



DOGS THAT KNOW WHEN THEIR OWNERS ARE COMING HOME

And Other
Unexplained
Powers of
Animals

FULLY UPDATED AND REVISED

RUPERT SHELDRAKE

ALSO BY RUPERT SHELDRAKE

Morphic Resonance
A New Science of Life
The Presence of the Past
The Rebirth of Nature
The Sense of Being Stared At
Seven Experiments That Could Change the World

WITH RALPH ABRAHAM AND TERENCE MCKENNA

The Evolutionary Mind
Dialogues at the Edge of the West

WITH MATTHEW FOX

Natural Grace
The Physics of Angels

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With thanks to all the animals from whom I have learned.

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About the Author

This is a book of recognition—a recognition that animals have abilities that we have lost. One part of ourselves has forgotten this; another part has known it all along.

As a child, like many other children, I was interested in animals and plants. My family kept a great variety of pets. In addition to our dog, Scamp, we had a rabbit, hamster, pigeons, a jackdaw, a budgerigar, a terrapin, two tortoises, several goldfish, and tadpoles and caterpillars I would rear each spring. My father, Reginald Sheldrake, a pharmacist and amateur microscopist, encouraged my interests and fueled my fascination with the natural world when he showed me how drops of pond water teemed with myriad forms of life, and what the scales on butterflies' wings looked like.

I was especially intrigued by the way that pigeons homed. On Saturday mornings my father took me to see a great liberation of them. At our local railway station at Newark-on-Trent, in the English Midlands, racing birds from all over Britain were waiting in wicker baskets arrayed in stacks. At the appointed time, the porters let me help them open the flaps. Out burst hundreds of pigeons in a great commotion of wind and feathers. They flew up into the sky, circled around, and set off in various directions toward their faraway homes. How do they do it? I wondered. No one seemed to know. Their homing ability is still unexplained today.

At school it was a natural choice for me to study biology and other sciences, and I continued my scientific education at Cambridge University, where I studied botany, physiology, chemistry, and biochemistry as an undergraduate, and then took a Ph.D. in biochemistry. But as I proceeded in my education as a biologist, a great gulf began to open up between my own experience of animals and plants and the scientific approach that I was being taught.

The mechanistic theory of life, still the dominant orthodoxy, asserts that living organisms are nothing but complex genetically programmed machines. They are supposed to be inanimate, literally soulless. As a general rule, the first step we took when studying living organisms was to kill them or cut them up. I spent many hours of laboratory work in dissection, and then as my studies proceeded, in vivisection. For example, it was an essential part of my biology curriculum to dissect nerves from the severed legs of frogs and stimulate them electrically to make the muscles twitch. For the study of enzymes in rat liver, one of the favored tissues in animal biochemistry, we first had to decapitate the living rats, the blood spurting down the laboratory sink. I heard nothing about how pigeons homed.

A love of animals had led me to study biology, and this was where it had taken me wrong. Something had gone wrong. I began to wonder what was going on, and tried to find out. After my undergraduate studies at Cambridge, I was awarded a Frank Knox Fellowship at Harvard where I studied philosophy and the history of science, in search of a wider perspective. I then returned to Cambridge to begin research on plants.

For ten years I did research at Cambridge in developmental biology, while continuing to think about the outlines of a more holistic science. I became a Fellow of Clare College at Cambridge, where I was Director of Studies in biochemistry and cell biology. While working

in Cambridge, I was elected a Research Fellow of the Royal Society; and under the auspices of the Royal Society I did research at the University of Malaya on rain-forest plants. I later became Principal Plant Physiologist at ICRISAT, the International Crops Research Institute for the Semi-Arid Tropics, in Hyderabad, India, helping to improve the growth and yield of crops that are a vital part of the diet of hundreds of millions of people.

I have spent more than forty years as a professional scientist, publishing papers in scientific journals and speaking in scientific congresses, and have long been a member of scientific societies, such as the Society for Experimental Biology, and a Fellow of the Zoological Society. I am a great believer in the value of scientific inquiry, but I am more convinced than ever that the mechanistic theory of nature is too narrow. I have discovered that an increasing number of my scientific colleagues agree, although most are reluctant to say so in public. I have found that the split I experienced within myself, the gulf between personal experience of life and the theory that living organisms, including ourselves, are merely soulless automata, is widespread within and outside the scientific community.

I have come to realize that this split is not inevitable, and that a more inclusive kind of science is possible, as well as cheaper. But it is inevitably controversial. For some scientists the mechanistic theory of nature is not just a testable hypothesis, but more like a religious creed. For others, open-minded inquiry is more important than the defense of long-entrenched dogmas. I have found such scientists a great help in my researches, and have received much encouragement and practical support.

