

Honor Among Beasts

Think altruism, empathy and a sense of fair play are traits only humans possess? Think again

By MICHAEL D. LEMONICK

Anyone who has owned dogs or spent much time watching them is familiar with the posture: hind end up, chest down on the ground, forelegs stretched forward, an eager expression on the face. It's obviously a friendly, playful gesture, and for most dog lovers, that's all you need to know. Ethologists--animal-behavior experts--go a step further. They call this move the "play bow" and know it's used not just by dogs but also by wolves and coyotes to signal an interest in the romping, pretend-fighting sort of games that canines of all kinds seem to love.

But Marc Bekoff, an ethologist at the University of Colorado, always suspected there was something more going on. True, the posture happens most often at the beginning of a bout of canine play. But it also happens in the middle, and not randomly. And the more closely Bekoff observed dog behavior, the more he began to recognize other ritualized motions and postures--some of them so fleeting that he couldn't really keep track. So he began making videotapes, then playing them back one frame at a time. "The more details I saw, the more interesting it got," he recalls. "It wasn't just dogs playing; it was also dogs exchanging an incredible amount of information as they played."

In short, Bekoff was able to show--after at least a decade of painstaking observation and analysis--that canine play is actually a complex social interaction in which the participants constantly signal their intentions and check to make sure their behavior is correctly interpreted. Dogs that cheat--promising a playful bite but delivering a harsh one, for example--tend to be ostracized.

That understanding is nothing short of revolutionary. Only a decade or so ago, scientists were arguing vigorously over whether animals had emotions: just because a dog looks sad or a chimp appears to be embarrassed doesn't mean it really is, the skeptics said. That argument is pretty much over. The idea of animal emotion is now accepted as part of mainstream biology. And thanks to Bekoff and other researchers, ethologists are also starting to accept the once radical idea that some animals--primarily the social ones such as dogs, chimps, hyenas, monkeys, dolphins, birds and even rats--possess not just raw emotions but also subtler and more sophisticated mental states, including envy, empathy, altruism and a sense of fairness. "They have the ingredients we use for morality," says Frans de Waal, a professor of primate behavior at Emory University in Atlanta, referring to the monkeys and chimps he studies.

That doesn't mean animals necessarily have a fully developed moral or ethical sense. "I don't say dogs are fair the way you and I are fair, or have the same moral systems," says Bekoff. But it does mean that-- just as with so many other attributes once considered unique to humans, including toolmaking and language--animals have at least rudimentary versions of what we call morality. That would conform to Darwin's ideas of evolution, and indeed, Darwin himself was convinced this must be true. "It would be bad evolutionary biology," says Bekoff, "to assume that moral behavior just pops on the scene only with us."

Study after study bears him out. In one of De Waal's experiments at Atlanta's Yerkes Regional Primate Research Center, for example, pairs of capuchin monkeys (the species favored by organ grinders) have to cooperate in dragging a heavy tray so they can get the food on it. They quickly figure out how to do so, sharing the effort and the food. But when the food is placed on one side of the tray, giving only one monkey access to it, they still share. "There is no need for the one who gets all the food to do it," says De Waal. "He could sit in the corner and eat all by himself."

In another experiment, De Waal and his students reward two monkeys for a task by giving them cucumber. It's not a favorite food, but they happily go on doing the task anyway. Then the scientists begin giving one of the monkeys grapes--like caviar for a capuchin. At that point, the monkey that is still getting cucumber refuses to play. Says De Waal: "It's like me discovering my colleague, who works just as hard as I do, gets a salary that is twice the size of mine. I was perfectly happy before."

Both those results can be explained in part by self-interest. But De Waal has also observed behavior that can be seen only as empathetic. When a male loses a fight and sits on the floor screaming, the other chimps will comfort it. "They come over to these distressed individuals and embrace them and kiss them and groom them, and try to calm them down," De Waal says. True, there's an implied benefit for the comforters--the hope that others will do the same for them if they end up in that situation--but that's a level of emotional abstraction that would once have been presumed impossible.

