

HUMAN-ANIMAL INTERACTIONS CAS Podcast

NARRATOR AND EDITOR RICHARD GAY: 30 Brave Minutes is a podcast of the College of Arts and Sciences at the University of North Carolina at Pembroke. In 30 Brave Minutes we'll give you something interesting to think about. Joining the Dean of the College of Arts and Sciences Jeff Frederick are faculty from the Department of Psychology. With him are Dr. Kelly Charlton and Dr. Rachel Morrison. The topic for today is the interaction and connection between humans and animals. Get ready for 30 Brave Minutes.

FREDERICK: Admit it, you're crazy about animals. You love your dogs and cats. You probably also stop on Facebook to watch videos of goats in trees or a lioness caring for her pride of cubs, born blind and needing literally to learn everything just to survive. And the numbers bear out that Americans love animals. 60% of Americans have a pet or pets. 44% of Americans own a dog and 29% own a cat. Although more families have dogs than cats, the number of cats is greater given that it's more likely for a person or family to have multiple cats than to have multiple dogs. Among all pet owners 73% own a dog and 49% own a cat. Pet ownership among the American public breaks down this way: 27% own a dog but not a cat, 12% own a cat but not a dog, 17% own both, 3% own pets other than cats or dogs, and 40% do not want any part of any of them.

Doubtless, whether our animals fulfill service roles, are working animals, emotional support animals, or just fill our lives through their constant companionship, they become family. Research indicates the bond between humans and animals provides great value to both parties, reduced anxiety, improved physical and mental health, and a sense of shared responsibility. Research by McCune et al in the journal *Animal Frontiers* identifies that "in the United States an estimated 14% of people over the age of 65 share their lives with pets and studies have found that older adults with dogs tend to be more physically active than those without and retain their physical activity for longer duration. In 2013, the American Heart Association issued a scientific statement concluding that "pet ownership, particularly dog ownership, is probably associated with decreased risk of cardiovascular disease, and that it may have some causal role in reducing this risk." It's not as simple as 'get a dog and get in shape,' but the benefits are real. Of course all these numbers about pet ownership, positive benefits, and the joy of human-animal bonds fluctuate a bit from year to year, but they echo an important point. Animals are important to our identity, living arrangements, and daily life, as well. It should be noted that sometimes this doesn't work out just perfectly. Some animals and some humans don't fit all that well together, especially if a person without much home time tries to socialize a pet that needs more substantial interaction. Animals, like humans, can be stressed and that is a challenge for the animal and for the person, and on some matters of the human animal connection, more research needs to be completed. Sanders et al in a 2017 study noted that "mental health benefits of interacting with animals outside the therapeutic environment have been studied less. In part because of difficulties of carrying out methodologically rigorous research outside the controlled environment of therapy. In other words, we know a good bit about human animal relationships, but there is much left to be explored. Like, what about non pets? What are we to make of the connection between humans and other animals within or outside of shared spaces? Here to discuss all things human and animal are two psychologists with professional and personal experience. Joining me to talk about the interaction and connection between humans and animals are Dr. Kelly Charlton and Dr. Rachel Morrison. Welcome.

CHARLTON AND MORRISON: Hello.

FREDERICK: How do animals connect to other animals? How do animals connect to humans? What are the basic assumptions that we have about each other?

MORRISON: So that's a great question and depending on the species of animal they're going to connect with each other differently. So, I can talk best about social animals because, of course, we humans are social and I've studied other social animals like dolphins. But one thing that we do see is that animals will bond with siblings, they'll bond with the mother. The mother-offspring bond is a close bond. They will bond with mates. We know in some species they form lifelong friendships, or coalitions, we call them. We see that with dolphins. We see that with chimpanzees. One of the things that we know that is facilitating this bond is the release of oxytocin, which is a hormone that a lot of animals release, mammals in particular. So we humans release that. Some people call it the caudal chemical, right? So, it's this oxytocin that allows that bond formation and so we know it's being released when animals are bonding with each other.

FREDERICK: It's the "I'm so happy to see you..."

