter: **empathic joy**, the tendency to share in another's joy or happiness.<sup>102</sup> One recent study, for example, examined if people could experience empathic joy for a tree and found that participants who imagined themselves as the tree reported higher empathic joy than those who viewed the tree without imagining its perspective.<sup>103</sup> This same research draws on prior findings that **empathic joy is more likely than empathic concern to motivate people to help sustain or extend another's positive state, rather than to relieve suffering.**<sup>104</sup>

What does this mean for practitioners? It suggests that programs aiming to strengthen both empathy for animals and empathy for people may be most effective when they explicitly cultivate the emotional warmth and concern dimensions of empathy, rather than focusing primarily on facts alone.

## Pet Attachment and What Really Matters

Throughout our review, a consistent finding kept coming up: pet ownership influences empathy for animals, but it is not just whether someone owns a pet that matters. The quality and depth of the relationship they have with that animal determines the impact, as shown in several studies:

- Ascione's landmark humane education study first surfaced this distinction that simple pet ownership is not a significant predictor of outcomes. When researchers followed up with the same children a year later, they found that children with stronger pet bonds showed

more durable effects from the humane education program than those with weaker bonds or no pets.<sup>105</sup>

- In a study of Croatian school children, those with above-average pet attachment scored significantly higher on both empathy and prosocial orientation than non-owners and low-attachment pet owners, who did not differ significantly from each other.<sup>106</sup>
- In a survey of Filipino young adults, stronger pet attachment predicted greater empathy for animals, which in turn predicted more prosocial attitudes toward people.<sup>107</sup>
- Among Chinese adults, it was the frequency and quality of contact with companion animals, not simply cohabiting with one, that predicted empathy outcomes for both animals and people.<sup>108</sup>
- Results from a study of third-grade students in the United States suggested it is the type of interaction with pets that matters. The researchers referred to activities such as talking to a pet, seeking comfort from them, and treating them as an emotional equal as companionship-style interactions. It was these types of interactions that predicted higher empathy for people and downstream prosocial behavior toward people. Basic caretaking behaviors such as feeding and grooming were not associated with these outcomes.<sup>109</sup>

Looking across these findings, it appears that **what cultivates empathy is not the responsibility of caring for an animal but the emotional intimacy of relating to one as a companion.**

Research on childhood pet attachment and its longer-term effects adds another dimension. Adults who had stronger emotional attachments to childhood pets showed greater empathy for animals as adults, and this animal-directed empathy in turn mediated later dietary choices and attitudes toward animals broadly.<sup>110</sup> This research suggests that the effects of early pet attachment can be far-reaching and long-lasting. The same researchers note that generalization from empathy toward a specific pet to empathy toward all animals is not automatic. It requires certain cognitive capacities and supporting conditions, including the ability to recognize that the pet and other animals share common characteristics and deserve similar moral consideration, which is something that practitioners can highlight. One important caveat applies across all this research: the direction of causation is uncertain. People with higher empathy may be more likely to form strong bonds with animals in the first place, rather than strong bonds with animals leading to higher empathy.<sup>111</sup>



## Part 4: Living with Wildlife: How Experience Shapes Empathy

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As we have seen in previous sections, experience with animals (so far mainly in the form of companion animals) has been shown to impact empathy for animals and empathy for people.<sup>112</sup> In the wildlife conservation research, there is a strand of work focused on interactions with wildlife and how this shapes various human responses (emotional, cognitive, and behavioral). In this section, we dig briefly into that research and how it links to empathy for wildlife and empathy for people. One caution shapes how to read this section. Most coexistence research measures empathy as a driver of tolerance toward wildlife, not as something that produces empathy for people or looks backward at how wildlife interactions shape empathy for wildlife.

