BRANDON KEIM

When That Chickadee Is No Longer "A Machine With Feathers"

New research on animal intelligence is leading to a clash of worldviews that has implications for policy.

Approximately 120,000 years ago, red deer living in what is now Russia's Chukotka Peninsula crossed a stretch of land laid bare by falling sea levels and found a new home in North America. They spread and diversified, eventually giving rise to four subspecies. Until the mid-nineteenth century, the smallest of these subspecies, called Tule elk, ranged across much of modern-day central California, but habitat loss and overhunting were their demise. By 1874, when ranch workers draining a marsh in the San Joaquin Valley encountered several Tule elk, years had passed since anyone had seen even one.

But for the mercy of that rancher, they might have gone extinct. He protected that last herd, and by the early twentieth century enough survived for conservationists to seed new Tule elk herds. Three of those herds, approximately 700 elk altogether, live in Point Reyes National Seashore, an idyllic 100-square-mile mosaic of coastal California grasslands, forests, and ranches. An estimated 2.5 million people visit the seashore every year; walking paths may take them within a few paces of the elk, who are accustomed to the presence of humans and, in the absence of hunting, unbothered. The proximity yields an intimacy and affection—which may explain why so many people were so passionately upset when, in 2020, the National Park Service allowed 152 of the elk to die of starvation.

A prolonged drought had impoverished the vegetation and dried up the freshwater springs on which the largest elk herd relied. Elsewhere they might have migrated in search of food and water—but within Point Reyes National Seashore, their movements were constrained by fences built to prevent them from competing with cattle. Even as livestock on the other side of the fences thrived, emaciated elk collapsed on the landscape.

To the National Park Service, this was an unfortunate but acceptable eventuality. In the future, they could cull the herd in order to keep their numbers at a level that would not be so vulnerable to drought; in the meantime, nature would provide the population control. It was sad but not a threat to the subspecies as a whole or to the survival of elk in aggregate at Point Reyes. To many others—among them animal rights activists, environmentalists, conservationists, and everyday folks who happened to feel for the elk—standing by while the elk died slowly and painfully was immoral.

They held protests and organized campaigns. Some illegally carried buckets of water to the elk as a gesture of defiant compassion. Others filed a lawsuit. The National Park Service revisited its management plan and decided to let the elk roam free, a decision that culminated this year in a deal to buy out most of the National Seashore's ranchers and return the landscape to a wilder state. The Tule elk controversy is now settled, but it illustrates a growing clash of worldviews about animals and nature that has implications for policies guiding our relations to the wild world.

A sense of empathy and individual regard for animals is, for the most part, formally absent from the concepts and institutions that have shaped American relationships with conservation and with nature. Decades ago, that caused little friction, but ever more people understand animals—not only dogs and cats and other companions, but wild creatures too—as thinking, feeling beings to whom humans have ethical obligations; whose interests merit consideration not only in terms of species and populations, but as individuals. Conventional attitudes have long been considered more "scientific," dismissing compassion for individual wild animals as anthropomorphizing sentimentality. That's no longer easy to do.

In recent decades, scientific research on animal minds has flourished, describing rich intelligences not only in a few extra-smart creatures like elephants or great apes but a great many: songbirds weaving nests, zebrafish who are curious about their world, cockroaches caring for their young, and on and on. To think of each animal as a some*one* rather than a some*thing*, as animal advocates are fond of saying, is where the science is pointing us.

Kathryn Freeman *If These Walls Could Talk*

In her enchanting narrative paintings, the Massachusetts-based artist Kathryn Freeman imagines a world where people coexist with flora and fauna in moments of leisure and creativity. She dissolves the boundaries that delineate indoors and outdoors, presenting the alternate reality of her ideal: Humans relent to the will of the wilderness, inviting all manner of furry and flighted friends into their homes. For her first exhibition with Carrie Haddad Gallery, *If These Walls Could Talk*, Freeman incorporates the figure, landscape, and domestic spaces in dreamlike tableaux.