In 1994 I published a book called *Seven Experiments That Could Change the World*¹ in which I explored seven well-known but little understood phenomena, and suggested how inexpensive research could lead to major breakthroughs. One of these experiments concerned the possible telepathic abilities of dogs and cats. In particular, I focused on the ability of some dogs to know when their owners are coming home.

Thus through trying to find ways in which a broader view of life can be developed scientifically, I have come back to pets. It took me a long time to recognize that they are the animals we know best. I knew this as a child. To many people it is blindingly obvious, but for me it had all the force of a new discovery. I realized that the animals we know best have much to teach us. They can help enlarge our understanding of life; they are not just cute, cuddly, comforting, and fun.

For five years before the first edition of this book was published in 1999 I researched the perceptiveness of pets, with the help of more than two thousand animal owners and trainers. I surveyed more than a thousand randomly chosen pet owners to find out how common various kinds of unexplained behavior are. My associates and I interviewed hundreds of people with much experience of animals, including dog trainers, search-and-rescue dog handlers, police dog handlers, blind people with guide dogs, veterinarians, kennel and stable proprietors, horse trainers and riders, farmers, shepherds, zookeepers, pet shop proprietors, reptile breeders, and pet owners.

If I had quoted from all of the accounts and interviews that I have been given, this book would have been at least ten times thicker. In some instances hundreds of people have told me about very similar patterns of behavior in their pets, like dogs knowing when their owners are coming home. I have had to condense this information, giving only a few examples of each kind of perceptive behavior. Although many people have contributed to the

overall picture, I can acknowledge only a small minority by name. Without all this help from people named and unnamed, this book could not have been written. I am indebted to all those who have helped me, and to their animals.

Since the first edition of this book was published I have received more than 1,500 further reports about perceptive behavior by animals, and my database now contains more than 4,500 case histories. I have included some of them in this new edition. I have updated the text throughout and included summaries of recent scientific research on animal domestication, animal navigation, and other relevant subjects. I have also included the results of new experimental studies I have carried out with dogs and other animals, the most notable being a study with a language-using parrot, N'kisi, which showed that this amazing bird responded to his owner's thoughts at a distance and actually said what she was thinking. I also summarize some of my recent research on human telepathy, especially in connection with telephone calls. There is a fuller discussion of my research on unexplained human abilities in my book *The Sense of Being Stared At* (2003).

Although many people have personally experienced the phenomena I discuss, within institutional science there is a taboo against research on telepathy and other unexplained abilities, and organized skeptical groups see it as their mission to debunk any claims of the paranormal. As a result of my research, I have repeatedly come into conflict with representatives of these organizations and with professional media skeptics. In the [Appendix](#) I summarize the main controversies in which I have been engaged. Again and again, I have found that most of my skeptical opponents are not only ignorant of the evidence but also do not want to know about it. Their minds are closed. But, as I argue in this book, science is not a dogmatic belief system but a method of inquiry. Only by investigating what we do not understand can we learn more.

This research project was initially funded by the late Ben Webster of Toronto, Canada, and has been much helped by grants from the Lifebridge Foundation in New York; the Institute of Noetic Sciences in Sausalito, California; Evelyn Hancock of Old Greenwich, Connecticut; the Ross Institute of New York; the Bial Foundation in Portugal; the Watson Family Foundation; Addison Fischer of Naples, Florida; the Planet Heritage Foundation; and the Perrott-Warrior Fund, administered by Trinity College, Cambridge University. I have also had the benefit of organizational support in the United States from the Institute of Noetic Sciences, in the German-speaking countries from the Schweisfurth Foundation in Munich, and in Britain from the Scientific and Medical Network. I am very grateful for all this generosity and encouragement.

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Finally, I am grateful to Phil Starling for his permission to reproduce the photographs in [Figures 2.1, 4.1, and 8.1](#); to Gary Taylor for [Figure 2.2](#); and to Sydney King for doing the drawings and diagrams.

London, February 2011

When the telephone rings in the household of a noted professor at the University of California in Berkeley, his wife knows when her husband is on the other end of the line. How? Whiskins, the family's silver tabby cat rushes to the telephone and paws at the receiver. "Many times he succeeds in taking it off the hook and making appreciative meows that are clearly audible to my husband at the other end," she says. "When someone else telephones, Whiskins takes no notice."

