From The Preface to *Gifts of the Crows*

The gifts of the crow are physical, metaphysical and far-reaching. Some... provide understanding and companionship. Others have delivered sparkling glass, plastic toys, and candy hearts to their human benefactors. Some have dropped from the sky and shocked strangers by saying, "Hello." A raven, with its natural curiosity and conspicuous manner, can lead a hunter to game or alert a search party to the whereabouts of an injured person. A magpie or jay can brighten a cold day by pecking softly at a window to beg for its daily ration of food.

These birds are corvids, members of the avian family Corvidae, which includes nutcrackers, jays, ravens, magpies, and crows. We will consider many of the gifts with which corvids enrich the lives of people and the action of nature in the chapters ahead, and we will argue that a corvid's ability to quickly and accurately infer causation is itself a natural gift. It has survival value. This and other demonstrations of its mental prowess are gifts that all birds—and mostly likely their dinosaur ancestors—gained through evolution.

Crows' close association with humans has inspired art, language, legends, and myths. Corvids have their own form of eloquence as they exercise mischief, playfulness, and passion. They also lead us to reflect on their common behaviors with us and other sentient creatures and empower us with a deeper understanding of nature.

People from all walks of life eagerly recount the antics of their former pet crows or enthusiastically tell us authors about the fascinating, sometimes troubling behaviors perpetrated by their local jays, magpies, and ravens.

In this book we celebrate their accounts along with others we have found in the scientific and popular literature, because these rare and exceptional behaviors cannot be limited to the few specialized researchers who study corvids.

Some scientists are dismissive of citizens' reports, viewing them as unreliable or unexplainable, because of laypeople's lack of formal training, lack of documentation, overinterpretation, and uncontrolled influences. To be sure, we have encountered descriptions of events laden with hyperbole and seasoned with more imagination than fact, but we were compelled to investigate them nonetheless and to interview the people who made the observations in order to verify the events. Taken individually, such stores are anecdotal, but collectively they provide a unique body of information that stimulates scientific exploration and becomes an assemblage of possibilities.

We draw from this cross-cultural collection to offer many intriguing stories about corvids' fascinating behaviors as we explore the anatomy and

Crows (detail), early 17th century, pair of six-panel folding screens, ink and gold on paper, 61 9/16 × 139 5/16 in. (156.3 × 353.8 cm). Seattle Art Museum, Eugene Fuller Memorial Collection (36.21.2).

physiology of the bird brain. We have tested these anecdotes, such as those of the crow that summoned dogs or the ravens that windsurfed. Putting them through the scientific process, we evaluated each report for believability, precedence in the scientific and cultural literature, and the mental ability a bird would need to act in such a manner. We came to know the bird and the citizen scientist behind the observation as we examined as completely as possible what causes people and birds to share such poignant moments.

We recognize the intelligence and adaptability of this unique group of birds and base every thesis about their humanlike behaviors on how the brain of a bird is known to function. Through brain-scanning technology, which allows us to see within the crow's gray matter, we first glimpse how a crow's brain works through a problem. To date, most of the understanding of the inner working of the crow brain was derived from what was known from a few mammals and detailed investigations of song-learning in birds. We hope you will find, as we have, that understanding some of the neurobiological processes of crows adds mightily to your appreciation of how these remarkable creatures operate so successfully in our dynamic world.

From Chapter 1: Amazing Feats and Deep Connections

Most people consider birds to be instinctual automatons acting out behaviors long ago scripted in their genes, but *Gifts of the Crow* celebrates the fact that some birds—particularly those in the corvid family, which we generally call "crows"—are anything but mindless or robotic. These animals are exceptionally smart. Not only do they make tools, but they understand cause and effect. They use their wisdom to infer, discriminate, test, learn, remember, foresee, mourn, warn of impending doom, recognize people, seek revenge, lure or stampede other birds to their death, quaff coffee and beer, turn on lights to stay warm or expose danger, speak, steal, deceive, gift, windsurf, play with cats, and team up to satisfy their appetite for diverse foods whether soft cheese from a can or a meal of dead seal. You can think of these birds as having mental tool kits on a par with our closest relatives, the monkeys and apes. Like humans, they possess complex cognitive abilities. In fact, they have been called "feathered apes."

Marzuluff, John and Tony Angell. Excerpts from *Gifts of the Crows: How Perception, Emotion, and Thought Allow Smart Birds to Behave Like Humans*, xii–xiii; 2. New York: Atria Paperback, 2013.