MORRISON: Yes, exactly. It makes us all feel really good. And then, when it comes to bonding with humans, it's a little bit harder to answer that question because we don't really know what the animals are necessarily thinking, but we do know that both dogs and humans are releasing oxytocin when they are interacting with each other as well. So part of what facilitates nonhuman animal bonds towards humans is also the release of the same chemical. So, just stroking your dog, for example.

FREDERICK: So we sort of have this bond that we establish. It releases this hormone almost involuntarily because we're so drawn to each other?

MORRISON: Yeah. Well, I don't know if I would say... it's hard to say that we're drawn to each other. What is it that is drawing the nonhuman animal to the human is a good question. I think a lot of it is learning-based, right? So basic learning theories would tell us that, hey, if there's a positive relationship or a positive outcome then I want to approach that individual, right? So, animals, of course, if they have a positive interaction with humans based off of prior experience, they're going to want to approach that individual.

FREDERICK: Kelly, you understand this both from the behavioral standpoint, but also as a mother of more than one animal.

CHARLTON: Yes of a pack, currently, of seven dogs. When Dr. Morrison was talking about oxytocin, it's also the human bonding hormone. Humans have oxytocin released in their system when they are bonding with other humans or their children. And so, she mentioned stroking, that when you're stroking a dog, you get an oxytocin boost in both the dog and the human, but also eye contacting-gazing. When you are gazing at a dog or a domestic dog, and they are gazing back at you, both human and dog are releasing oxytocin. And so I always like to think when my dogs are staring at me, they're hugging me with their eyes. I think I read that or saw that

description somewhere and it was that perfect sort of expression of what we would anthropomorphize as affection, but it is the same kind of bond that humans have with each other.

FREDERICK: And that eye contact and that wagging tail and that excitability factor... everybody is just in that moment. It just cements all of this. It's so exciting to come home at the end of the day and your dog is so thrilled to greet you. Like, where have you been? I didn't know if you were coming back and you're here. It's so exciting.

MORRISON: Yeah. There's so many anecdotal stories of animals that have separation anxiety when their owners leave or animals even that refuse to eat when their owner dies. And, you know, it's hard to not assume that that is a subtype of grief, right? That's what we would say: this animal is grieving the loss of their owner. Even though we can't scientifically know for sure what is going on inside that dog's head, we know that, you know, a member of that animal's social group is gone and that bond has been broken. So, that does affect them in a similar way that it would affect us.

FREDERICK: And our perception as humans of what we think the animals are thinking becomes then our reality, whether it's the animal's reality or not.

MORRISON: Exactly. So that's, I think, what makes us research so hard, is that as humans we try to, I guess, use our perspective and reality and place that on the animal. This whole idea of anthropomorphism, right, is you know, is that dog happy? Is that dog sad? And there's nothing wrong with doing that. I think it helps people, actually, form better connections with their animals to try to understand them more and the science does show that animals do have basic emotion systems. There's been amazing work done by Jaak Panksepp, who is a researcher in affective neuroscience. So, he pretty much studies how emotion systems work in non-human animals and humans. He has shown seven different basic emotion systems in non-human animals, in mammals, in particular, that go right along with what we experience. We have the same brain structures that those animals have so we know that they are experiencing these basic emotions. Things like joy, rage, love, right? He terms them this. He did a lot of really cool research. You can actually YouTube tickling rats and laughing rats. I don't know if you've heard of this. Really cool stuff, that really, I guess, helps us see that, hey, maybe some of this anthropomorphizing isn't all wrong, right? We actually share this.

FREDERICK: And this bond that we create with different animals helps us to have a sense when we walk in the door if they are a little shy, maybe they did something they weren't supposed to, maybe they were sleeping on that couch all day and they were not really supposed to, or that excitement that they have, or all... The bond helps us to really understand the cues are giving us, right?

CHARLTON: It does, I think. I think a lot of the cues that they give us, too, are cues that they've been rewarded for giving, or punished for giving. You know, when a dog acts guilty, some of that guilt act is, from the dog's perspective, "Please don't hurt me," for whatever has happened. Because you're giving cues when you look at every bit of your trash emptied from the trash can, that it is a problem in your environment.

FREDERICK: So we've conditioned them to act in certain ways.