The strongest evidence that empathy matters for people who live alongside wildlife comes from a set of studies using the Wildlife Tolerance Model, developed by Ruth Kansky and colleagues. **Tolerance** here means the willingness of a person to absorb the potential or actual costs of living with wildlife.<sup>113</sup> Across this work, empathy for a species, defined as the capacity to feel compassion when imagining a wild animal in distress, consistently emerges as a predictor of tolerance. In communities around wildlife conservation areas in Namibia, empathy had the strongest effect on tolerance of any variable studied, and it held across all five problem species examined, including elephants, lions, and hyenas.<sup>114</sup> A parallel study in Zambia found the same pattern, with empathy a significant driver of tolerance for all five species.<sup>115</sup> What makes these findings notable is the setting. These are not survey respondents imagining wildlife from a distance but farmers who lose livestock and crops to the animals in question. Empathy survives as a driver of tolerance even where the costs of coexistence are real and immediate. Empathy had rarely been included in wildlife tolerance surveys before this work, in part because researchers assumed that material costs and benefits would dominate.<sup>116</sup> **The finding that empathy matters as much as or more than monetary considerations is one of the more important contributions of this literature.**

A second strand of research shows that direct experience with wildlife shapes the emotional responses that underlie empathy, sometimes strengthening them and sometimes lowering the fear and disgust that block them. People who live in close contact with wild animals tend to be less fearful of them than people raised away from nature, because familiarity builds knowledge of animal behavior.<sup>117</sup> Recreational activities that bring people into contact with wildlife, such as hiking, birding, and fishing, can reduce fear and even help overcome phobias through first-hand experience.<sup>118</sup> Structured experience, not only incidental contact, can shift how people feel about a species even in difficult circumstances. Researchers evaluated an experiential education program in a Canadian national park where a coyote had killed a person. The program, built on the experiential learning cycle, combined direct activities with guided reflection. After taking part, participants held more positive attitudes toward coyotes, felt less fear, and reported a greater sense of control over encounters.<sup>119</sup> Other programs that let people touch animals such as amphibians and invertebrates have been shown to reduce disgust and anxiety toward them.<sup>120</sup> This emotional groundwork matters because fear works against compassion. In a study of Slovak adults who watched predator-prey encounters, fear of the animals shown was negatively

correlated with compassion for both predators and prey, and compassion did not reliably translate into willingness to protect the animals.<sup>121</sup> Experience does not always soften feelings, however. A worldwide review of attitudes toward wolves found that people living in areas where wolves have always been present held more negative attitudes than people in areas where wolves were absent or had recently returned, and that those most directly affected, such as farmers and hunters, had the most negative attitudes.<sup>122</sup>

Our review of research surfaced a clear example of empathy for people extending to wildlife in a lived setting. In a study of cattle-farming communities in Botswana, the authors describe *Botho*, a relational philosophy often summarized as “I am because we are,” which holds that a person becomes fully human through respectful, interdependent relationships with others. In these communities, people relate to wildlife in part through the people responsible for wildlife management, such as government wildlife officers and conservation staff. When those intermediaries treat farmers with *Botho*, by greeting them, listening, and showing respect, farmers develop empathy for them, and that empathy sometimes extends to the animals managed by these officials. One farmer explained that he would not kill a problem animal because the animals’ guardians were people he knew and did not want to burden.<sup>123</sup> This is a rare documented case of empathy between people carrying over into tolerance for wildlife, and it fits our broader argument that the two forms of empathy are linked.

The same coexistence research on the Wildlife Tolerance Model shows that empathy can be deliberately cultivated in these lived and natural settings, with effects that reach both people and wildlife. Programs in Namibia that trained community members in **Nonviolent Communication**, an approach centered on recognizing shared needs, produced reported gains in empathy for people and empathy for wildlife.<sup>124</sup> Participants described changes that went well beyond attitude. In one account, a man who had previously killed crop-raiding baboons described coming to see them as fellow beings trying to meet their needs, and helping a group of baboons stranded without water rather than harming them.<sup>125</sup> These programs echo the humane education findings from Parts 2 and 3, now in an adult, real-world coexistence context.

## Empathy for People is Essential for Coexistence

While this review focuses on research exploring the specific connection between building empathy for wildlife and empathy for people, research outside the scope of this review highlights the role of building empathy for people in addressing a range of conservation and sustainability challenges. The rise of conservation social sciences demonstrates that understanding local communities’ needs, values, and trust in conservation actors improves the effectiveness of conservation interventions.<sup>126</sup> Further, concepts like One Health and One Welfare emphasize the interconnectedness of positive outcomes in the lives of wildlife, domestic animals, and human communities.<sup>127</sup> Practitioners should remember that building empathy for people, especially those directly involved in human-wildlife conflict, is a worthy outcome in line with the conservation missions of most zoos and aquariums, even if this empathy for people is not directly connected to empathy for wildlife.