At TerraMar Research on Bainbridge Island, Wash., animal behaviorist Toni Frohoff has also observed dolphins behaving with what appears to be altruism--although not predictably. In one case, she recalls, she and her colleagues watched a group of dolphins assemble around a female swimmer the researchers later learned was exhausted to the point at which she was afraid for her life. "Conversely," Frohoff says, "I have been 'abandoned' [by dolphins], where all of a sudden they'd disappear and I'd see a shark."

Does that mean the supposed altruism of dolphins--not just in Frohoff's studies but also in anecdotal reports of the animals' rescuing sailors--is a myth? No, she says: "The mythology in some cases is true." But dolphins have adapted so long in such a different environment to humans that there's reason to suppose that their ethics might be equally different to ours.

Dolphins, dogs and primates are the usual suspects when scientists talk about higher mental functions, but fairness, at least, extends even deeper into the lower animal kingdom. If you watch rats wrestle, says Stephen Siviy, a psychologist at Gettysburg College, you'll see that the bigger rat lets the smaller rat win every now and then so that the smaller rat will keep playing. That, he says, could be interpreted as a sense of fair play, although he emphasizes that a rat's behavior is probably Darwinian--based not on thoughtful consideration but on what has worked in the past to keep species alive. "I can't see a rat sitting around and contemplating the ethical consequences of what it's doing," he says.

At Bowling Green State University in Ohio, psychologist Jaak Panksepp is similarly leery of using words like morality and ethics to describe animal behavior. He is sure that rats and other animals do experience joy, sadness, anger and fear--because the wiring of the brain is set up to generate those feelings. (Actually, Panksepp discovered a few years ago that rats chirp in laughter, albeit in response to tickling, and in a register too high for the human ear to detect.) Nobody has yet found the neurocircuits for ethics or morality, however, so Panksepp is reluctant to comment about those qualities. But he does accept that some animals have strict rules of behavior. "Cockroaches probably don't have a sense of justice," says Panksepp. But dogs and rats, which are social animals, clearly do.

So do birds, says Dan Blumstein, a former student of Bekoff's, now studying animal behavior at UCLA. While he hasn't addressed the question through formal research, Blumstein has seen hints of behavioral rules in songbirds. A given species tends to have similar songs but with local "dialects" that vary from one territory to another. If a bird sings with a nonlocal accent, he says, "everybody knows: 'Oh, my God, there's an invader.' Then they get upset and kick it out." The question, Blumstein says, is whether that's a sign of ethics or just instinct.

While some behaviors are obviously instinctive, Bekoff is convinced that others are not. "If you study animals in the complex social environments in which they live," he says, "it's impossible for everything they do to be hardwired, with no conscious thought. It really is." And once again, he cites play as perhaps the most obvious example. Play between dogs involves

extremely complex, precise behavior, he says. "They're really close, they're mouthing, but they don't bite their own lips; they almost never bite the lip of the other animal hard, nor the eyes, nor the ears." And that requires communication and constant feedback. "Just think of basketball players faking left and going right," says Bekoff. "There's no way you could be doing that by pure instinct."

As for the play bow, his guess that it meant more than just "Let's play" turned out to be correct. "It says, 'I want to play with you' but also 'I'm sorry I bit you so hard' or 'I'm going to bite you hard, but don't take it seriously.'" It even works between species: Bekoff has seen wild coyotes bow to dogs--and vice versa--before they engage in something like play. "At least they don't fight," says Bekoff. "The play bow changes the whole mood."

Meanwhile, dishonesty is punished across all canid species. "I know coyotes best," says Bekoff. "Coyotes will signal play and then try to fight or mate with others, but if they do that enough, they can't get other animals to play." Does that behavior rise to the level of ethics or morality? If morality is simply living by the rules of a society, says hyena expert Christine Drea of Duke University, then yes, animals do that. But just because animals have rules and bad things can happen when those aren't followed, she says, "doesn't mean they're ethical creatures."

But while animals may not possess true ethics or morality, Bekoff, De Waal and a growing number of their colleagues think fairness and cooperation may be the forerunners of those qualities, just as the apelike brain of our distant ancestor Lucy was the forerunner of our own, much more sophisticated minds. After all, Lucy was no Einstein but without her, the leap from the tiny brains of primitive mammals to the subtle intelligence of an Einstein could never have occurred. --Reported by Dan Cray/Los Angeles and Wendy Grossman/Houston