"I always drew what I dreamed," Freeman notes. As in the experience of a dream, where one can take the absurd in stride, the humans of Freeman's paintings maintain a nonchalant disposition in the face of extraordinary occurrences. This notion is furthered by her use of setting, as the architecture of the living rooms, kitchens, and bedrooms encourages reciprocity between humans and the natural world. In some places, exterior walls are missing entirely, allowing interior space to flow seamlessly into landscapes of verdant forests and humble mountains that are inspired by the artist's surroundings in the Berkshires.

Enrapturing as they are, Freeman's images function as more than spellbinding works of fiction; she poses very real questions about the disconnect between humankind and nature. "There's the world as it is and the world as it should be," Freeman opined. "We should be living with nature, not imposing ourselves on it; accepting it, letting it exist with us; observing it quietly, just letting it be around us."

—Matt Moment

Kathryn Freeman's paintings were on view at Carrie Haddad Gallery, Hudson, New York, until April 6, 2025.

KATHRYN FREEMAN, *Floating Heirlooms*, 2024, oil on linen, 12 x 16 inches. (Previous spread) *Hunting Season,* 2024, oil on linen, 24 x 30 inches.

From the "Nature Fakers" to Morgan's Canon

Modern conservation attitudes were shaped in part by the cultural ferment of the early twentieth century, when the growth of cities, the burgeoning animal protection movement, and the aftermath of Charles Darwin's theory of evolution—which established a commonality between humans and other animals—nourished a sense of animals as intelligent as well as an ethos of respectful kinship. Many popular books about nature reflected this zeitgeist, with best-selling naturalists describing animals reasoning, caring, and learning.

Not everyone, however, was pleased by this turn. Some naturalists and scientists accused those animal intelligence–embracing nature writers of exaggeration and outright fabrication. In 1903, the naturalist John Burroughs published an article in *The Atlantic Monthly* that condemned "the writer who seeks to palm off his own silly inventions as real observations," lampooning many of his contemporaries and sparking a public feud that is mostly forgotten today, but was front-page news in its time: the so-called Nature Fakers controversy.

The name derives from a phrase coined by President Theodore Roosevelt, a champion of wilderness preservation and insatiable hunter (on one African expedition, he and his son reported killing 512 animals). Roosevelt publicly allied with his friend Burroughs in despairing of fabulism presented as fact, and the methods of those Burroughs called "yellow journalists of the woods." Some of their criticisms were fair, to a point, but they advocated for a dismissively limited view of animal intelligence. "The longer I observe and consider the lower animals," Burroughs wrote, "the more I am persuaded that the old Cartesian view of them as mere automata is nearer the truth than the more recent popular view of them as possessed of a fair measure of human reason."

KATHRYN FREEMAN, *Stories for Foxes*, 2024, oil on linen, 24 x 30 inches.

The "Cartesian view" referred to René Descartes, a seventeenth-century philosopher and foundational Enlightenment figure who compared animals to mechanical automata. Their seeming intelligence was only an illusion, Descartes argued, and they possessed no more consciousness than a clock. Burroughs echoed Descartes when he called animals "machines in fur and feathers," and though he acknowledged that humans could also behave in mindless, instinctive ways, he considered reason and reflection to be the sole province of humans.

The Nature Fakers controversy can be seen as part of a broader pushback against a belief in animals as meaningfully intelligent. Within the sciences, a rule espoused by the zoologist and psychologist C. Lloyd Morgan became a bedrock principle of twentieth-century research: If a behavior suggested the presence of sophisticated psychological processes, it should be interpreted as resulting from simpler processes until every alternative explanation had been ruled out.

In theory, Morgan's Canon, as this rule became known, encouraged more rigorous science. In practice, it also embodied and reified a view of animals as mindless. The belief that animals share important qualities of mind with humans was relegated to children's stories and entertainment, not serious knowledge-making. The dismissive view of animals became foundational to twentieth-century science and philosophy. It was in this intellectual environment that the institutions, practices, and bodies of knowledge that guide contemporary Western posture toward nature and to wild animals took shape.