## Part 5: Implications for Practice

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For the most part, **the research reviewed in this report was not designed with zoo and aquarium practitioners in mind**. It comes from developmental psychology, criminology, neuroscience, conservation biology, and other fields, and much of it concerns companion animals rather than wildlife. Still, taken as a whole, the evidence points toward a set of principles that can inform how practitioners design programs, frame messages, and structure experiences to foster empathy for both wildlife and people. We organize these implications around seven themes. These are not new ideas for many zoo and aquarium practitioners, but what the research adds is empirical grounding connecting these techniques to broader principles of how empathy works.

### 1. Acknowledge empathy for wildlife and empathy for people are not in competition

**Perhaps the single most important takeaway for practitioners is that fostering empathy for wildlife and fostering empathy for people are not opposing goals that draw on a fixed and limited pool of caring.** The weight of the evidence suggests the opposite: the two forms of empathy draw on shared emotional and neural resources, develop through overlapping processes, and are more likely to reinforce one another than to undermine each other. In practice, this means:

- Practitioners do not need to choose between conservation-focused and humanitarian-focused framings of their work. A program designed to build empathy for wildlife can honestly be presented as also contributing to a more caring orientation toward people.
- The relationship runs in both directions. Helping visitors connect with one another, with staff, and with the human communities involved in conservation may create fertile ground for empathy toward wildlife to grow.
- Framings that imply a tradeoff should be avoided. When people encounter situations that pit empathy for animals against empathy for people, they tend to pull back from animal-directed empathy and prioritize people. Positioning the two as aligned and mutually reinforcing produces very different outcomes than presenting them, even unintentionally, as a zero-sum choice.
  - One strategy to do this is to talk about conservation approaches such as community-based conservation<sup>128</sup> and community-based natural resource management.<sup>129</sup>
  - Frameworks such as One Health and One Welfare offer practitioners another way to present conservation and human caring as a single, aligned goal rather than a tradeoff.<sup>130</sup>

### 2. Note that quality of connection matters more than quantity of exposure

A consistent finding across the research is that simply being around animals does little. What matters is the quality and depth of the relationship. Mere pet ownership did not reliably predict

empathy outcomes across studies; the strength of attachment to the animal did. It was emotionally intimate, companionship-style interactions, rather than basic caretaking, that predicted higher empathy and downstream prosocial behavior. For practitioners, this suggests:

- Brief or purely observational encounters with animals are unlikely to be sufficient on their own.
- Experiences should invite genuine emotional connection, framing animals as individuals with their own experiences and personalities rather than as specimens or representatives of a species.
- During programs, practitioners can bring up companion animals and encourage kids to build deeper relationships with their own pets, such as talking to them, seeking comfort in them, spending time with them, bonding with them, and caring for them.

### 3. Aim for felt empathy, not just knowledge or positive attitudes

Several studies found that empathy for animals functions as the connecting mechanism through which animal-related experiences and attitudes translate into prosocial outcomes toward people. **Pro-animal attitudes alone, or factual knowledge about animals, did not reliably produce these broader effects unless they first generated genuine, felt empathy.** This points to several considerations for program design:

- Knowledge and reported attitudes, though easier to measure, are not sufficient on their own. The operative ingredient is the affective response, the emotional warmth and concern for animals as individuals.
- Programs that stop at conveying facts or cultivating favorable attitudes, without engaging visitors emotionally, may miss the mechanism that actually drives generalization to broader prosocial and conservation behavior.
- The research on empathic concern and empathic joy reinforces this point: **it was specifically the emotional dimension of empathy, rather than cognitive understanding, that most consistently linked to pro-animal attitudes.**
- Since visitor experiences at zoos are more likely to evoke joy than distress, empathic joy may be the more actionable and relevant pathway to design for, even as empathic concern remains an important predictor in the broader research base.