Kate Laufer, a midwife and social worker in Solbergmoen, Norway, works at odd hours and returns home at unexpected times, but whenever her husband, Walter, is home, he greets her with a hot cup of freshly brewed tea. What accounts for her husband's uncanny timing? The family dog, Tiki the terrier. "When Tiki rushes to the window and stands on the windowsill, I know my wife is on her way home," says Walter Laufer, "I know that my wife is on her way home."

Julia Orr thought her horses had settled happily into their new paddock when she moved from Skirmett, Buckinghamshire, to a farm nine miles away. But Badger, a twenty-four-year-old Welsh Cob, and twenty-two-year-old Tango were merely biding their time. One night several weeks later, when a storm blew open the gate of their field, they took their chance. At dawn they were waiting patiently at the gate of Mrs. Orr's old home. They had found their own way back on unfamiliar roads and tracks, leaving telltale hoofprints on the shoulder of the road and in flower beds as they went.

On October 17, 1989, Tirzah Meek of Santa Cruz, California, saw her cat run up into the attic and hide, which she had never done before. She seemed terrified and refused to come down. Three hours later, the Loma Prieta earthquake struck, devastating the center of Santa Cruz.

Dogs that know when their owners are returning home, cats that answer the telephone when a person they are attached to is calling, horses that can find their way home over unfamiliar terrain, cats that anticipate earthquakes—these aspects of animal behavior suggest the existence of forms of perceptiveness that lie beyond present-day scientific understanding.

Through fifteen years of extensive research on the unexplained powers of animals, I have come to the conclusion that many of the stories told by pet owners are well founded. Some animals really do seem to have powers of perception that go beyond the known senses.

There is nothing new about the uncanny abilities of animals. People have noticed them for centuries. Millions of pet owners today have experienced them personally. But at the same time, many people feel they have to deny these abilities or trivialize them. They are ignored by institutional science. Pets are the animals we know best, but their most surprising and intriguing behavior is treated as of no real interest. Why should this be so?

One reason is a taboo against taking pets seriously.¹ This taboo is not confined to scientists but is a result of the split attitudes to animals expressed in our society as a whole. During working hours we commit ourselves to economic progress fueled by science and technology and based on the mechanistic view of life. This view, dating back to the scientific revolution of the seventeenth century, derives from René Descartes' theory of the universe as a machine. Though the metaphors have changed (from the brain as hydraulic machine in Descartes' time

to a telephone exchange a generation ago, to a computer today), life is still thought of in terms of machinery.² Animals and plants are seen as genetically programmed automata, and the exploitation of animals is taken for granted.

Meanwhile, back at home, we have our pets. Pets are in a different category from other animals. Pet-keeping is confined to the private, or subjective, realm. Experiences with pets have to be kept out of the real, or objective, world. There is a huge gulf between companion animals, treated as members of our families, and animals in factory farms and research laboratories. Our relationships with our pets are based on different sets of attitudes, on I-thou relationships rather than the I-it approach encouraged by science.

Whether in the laboratory or in the field, scientific investigators typically try to avoid emotional connections with the animals they are investigating. They aspire to a detached objectivity. They would therefore be unlikely to encounter the kinds of behavior that depend on the close attachment between animals and people. In this realm, animal trainers and pet owners are generally far more knowledgeable and experienced than professional researchers on animal behavior—unless they happen to be pet owners themselves.

The taboo against taking pets seriously is only one reason why the phenomena I discuss in this book have been neglected by institutional science. Another is the taboo against taking psychic, or paranormal, phenomena seriously. These phenomena are not rare or exceptional; some are very common. They are called paranormal—meaning “beyond the normal”—because they cannot be explained in conventional scientific terms; they do not fit in with the mechanistic theory of nature.

Research with pets

The wealth of experience of animals among horse and dog trainers, veterinarians, and pet owners is generally dismissed as anecdotal. This happens so often that I looked up the origin of this word to find out what it means. It comes from the Greek root *anekdotos*, meaning “not published.” An anecdote is an unpublished story.

Some fields of research—for example, medicine—rely heavily on anecdotes, but when they are published they literally cease to be anecdotes; they are promoted to the rank of case histories.

In the research described in this book, I have used three complementary approaches. First, I and my associates and I have interviewed hundreds of people who are experienced in dealing with animals, including dog trainers, veterinarians, blind people with guide dogs, zookeepers, kennel proprietors, and people who work with horses. I have also appealed through special-interest magazines and through the general media and the Internet for information from pet owners and have collected more than 4,500 accounts of specific kinds of animal behavior that suggest unusual perceptiveness. I have found that many people have had very similar experiences with their animals. And when so many people’s accounts point independently to consistent and repeatable patterns, anecdotes are transformed into natural history. At the very least, this is a natural history of what people *believe* about their animals.

