

Preface

The inspiration for this book is the enigmatic grizzly bear. A few years back, Charlie Russell and I started talking about bears and what he called "the mess that we humans have gotten bears into." He had read *Elephants on the Edge* and I, *Grizzly Hearts*. Together, we discovered common ground at the intersection of my science with his lifetime of experience. One conversation turned into two, then very quickly, into weekly meetings during which we tossed back and forth our stories, ideas, and frustrations.

We had a lot to talk about because the animal species that we were trying so passionately to save have much in common. Bears, like elephants, were under siege. Bears, like elephants, had lost the land and livelihoods that had sustained them for thousands of years. Bears and elephants were acting un-bear- and un-elephant-like and it did not take any abstract theories to figure out why. Both species had reached a breaking point after centuries of unrelenting human violence. But although bears and elephants have had similar fates, it wasn't easy to convince people of the symmetry.

Elephant PTSD (post-traumatic stress disorder) was obvious. The pieces of the trauma puzzle fit together with tragic ease. People intuitively accept that brutal killing and sexual assaults of rhinoceroses by the gentle giants are symptoms of profound distress. It wasn't normal for the otherwise pacific, family-oriented elephants to show anything but love and compassion for their own species and for others. It made sense that highly sensitive pachyderms would crack under the grief and shock of seeing their families gunned down, ivory tusks ripped off still-breathing bodies. Making the case for grizzlies was not so clear, nor was their plight so readily appreciated.

Unlike the herbivorous elephant, grizzlies are members of the *Carnivora*

order, animals who eat other animals. But this classification is somewhat misleading. In contrast to obligate carnivores, such as pumas, white sharks, and rattlesnakes, grizzlies are largely plant-based eaters who feast on grass, roots, nuts, and berries. The salmon, occasional rodent, and larvae that they consume, while providing a vital infusion of calories necessary to withstand winter hibernation, constitute only a portion of the bears' total diet. Nonetheless, the grizzly is grouped with full-time flesh eaters as a fellow predator.

While it usually implies carnivore, "predator" speaks to another quality that is attributed to grizzlies. Bears, crocodiles, and sharks are considered killers whose prime directive is the use of violence to solve problems, whether those problems concern food, mates, or territory. Most scientists will concede that an African lion pride forms the nucleus of some sort of society, but pumas and grizzlies are viewed as infamous loners more likely to slay each other than to enjoy any alliance. Nor are these species known, as are elephants, for touchy-feely ways with their offspring. Instead, the carnivore image is more like a furred or finned psychopath who not infrequently commits infanticide. Given all this, how could anyone tell if a grizzly exhibited symptoms of PTSD, let alone expect that bears, being agents of bloodshed themselves, would be susceptible to psychological trauma? Right? Wrong.

It didn't take long for Charlie to disabuse popular assumptions of bear unpredictability, unprovoked aggression, and danger in proximity to humans. His seventy-odd years of survival living in the Canadian Rockies and Siberian cold, often literally side by side with grizzlies, belied the myths and rang true with what neuroscience predicts: grizzlies and all other vertebrate species share and exhibit prosocial mental and emotional capacities that are governed by brain structures and processes common to elephants and humans. With Charlie's encouragement, and my belief that an integrated analysis of the science would reconcile conflicting views, I began to investigate the nature of these magical, mystical, supposedly monstrous beasts by approaching their natural histories through a neuropsychological lens.

The marriage of wildlife biology and neuroscience is still new, and for the most part, unconsummated. When there has been a joining of disciplines, such as, for example, the routine use of monkeys in studies of human psychopathology or experiments on elephant reactions to LSD, it has usually

brought a world of hurt to animals. Cats, rats, chimpanzees, pigeons, beagles, rabbits, octopi, planarians, and species from other taxonomic branches in the tree of life have been used as human surrogates in research prohibited for our species, yet denied even commonsense protections that any living being—"surrogate" or not—deserves. While science acknowledges human-nonhuman equivalence in concept (theory) and practice (experimentation), neuroscientific symmetry fails to translate into ethical parity. Furthermore, what has been learned about animal minds in the laboratory has not been incorporated into animal studies in the field.

It took the rash of unprecedented, abnormal behavior of free-living African elephants to break through the conceptual dam that has held back the natural flow of communication between animal and human studies, and to right science's tilting hull with neuroscience's long-standing, species-common model of brain, mind, and consciousness. In the process, and perhaps surprisingly for all, neuroscience has emerged as a champion of animal rights with its declaration that animals have the neuroanatomical wherewithal that enables our own species to think and feel.

Along this intellectual journey will be two intertwined themes: predator natural history and neuropsychology. Each chapter focuses on a particular psychological concept and its neurobiological foundations to explore the minds and experiences of a given predator species or constellation of species with an emphasis on those who hail from North America. The specific animals discussed here do not constitute a comprehensive list; instead they are examples that illustrate how discoveries about the human psyche might be used to deepen our understanding of carnivores and help restore their lives and self-determination. As we make our way through layers of misperceptions, it will become obvious that the most salient feature connecting these widely varying species is that they are all targets of human persecution.

In the way I present the stories and science, I also hope to provide a new pedagogical model, one that reinstates subjective experience as a legitimate source of data in partnership with science's accumulated wisdom. The two are, after all, intrinsically compatible since objectivity is merely a collectively agreed-on subjectivity.

Every chapter is grounded in biology, but much of the validating data is

provided by those whose schooling draws less from books and formulae than from "watching and wondering." Neuroscience and natural history form the backbone of this work, but it is the free-diver, armed with only a single breath, swimming inches from the lightning-fast jaws of a white shark; the woodsman, weaponless, carrying only a poplar staff, walking beside a mother grizzly and cubs; a biologist, welcoming a rattlesnake in joyful, auric embrace; and a man in shorts and hat nursing the wounds of a fourteen-foot American crocodile, who have brought the greatest insights. These trans-species pioneers are courageous not because they interact with powerful animals in the wild, but because they have stayed strong in weathering the judgment of fellow humans, which, even though verbal or symbolic, can prove just as deadly.

Although not trained as psychologists, these individuals intuitively function in this capacity. Their fresh, unbridled methods showcase a pedagogy akin to what Nikolaas Tinbergen called *scientia amabilis*, a philosophy and practice of thoughtful, loving observation that have since been replaced by the grinding machinery of science's post-World War II industrialization and ask-no-questions objectification. In lieu of modern science's "mark of the plural" that depersonalizes its subjects, Linnacus, Tinbergen, and their ilk focused on the individual frog, raven, and stickleback to learn about the species, but did so without drowning them in what essayist Albert Memmi described as "anonymous collectivity," sweeping generalities of "They are this." "They are all the same."¹

This exploration into the lives of carnivores offers two messages. First, if conservation only preserves wildlife numbers and bodies without tending to wildlife minds and societies, then it will fail. If they survive, elephants, grizzly bears, and orcas will exist as mere shells unless their souls are nurtured. The second message hits closer to home. For by vanquishing myths that mask the true identity of carnivores, neuroscience reveals a disconcerting truth: it is not the bear, shark, or crocodile who possesses the villainous qualities of which they are accused, but our own species. The terror does not lie without, but within.

Both of these revelations, taken together, offer us a chance to re-envision wildlife and our identity as a species, and to craft a thriving, more humane

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culture that no longer demands killing as proof of life. In its place, we are free to return to a gentler, ethical way of being in the world, one in which our carnivore kin are given the kind regard and respect that they have shown us all along.