The sense of animals as fellow intelligent beings—and the ethical questions that follow—are conspicuously absent

KATHRYN FREEMAN, *The Baker & the Bear,* 2023, oil on linen, 30 x 36 inches.

from the traditions of conservation, wildlife management, conservation biology, environmentalism, and sustainability. Instead, that sensibility is found within the animal advocacy movement, and also in our relationships with companion animals. Nature is kept separate. In the last decades of the twentieth century, however, the intellectual foundations of that divide began to erode as new research on animal intelligence flourished.

First person chickadee and the social sturgeon

A powerful example of research that challenges the human-animal divide, and in turn the exclusion of animals from moral consideration, involves self-awareness. Knowing that you are *you* is a capacity so fundamental to human experience that it's practically impossible to imagine not being self-aware. But until recently, this was thought to be exceptionally rare among other animals, possessed only by other great apes, elephants, bottlenose dolphins, magpies, manta rays, and perhaps cleaner wrasse fish.

Individuals from these species have passed the mirror self-recognition test, in which scientists observe whether an animal uses a mirror to learn about a mark secretly made on their bodies—a touch of paint, for example, on a sleeping chimpanzee's brow. Interest in the mark indicates their possession of a mental self-image; since the test's development in the late 1970s, it has been the definitive measure of self-awareness.

More recently, however, many scientists have argued that the mirror test excludes those creatures who are not so reliant on sight. They've developed versions that emphasize

other senses, such as scent. A dog's self-image, for instance, is less important than their self-odor.

Still other scientists and philosophers have critiqued such tests for treating self-awareness as an all-or-nothing phenomenon. They argue that a sense of self exists on a spectrum, from the relatively uncommon, highly contemplative sort measured by mirror tests to a fundamental selfhood produced by a combination of physical perception and internal representation. That sort of bodily self-awareness—measured in one especially clever test by whether rat snakes would choose an appropriately sized hole to pass through after a meal swelled their bellies—is ubiquitous. It arguably underlies much of the everyday texture of our own lives. For all that self-reflection is important to, it's not necessary for experience.

Animal emotions are another important area of scientific study, though the field was slow to develop at first. Compared to other, more straightforward capacities like pattern recognition or memory or problem solving, feelings are difficult to measure in rigorous, empirical ways. Some scientists and philosophers have even argued that language is necessary to consciously experience emotion—an assertion that is speculative and underestimates the overlap between the communications of humans and many other animals, but nonetheless retains power. Perhaps other biases have been at work, too. Although both rationality and emotion are products of the mind, only the former has traditionally been associated with intelligence.

To some extent, that skew still remains, but it has been corrected by a deeper appreciation of shared human and animal neurobiology, as well as by new tools and study designs that have revealed a world teeming with nonhuman feeling. Not only do they describe the emotional richness of species in which one would expect to find it, such as stressed-out dolphins or parrots for whom joy is contagious, but in unexpected creatures: starlings who feel better after bathing, lake sturgeon who are less stressed by extreme heat when in the company of their kin, even bumblebees who enjoy playing.

None of that should be surprising when one considers that emotions are, in a sense, the way that evolution selects for useful behavior. A starling who enjoys bathing will keep her feathers in better shape; play is a useful way of learning how to use one's body. Often this takes place in social contexts, which brings us to the final stop in our accelerated tour of trends in scientific research on animal intelligence: sociality. One need not recognize animals as intelligent to observe their social behaviors, but doing so adds another layer of significance to them.

Chickadees communicating to each other using syntax—the meanings of their vocalizations change depending on their order, an essential property of human language—are doing so not as interactive biological music boxes but in the first person, as beings with social lives going about their days. When garter snakes prefer to spend their winter brumation in the company of certain other individuals, we can think about that preference not only in the language of conspecific association but perhaps of friendship. Ungulate migrations can be understood not only as physical feats but as cultural accomplishments, with knowledge passed between generations and decisions shaped by group deliberations as well as instinct.