CHARLTON: We really do. In the same way as a dog acts or an animal acts fearful, and we cuddle them, we are providing them reinforcement for fear behaviors. So sometimes when we have, just like with human children, when they have behaviors that we don't understand, it is often the case, or sometimes the case, that we have created it by what we've reinforced or punished. And it is the same thing with dogs or what other animals you have in your environment.

FREDERICK: We might not even understand the set of stimulus that are leading to these sorts of responses. We've baked it in without even knowing it.

MORRISON: Exactly. I honestly think that as animals we are the worst at reading cues of other animals. I will say that. I think dogs are so much better at picking up on our cues and our body language because as humans, we don't communicate solely through body language. We use, right, spoken word.

FREDERICK: We're texting each other.

MORRISON: Yeah, right, okay. So social media, okay, but we're not great at picking up on those behavioral cues. And so, sometimes I think we misread some of the behavioral cues that our pets or other any other animals that are around are giving us and we often do reinforce behaviors that maybe we don't particularly know we're reinforcing.

NARRATOR AND EDITOR RICHARD GAY: We'll return to Jeff Frederick and his guests in just a moment. The faculty and staff at the College of Arts and Sciences are changing lives through education. To learn more about our departments and accredited programs as well as student and faculty achievements explore our website. Additional news and events might be found by following us on Facebook at UNCP College of Arts and Sciences. Remember, you can subscribe to 30 Brave Minutes on PodBean and iTunes. You can also join us in changing lives by donating to the College of Arts and Sciences on our website. Thanks for listening and now back to 30 Brave Minutes.

FREDERICK: So how do psychologists, and for that matter, psychiatrists, think about using animals to build empathy, to do therapy, those kinds of things?

MORRISON: So there's been quite a bit of research that has looked at children interacting with animals and how empathy develops and there's a lot of data that shows that children who have had early experiences with animals have higher competence and empathy. They are more empathic towards other humans, towards other animals and...

FREDERICK: And all these are desirable outcomes.

MORRISON: Yes. These are all positive things. They have better higher self-esteem in some situations from interacting with animals. It really does facilitate the social aspect of being a human because we are social and so interacting with that animal gives them a chance to really

develop these skills. Especially for kids who maybe are less likely to be outgoing with other humans. For whatever reason, studies have shown that children seem to really relate to animals better than sometimes adults, and so it really does become a bridge, especially if you're going to start, you know, using animals in the therapeutic situation.

FREDERICK: If you observed humans and animals interacting for a while, say a specific human, would you be able to gather some behavioral observations just from that?

MORRISON: Absolutely. Both from the perspective of, you know, the human, and also the animal. I think that you could, first of all, notice the comfort level in the individual change, so a human who maybe is in a stressful situation, you can almost automatically see them let go. Right? You can just see the body kind of loosen up a little bit. The tension levels are released. And similarly with the animal. I mean, most animals that are in therapeutic situations are already pretty calm in that situation, but I actually saw a video recently on CBS This Morning. There is a farm in Massachusetts that is not just a farm. It's a mental health facility where they do all of their therapy sessions and a little girl was being interviewed and she has anxiety issues and she said that she feels that she needs to be calm so that she can help the animals stay calm and it helps her, in turn, deal with her anxiety. It's wonderful to see that change, and it's almost instantaneous in a lot of situations.

FREDERICK: Would it be fair to say that humans who exhibit negative behaviors toward animals lack some ability to create empathy? Or, if they were prone at some stage of development to do violence to animals, would that be something that would register in terms of behavioral health?

CHARLTON: It might register in terms of behavioral health. The first thing of course, that comes to mind is animal abuse is a predictor of future behavior that does harm to other humans. I'm not a clinical psychologist, but I believe that it's actually one of the criteria of harm to animals as a child predicting antisocial behavior later on as an adult and so certainly when we look at some of those disorders we do see a lack of empathy as part of them. And so it might just be something that was kind of built in or something that came from, you know, what causes those disorders can be environmental as a child. It could be some genetic component as I'm trying to recall the research that I've read on that, but you will see that lack of recognition that this other alive being is hurting or being harmed. It just doesn't register.

FREDERICK: I know one of the trends in therapy is Equine Therapy or a variety of different things that allows humans to develop an ability to express their feelings, all kinds of feelings, by working directly with animals.