Second, I have organized formal surveys in Britain and the United States involving random samples of households in order to quantify the frequency of the various kinds of perceptiveness shown by companion animals.

Third, I have explored the question of whether people's beliefs about their animals are well-founded or not by means of experimental investigations.

One of my favorite books in biology is *The Variation of Animals and Plants under Domestication* by Charles Darwin, first published in 1868. It is full of information that Darwin collected from naturalists, explorers, colonial administrators, missionaries, and others with whom he corresponded all over the world. He studied publications like *Poultry Chronicle* and the *Gooseberry Grower's Register*. He grew fifty-four varieties of gooseberry. He drew on the experience of cat and rabbit fanciers, horse and dog breeders, beekeepers, farmers, horticulturalists, and other people experienced with animals and plants. He joined two of the London pigeon clubs, kept all the breeds he could procure, and visited leading fanciers to see their birds.

The effects of selective breeding in domesticated animals and plants, observed with such attention by practical men and women, gave Darwin his strongest evidence for the power of selection, an essential ingredient in his theory of evolution by natural selection.

Since the time of Darwin, science has increasingly cut itself off from the rich experience of people who are not professional scientists. There are still millions with practical experience of pigeons, dogs, cats, horses, parrots, bees, and other animals, and of apple trees, roses, orchids, beans, asparagus, and other plants. There are still tens of thousands of amateur naturalists. But scientific research is now almost entirely confined to universities and research institutes and carried out by professionals with Ph.D.'s. This exclusivity has seriously impoverished modern biology.

Why hasn't this research been done before?

The investigation of the unexplained powers of animals that I describe in this book has been facilitated by modern technical devices such as computers and video cameras, but in principle most of these investigations could have been carried out a hundred or more years ago. The fact that they are only now beginning is a tribute to the strength of the taboos against such inquiries.

I believe there is much to be gained by ignoring these taboos. I also believe there is much to be gained by following a scientific approach. This is the approach I have followed myself and which I summarize in this book. But the word "scientific" can have quite different meanings. All too often it is equated with a narrow-minded dogmatism that seeks to deny or debunk whatever does not fit in with the mechanistic view of the world. By contrast, I take "scientific" to mean a method of open-minded inquiry, paying attention to evidence and testing possible explanations by means of experiment. The path of investigation is more in the spirit of science than the path of denial. And it is certainly more fun.

These different scientific attitudes are illustrated by the tale of a horse called Clever Hans, which is usually used to justify the dismissal of seemingly unexplained animal powers. I draw the opposite moral from the story and see it as an example of the need to investigate rather than deny unexplained phenomena. Sooner or later anyone who takes an interest in the unexplained power of animals will be told the story of Clever Hans. This story has assumed the role of a cautionary tale for scientists.

The tale of Clever Hans

In Berlin at the beginning of the twentieth century there was a horse named Hans, who was said to be able to perform mathematical calculations, read German, and spell out German words. He tapped out answers with his hoof. His trainer, Herr von Osten, a former mathematics teacher, was convinced that Hans had mental capacities thought to be confined to human beings. The horse caused a sensation, and gave many demonstrations for professors, military officers, and others.

Clever Hans's abilities were investigated by Professor C. Stumpf, director of the Psychological Institute of the University of Berlin, and his assistant, Otto Pfungst. They found that the horse could give the correct answers only when the questioner knew the answer himself and when Hans could see the questioner. They concluded that Hans had no mathematical abilities and he could not read German. Instead, he was reading small body movements of the questioner, and these told him when he had tapped with his hoof the right number of times.

This tale of Clever Hans has been used ever since to justify the dismissal of unexplained abilities of animals, attributing them to subtle cues rather than to any mysterious powers the animal might have. In short, this story has been used to inhibit research, to prevent inquiry rather than to stimulate it. But to draw this moral from the tale of Clever Hans does not do justice to the investigations of Stumpf and Pfungst. They investigated a controversial claim rather than dismissing it, and they were brave to do so, because their conclusions were against the beliefs of many of their colleagues.

Clever Hans's abilities were controversial not because they were supposed to involve psychic powers but rather because they were supposed to show that animals could think. Many scientists, especially Darwinians, were happy to believe that Clever Hans really could do arithmetic and understand German. They liked the idea that animals were capable of rational thought because this undermined the conventional belief that the human intellect was unique. They preferred the idea of gradual evolution, of differences of degree rather than differences of kind between humans and nonhuman animals.