### 4. Help visitors see animals as individuals

One of the more hopeful and directly actionable findings comes from research on what promotes empathy for wildlife specifically. **The ability to recognize an animal as a distinct individual, rather than as an interchangeable member of an undifferentiated group, predicted both empathy for that animal and willingness to commit to conservation behaviors.** This mirrors a well-established mechanism in the human-directed empathy literature. Practical applications include:

- Helping visitors come to know individual animals by name, including their personalities, histories, and the distinguishing marks by which they can be recognized.
- Using narrative to tell the story of a specific animal's experience, such as an injury survived or a relationship formed, which elicits stronger empathic and prosocial responses than statistics or general species information.

- Pairing individual narratives with images of the specific animal, a combination that produced the largest conservation donations in the dolphin study reviewed.

## 5. Recognize that empathy for wildlife is harder to build than for companion animals

Practitioners should be clear about the distinctive challenge they face. Much of the research showing strong links between empathy for animals and for humans concerns companion animals, and the mechanisms that make empathy for companion animals so robust are largely unavailable in typical wildlife encounters. Despite these challenges, there are techniques zoos and aquariums can use to address them. Specifically:

- Zoos and aquariums may be among the few contexts in which all three supporting mechanisms, empathy, attachment, and anthropomorphism, can be activated for wildlife. Repeated encounters with named individual animals can begin to build something resembling the familiarity and attachment that ordinarily develop only with companion animals.
- Using critical anthropomorphism can help visitors understand animals as beings with inner lives without distorting their understanding of species-appropriate needs and behaviors.
- Phylogenetic distance compounds the challenge, with empathy tending to decline for species less similar to humans. This issue is explored in depth in the [second report](#) in this series, which offers research-informed suggestions on how to mitigate this disparity.

## 6. Use experience thoughtfully, and attend to fear and disgust

Direct experience with wild animals can strengthen the emotional responses that underlie empathy, and it can also lower fear and disgust associated with certain animals. This matters because fear works against compassion. Key considerations include:

- For species that commonly evoke fear or disgust, including many reptiles, amphibians, invertebrates, and predators, practitioners may need to address those emotional barriers directly before empathy can take hold.
- Thoughtfully structured experiences paired with reflection appear more effective than incidental exposure. Experience does not soften feelings automatically, and the cultural frame a visitor brings shapes whether and how it does, which is a reminder that experiences should be designed and facilitated rather than simply offered.
- Avoid dwelling on or amplifying what visitors already find gross or scary. **Naming the reaction briefly is useful, but the emphasis should shift quickly to dispelling misconceptions and highlighting what makes the animal approachable or fascinating, rather than lingering on the qualities that triggered a negative reaction in the first place.**

## 7. Connect the threads explicitly rather than assuming transfer

A theme found throughout the reviewed evidence is that the transfer of empathy from one domain to another is real but not automatic. It appears to need cultivation rather than making an assumption it will happen naturally. This finding argues against leaving the connection implicit and hoping it forms on its own. Practitioners can:

- Draw the links out loud, helping visitors notice that the compassion they feel for an animal is the same capacity they can extend to other people.
- Frame wildlife conservation as intertwined with the wellbeing of human communities rather than as separate from it.
- Invite participants to reflect on the connections between human and animal wellbeing, which may be what turns a moving encounter into a more lasting and generalized empathic orientation.



## Part 6: Summary and Next Steps

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The implications in Part 5 and throughout come with an honest caveat that runs through the whole report. Most of the underlying research is correlational, much of it concerns children and companion animals, and very little of it was conducted in zoos or aquariums.

As such, practitioners should treat the information presented here as well-grounded starting points rather than established certainties. What the research offers with reasonable confidence is direction:

- Empathy for wildlife and empathy for people are linked.
- That link can be strengthened.
- The techniques most likely to strengthen it, including individual connection, emotional engagement, narrative, thoughtful experience, and explicit framing, are largely within practitioners' reach.

All of this means we clearly need more research on the connection between empathy for people and empathy for wildlife, and particularly research that looks at this connection in the context of zoos and aquariums!