MORRISON: So Equine Therapy, Dolphin Therapy, I mean, there are therapy animals for multiple situations. Really, what I think people need to understand is the animals are a tool that the trained therapist uses to access, right, the individual that's with them. Whether it's to calm the, you know, client down so that they can focus more with the therapist. Or, in some situations I've read some research that has done work with children that have been abused and maltreated and have trouble trusting. The animal is the bridge for trusting. So the animal being there, they can start trusting the animal, they can start trusting the therapist. So in a lot of ways, it's that,

there's a lot of factors that play a role there, having animals as that tool. And horses are amazing when it comes to picking up on the cues of humans as well. Just like dogs, they've co-evolved with humans, so they're wonderful at determining, "well, is this individual safe?" You know, right, or are they feeling insecure and they can modify their behavior to fit the situation.

FREDERICK: What do we know about how humans differentiate in their minds between companion animals and wild animals?

MORRISON: So there's a lot of research that looks at their prior experience with animals as to how you perceive these differences. So if you're someone who has owned a pet, for example, you may have more positive perceptions of wild animals, versus someone who hasn't owned a pet. So familiarity with companion animals really does impact part of your, I guess, relationship with the wild species.

CHARLTON: Maybe a schema for animal thinking.

MORRISON: Yeah and a culture. Thank you for reminding me about that. So culture plays a huge role in that, your belief system as well, you know. Whether or not you see an animal as dangerous, right? All of these things are learned and there's even some really cool research that has looked at, in the education system, if you can actually change children's perceptions of scary, dangerous animals, right, to have more respect for some of these wild animals that, you know, we don't understand.

FREDERICK: And, you guys are starting on a research project comparing some attitudes of urban and rural students about animals. Talk a little bit about what you're trying to accomplish and how you will set up that study. So, we were really interested, with a colleague of mine up at Manhattan College, which is a predominantly urban environment, to see if the knowledge that you gain living and growing up in these different areas impacts you're, not only perceptions of animal thinking but also attitudes towards animal use, so hunting, using animals in medical research, those types of things. And prior studies have shown that there's a lot of factors like diet, geographic location, even gender, that impacts some of these things. So we've conducted some research here at UNCP and Manhattan College looking at college student's perceptions of animal use and then, their belief in animal mind which is called BAM research, to see if there's a relationship between whether or not you think animals are capable of thinking and how you feel it's acceptable to use and treat animals.

FREDERICK: Do you expect that there will be significant differences between how urban and rural students look at these?

MORRISON: So, based off of some of the prior research we do think there will be some differences, but it's not just where you currently live. So we've asked questions about where did you grow up, you know, where do you most identify with? Because that plays a role as well. But even as we were talking about diet, your diet choice. Are you a vegetarian? Are you an omnivore, or pescetarian, right? There seems to be some controversy in the literature as to whether or not that plays a role, but some of the studies do show that omnivores tend to be less likely to admit that animals are capable of thinking. Especially the food animals. And one of the

reasons for that is this whole idea of cognitive dissonance, which you know, how do I deal with the guilt I feel for eating this animal? Well, they're not that smart, so that's how I deal with my own internal guilt. So we think that might be playing a role in why we see some differences in diet choice just to help you kind of get through that.

CHARLTON: And how you're raised, I think. Some folks raised in more rural environments where they are intimately involved in the animal food chain, and they know where their steaks come from and where their chicken comes from and how cows are milked and they have other companion animals that are working animals. Dogs that are working animals. Dr. Morrison mentioned the hunters. We've also got farmers who use dogs as an integral part of their working ranch.

FREDERICK: Someone who sees literally every element of an animal's life cycle from how helping them to enter into the world to using them in a variety of different ways, to being present, or being a part of the end of that life, for whatever the next purpose of that animal would be in their minds. They might internalize all of these issues differently from someone whose idea of animals would be walking near Central Park and seeing a different set of experiences.

MORRISON: Exactly. Someone, you know, somebody who's just, maybe only ever had, you know, a pet and has never been exposed to being in the wilderness and hunting and using the meat, and all of those things. There is definitely, I think, a difference there.