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Today the scientific conversation has moved well beyond whether or not animals are intelligent. The most interesting and adventurous questions are now: What sort of intelligences might yet be found? How can welfare be assessed in species very different from humans? What is the interplay between instinct and reflection? What sorts of meanings do places hold for animals? How do animals understand death? Can animals have a sense of beauty? How does cognition shape ecology?

And the ultimate question, perhaps, is what we *do* with these insights. It's entirely possible to take this deeper awareness of animal intelligence, and of the commonalities between human and animal experience, and do nothing at all with it. But that awareness makes our relationships to animals—not only as species and populations, but as individuals—a matter of greater moral and ethical weight. It nourishes a sense of kinship and compassion rooted in a shared experience of life as beings to whom one can relate. It makes it difficult to maintain the fiction that, per Burroughs, animals are "machines in fur and feathers." These insights challenge us to consider anew our relationships and responsibilities to individual animals and to nature.

A matter of moral interest

The implications of this reconsideration extend to all categories of animal: those we use for food, research, or labor; our companions; and those who live wild. Yet while discourse around domestic animals, though inconsistently applied, is fairly well-developed—most people are at least familiar with criticisms of factory farming or the use of animals in medical experiments—what it means to think of wild animals as fellow persons has received less attention.

How might this shift affect long-established policies? There are obvious implications for trapping and purely recreational hunting, including killing contests and predator derbies. Unlike hunting for food, those are activities that have little public support. Disagreements about hunting and trapping, however, are prone to becoming culture-war issues, making reforms difficult.

Other possibilities are less fraught. Much can be done to protect animals that is now treated as optional rather than standard operating procedure: bird-friendly glass in new buildings, animal crossings for roads, and non-lethal methods of addressing wildlife problems. (In the case of Tule elk, this could include managing their population with contraception rather than allowing them to starve or conducting culls.) This spirit of conviviality extends to conflicts with animals typically seen as pests, such as rats or pigeons. They still matter.

Both rats and pigeons are also considered non-native and invasive, categories that typically render animals undesirable in mainstream conservation circles. Often they are actively persecuted or considered unworthy of protection. Recognizing the value of their lives is motivation to consider what benefits they might provide. The wild donkey descendants of animals used by nineteenth-century miners dig wells that make water available to other animals in southwestern deserts, for example, and parrots descended from pet trade escapees build nests that are used by other animals. Not every species will prove so productive, so to speak, but they might still be respected and even accepted.

Another implication involves systems rather than specific issues. At the state level, some animal advocates have pushed to be included on government committees that make wildlife policy but are typically limited to people with a background in hunting. These advocates would ostensibly speak on behalf of animals in ways that don't often occur within government—and this could be done not only on management committees, but in other governmental and institutional settings.

Animal representation is complicated, of course. The committees that review proposed animal experiments at universities have been described as containing an "ethical monoculture," and often fail to represent animal interests fairly; and, unlike humans, animals can't challenge their representatives. Even so, that's not an excuse to deny animals a voice altogether.

There are more conventional implications, too, like supporting further research on animal behavior or accounting for the importance of animal culture when protecting them. A small but growing body of research describes the relationship between animal cognition and ecosystem function; whether and how a forest is logged, for example, influences the personality distribution of the forest's rodents, which in turn may influence their seed-caching habits and ultimately the forest's regeneration. Understanding those dynamics could lead to better management of landscapes and ecosystems. Management plans might even include animal happiness alongside measures of biodiversity and other metrics—a still-distant possibility, to be sure, requiring greater knowledge than now exists, but not inconceivable.

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Whether and how a deeper scientific awareness of animal minds will shape cultural mores and ultimately policies is difficult to predict. Some might find it hard to imagine Americans finding common ground at such a volatile political moment. I take solace in this: In springtime, fields in the countryside outside the city where I live in eastern Maine are dotted with little wooden birdhouses that people put up for house swallows. I know their political views often differ from my own—but the joy of giving those extraordinary creatures a home transcends the politics that divide us.

Brandon Keim *is the author of* Meet the Neighbors: Animal Minds and Life in a More-Than-Human World *(Norton, 2024) and* The Eye of the Sandpiper: Stories from the Living World *(Cornell University Press, 2017).*