### Areas for Future Research

- Test whether the connection between empathy for wildlife and empathy for people holds up among actual zoo and aquarium visitors, rather than relying on findings from classrooms, labs, and surveys of the general public.
- Track whether empathy gains from a single visit persist over time or require repeated exposure to sustain.
- Study empathy for wildlife specifically, rather than for companion animals, and particularly for species that are less familiar or less immediately appealing to visitors.
- Investigate whether building empathy for wildlife ever comes at the expense of empathy for people, since this remains a largely untested concern in zoos and aquariums.
- Explore empathic joy as a pathway to conservation caring, given that most zoo and aquarium encounters showcase animals that are thriving rather than suffering.
- Continue work on developing shared, validated measures of wildlife empathy specific to zoo and aquarium settings, to make comparison across institutions and programs possible.
- Examine whether animal-focused narratives can shift human attitudes toward stigmatized groups of people, extending findings from the disability research reviewed in this report.

## Appendix A: Correlational Peer-Reviewed Studies of the Connection between Empathy for People and Empathy for Animals

| Study                   | Country                   | Sample                                  | Sample Size | Setting   | Scales Used                                                                                              | Type of Animals in Measures Used                                  | Main Findings Relevant to Association between Empathy for People and Empathy for Animals                                                                                                                                                                                     |
|-------------------------|---------------------------|-----------------------------------------|-------------|-----------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paul (2000)             | United Kingdom (Scotland) | Scottish adults                         | 497         | Community | Animal Empathy Scale (AES), Mehrabian and Epstein Questionnaire for the Measurement of Emotional Empathy | Pets and familiar animals                                         | Found modest correlation between empathy for people and empathy for animals. Empathy for animals was predicted by current and childhood pet ownership, while empathy for people was predicted by having a child at home.                                                     |
| Khoury & Vergara (2024) | Canada                    | Canadian adults                         | 1,266       | Online    | Compassion Questionnaire for Animals (CQA), Empathy Toward Animals (ETA), Nature Relatedness Scale (NRS) | Generic "animal" not restricted to a type (e.g., mammals or pets) | Compassion for animals was moderately associated with compassion and empathy for people. Women and older individuals reported higher compassion for animals.                                                                                                                 |
| Gu et al. (2024)        | China                     | Chinese adults                          | 669         | Online    | Animal Empathy Scale (AES), Basic Empathy Scale (BES), Animal Attitude Scale (AAS)                       | Pets and familiar animals                                         | Empathy for animals fully mediated the relationship between attitudes toward animals and empathy for people. Women and younger participants showed greater empathy for animals; greater contact with companion animals predicted higher empathy for both animals and humans. |
| Gaspar & Esteves (2022) | Portugal                  | Portuguese pre-teens, teens, and adults | 617         | Schools   | Interpersonal Reactivity Index (IRI), Animal Empathy Scale (AES)                                         | Pets and familiar animals                                         | Empathy for animals and most human empathy dimensions increased from adolescence to adulthood, with females scoring higher throughout. Found modest correlation between empathy for people and empathy for animals.                                                          |

|                             |             |                                 |     |                    |                                                                                                                       |                           |                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|-------------|---------------------------------|-----|--------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Faner et al. (2024)         | Philippines | Filipino adult pet owners       | 343 | Community          | Animal Empathy Scale (AES), Contemporary Companion Animal Bonding Scale (CCABS), Prosocialness Scale for Adults (PSA) | Pets and familiar animals | Empathy for animals partially mediated the relationship between pet attachment and prosocial attitude toward people. Pet attachment positively predicted empathy for animals, which positively predicted prosocial attitude toward people.                                                                                                                                                                    |
| Calderón-Amor et al. (2017) | Chile       | Veterinary medical students     | 452 | Veterinary schools | Interpersonal Reactivity Index (IRI), Animal Empathy Scale (AES)                                                      | Pets and familiar animals | Found weak correlation between empathy for people and empathy for animals. Women scored higher on empathy for animals, which declined from first to final year of veterinary training. Empathy for animals was higher among vegetarian/vegan students and among those interested in small/large-animal medicine and conservation medicine compared to animal production.                                      |
| Gómez-Leal et al. (2021)    | Spain       | Adults (most likely from Spain) | 471 | Online             | Interpersonal Reactivity Index (IRI), Animal Empathy Scale (AES), Trait Meta-Mood Scale (TMMS)                        | Pets and familiar animals | Found modest correlation between empathy for people and empathy for animals, with human empathic concern as the strongest predictor of empathy for animals. Emotional intelligence was positively related to empathy for people, but its relationship with empathy for animals depended on pet ownership, being significant only among pet owners. Women and pet owners scored higher on empathy for animals. |

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