FREDERICK: How do you develop instruments to measure the depth of intensity of humans, or for that matter, of animals in the human animal bond and relationship?

MORRISON: So that is the tough part about doing this research. We can, of course, develop questionnaires. There are several questionnaires looking at attachment level to animals. So there's animal attachment questionnaires, you know, but these are all self-report measures, which we know, right, may not always be accurate of the full picture, because a person's idea of what their bond is may be different from what the real bond is. So, I think, moving forward, and other scientists have expressed this, that more observational research needs to be done, looking at the actual interactions between the animal and the human, along with these self-report measures. And then measuring other factors, like physiological measures in the animal, you know. Are they releasing oxytocin or are they releasing cortisol, which is a stress hormone, you know. Are they actually having a positive experience in this relationship as well?

FREDERICK: As hard as all that is to measure with humans, it's even harder to measure with animals, right?

CHARLTON: Well, they have to train the dogs to sit in an MRI machine. So you have, it's actually, if you ever look up the videos, they're adorable. These little dogs climb in and they sit there, and they go into the MRI machine, but there's just a few of them because it requires some intensive training to reward them for sitting there and being still.

FREDERICK: And perhaps a lot of bacon.

CHARLTON: Yes, some sort of treat. But the research from it is fascinating because you can actually look at what's happening in the mind of the animal when they smell their human or see their human.

FREDERICK: Do animals select different cues and behaviors with humans than they do with animals? How do they see us? As just another animal or...?

MORRISON: That is a question that I would love to have the answer to. I wish I knew how my dog looked at me, like what he really thought when he looked at me.

CHARLTON: He's hugging you.

MORRISON: Right? He's hugging me with his eyes. I love that, by the way. I really think that because we are animals, humans are animals, too. They are looking at us as another animal, and they're forming a bond with us just as they would with another animal. And in some cases, if we're talking about domestic animals, which I know we've mentioned a lot, but we are the caretakers for those animals, too, so I feel like there's an opportunity for a stronger bond there, than there maybe would be in other situations. But I still think that the cues they're looking at, the body language are looking at, they're looking at it similarly, as if it was another animal.

CHARLTON: Well, we know especially with the domestic dog, they will pay attention to human cues much more than, say, a wolf. So if I point at a treat, you know, it's rolled somewhere, it's moved somewhere, my dog is going to look for that treat. A wolf will not. It will be like, dude, I don't know what you are doing. Why are you waving at me? But the dog will. So there is that notion that being raised with us, evolving with us, they've learned our cues and to trust us.

FREDERICK: You have seven dogs.

CHARLTON: I do.

FREDERICK: How similarly or differently do you interact with each of them? Have they all been trained in a similar way? What are the interesting personality quirks of having a pack like that? Do you know, one of the, I think, the most interesting things about having a pack, is you are always reminded that your dogs are dogs. They are not babies. They are not children. I might refer to them as my children, but they are dogs and they interact with each other like a dog pack. So, for example, the females in the pack do not always get along and sometimes you don't know when it's coming. When they become angry with each other in that pack. It becomes a little bit difficult to train a pack because they rely on each other, less so than me. So, they are looking to each other for cues. I had a stray who arrived who was pregnant. That's how my pack grew exponentially, almost that day. So, there were three puppies that I raised together. Puppy training them was difficult because they... we called them the Borg. They are high of mind, and when one gets worked up, the others get worked up. Much more so, I think, than when it's just you and another dog. I use reward. I'm a reward user and consistency and so they all know where to go to eat. To some extent you have to have some control over them. Otherwise, it's just chaos all the time and not to say I don't have a chaotic home it is that consistency and that reward and letting them know when they've done something that I like and that they're going to get treats for and

trying to create an environment in which they want to come to me instead of running from me, even though aggravation does happen.

FREDERICK: Their goal becomes to please you in part and that helps them to learn the behaviors and when to practice certain behaviors the way you want them to do it.

CHARLTON: And we operate on a 'nothing's for free' economy in the house with the dogs, so generally speaking, if they're going to get a treat, they're going to sit for it. They're going to do something for it. So they always know.

MORRISON: I think that you can always work in choice and control with the animals, too. You don't want it just to be like, I want you to do this, so you're going to do it because I'm going to give you a reward. You can still build in choice and control because personalities are there. I mean, animals all have different personalities. We have different personalities. You said earlier, in the beginning in your introduction, that sometimes these things don't mesh well together. And so I think by understanding that, hey, maybe your dog or the dolphin that your training just doesn't feel like...

FREDERICK: It's just not working. It's not you, it's me, and we will be friends.

MORRISON: So you just let it go and okay, so I'll give you your space, I'll take my space. So, I think that it really has to be a two-sided relationship for it to be a good one.

FREDERICK: And then a lot of consistency, right? You know, I've had two dogs in 26 years and I kind of trained with them both ways. They would go out in the yard when they were puppies and when I wanted them to come in, I would whistle. Well, for the first week or so when I whistled, they would come to me and they would get a treat. So, after a while I would just whistle and they would come and I wouldn't give them a treat every time, but then we moved on to the next thing. If they came right away and they came in, but not jumping on us immediately, then they would get that treat. So over time, over a period of six or eight weeks they understood. Look, I'll let you out, you go do your thing and when I'm ready for you to come in, I'll whistle and you come in and this is the way you come in. And so I just can't imagine not whistling when I'm ready for my dog to come in because he has trained me, as well.

MORRISON: Yes. They do. There's lots of training going from both sides, definitely.

CHARLTON: Oh, yes.

FREDERICK: So what would you like to learn next? I mean, where's the research going for us to really be able to understand more about this connection?

MORRISON: I think that better measures need to be made looking at the nonhuman animal side of the piece. I think that's what is really lacking because what behavioral measures can we come up with, you know, to really determine you know, how is the animal feeling? Because even if you if you could do that at a meet and greet at a Humane Society when you're looking for a pet, you maybe would be able to actually match, you know, dogs or cats with potential owners and

you won't see the return rate. You know, you won't see animals coming back to the shelter. And I know that there's research looking at that and more research needs to be done with non-companion animals. We need to look more at the human-animal relationship and bond with animals in captivity and zoos to help, you know, with animal welfare because that's also an issue. Humans are a part of their everyday lives. And so we need to better understand that relationship on both sides.

FREDERICK: Yeah, and in the end we all just want to know what our dog or what our cat is thinking when they look at us, right?

MORRISON: Well, they're hugging us with their eyes, right?

FREDERICK: And we've learned that today. How exciting. My dog thinks that every two years I provide him this great obstacle course in the backyard. It was called Hurricane Matthew and then Hurricane Florence because we had, like four more feet of standing water all across our backyard the woodpile for my fireplace got dislodged by all of it. So my dog looks at me when the water finally starts to go away and like, is it over already? The amusement park is over already? He was just so excited to run around and to jump over all of these obstacles rearranged by the hurricane and then when it was over and my son and I are in the backyard and we're putting the yard back together, he's got this look like, really, does it have to end so soon?

CHARLTON: Well, too, you are home. You are around more and he has to love that.

FREDERICK: Yeah, well, I hope so, from his perspective.

CHARLTON: The people are at home.

FREDERICK: That's my story and I'm sticking with it. He loves it when I'm around. This has been a great discussion and a wonderful insight into how we interact with animals and what they might be thinking and how we might measure it. Thank you to Kelly and Rachel and tune in next time for another edition of 30 Brave Minutes.

NARRATOR AND EDITOR RICHARD GAY: Today's podcast was edited by Richard Gay and transcribed by Janet Gentes. Theme music created by Riley Morton. This content is copyrighted by the University of North Carolina at Pembroke in the College of Arts and Sciences. It is to be used for educational non-commercial purposes only and is not to be changed, altered, or used in any commercial endeavor without the express written permission of authorized representatives of UNCP. The views and opinions expressed by the individuals during the course of these discussions are their own and do not necessarily represent the views, opinions, and positions of UNCP or any of its subsidiary programs, schools, departments, or divisions. While reasonable efforts have been made to ensure that information discussed is current and accurate at the time of release neither UNCP nor any individual presenting material makes any warranty that the information presented in the original recording has remained accurate due to advances in research, technology, or industry standards. Thanks for listening and go Braves.