Conversely, traditionalists were very skeptical about Clever Hans because they thought that higher mental faculties were confined to man. Stumpf and Pfungst's findings supported the traditionalists and were unpopular with "disappointed Darwinians who expressed fear lest ecclesiastical and reactionary points of view should derive favorable material from their conclusions."³

Although biologists sometimes talk about the "Clever Hans effect" as if it were a reason for dismissing any unexplained abilities in animals, the effect is quite specific. It depends on body language, which in horses is an important element in their communication with one another as it is in many other species. If an animal can respond to a human being when that person is out of sight, this is not an example of the Clever Hans effect, but requires some other explanation.

In the course of research on the unexplained powers of domestic animals, I have found that most animal trainers and pet owners are well aware of the importance of body language. But in any case, many of the phenomena I discuss here, such as the apparent ability of animals to know when their owners are coming home, cannot be explained in terms of the Clever Hans effect. An animal cannot read the body language of a person many miles away.

Three kinds of unexplained perceptiveness

In this book I discuss three major categories of unexplained perceptiveness by animals: telepathy, the sense of direction, and premonitions.

Telepathy. I start with the ability of some dogs and other animals to know when their owners are coming home. In many cases an animal's anticipation of a person's return cannot be explained in terms of routine, clues from people at home, or the sound of a familiar car approaching. In videotaped experiments, dogs can still anticipate their owners' return at randomly chosen times, even when the owners are traveling by taxi or some other unfamiliar vehicle. Somehow people telepathically communicate their intention to return home.

Some companion animals also respond telepathically to a variety of other human intentions and react to silent calls and commands. Some know when a particular person is on the telephone. Some react when their owner is in distress or dying in a distant place.

I suggest that telepathic communication depends on bonds between people and animals—bonds that are not mere metaphors but actual connections. They are connected through fields called morphic fields. I introduce these fields in [Chapter 1](#), in which I also discuss the evolution of the bonds between humans and animals.

The sense of direction. Homing pigeons can find their way back to their cote over hundreds of miles of unfamiliar terrain. Migrating European swallows travel thousands of miles to their feeding grounds in Africa and, in the spring, return to their native place, even to the very same building where they nested before. Their ability to navigate toward distant destinations is still unexplained and cannot be accounted for in terms of smell or any of the other known senses, or even a compass sense.

Some dogs, cats, horses, and other domesticated animals also have a good sense of direction and find their way home from unfamiliar places many miles away. Animals seem to be drawn toward their desired destination as if by an invisible elastic band that attaches them to that place. These connections may be explained in terms of morphic fields.

Sometimes animals return not to places but to people. Some dog owners who have gone away and left their pets behind are found by the animal in distant places the animal has never been to before. Tracking the person by smell may explain some cases when the distances are short, but in others the only feasible explanation seems to be an invisible connection between the animals and the people to whom they are bonded. Again, this could be compared to a stretched elastic band, which I attribute to the morphic field linking animal to owner.

Premonitions. Some premonitions may be explicable in terms of physical stimuli—animals that become disturbed before earthquakes, for example, may be reacting to subtle electric changes. Dogs that alert their epileptic owners to an impending fit may notice subtle muscular tremors or unusual odors. But other premonitions seem to result from a mysterious foresight that challenges our assumptions about the separation of past, present, and future.

Telepathy, the sense of direction, and precognition are examples of what some people call extrasensory perception, or ESP. Others attribute them to a sixth or seventh sense. Others call

them paranormal. Still others call them psychic. All these terms point beyond the limits of established science.

“Extrasensory perception” literally means perception beyond or outside the senses. At first sight the term “sixth sense” appears to mean the opposite because it implies a perceptiveness within the senses, although by another kind of sense not yet recognized by science. The conflict vanishes if “extrasensory” is taken to mean “outside the *known* senses.”

Neither the term “extrasensory perception” nor the term “sixth sense” suggests what the experiences are or how they work. The terms merely tell us what the events are not: they are not explicable in terms of the known senses.

All three types of perceptiveness—telepathy, the sense of direction, and premonitions—seem better developed in nonhuman species than they are in people, but they do occur in the human realm too. Human psychic powers seem more natural, more biological, when they are seen in the light of animal behavior. Much that appears to be paranormal at present looks normal when we expand our notion of normality.

Science can advance only by going beyond its current limits. In this book I hope to show that it is possible to investigate animals’ unexplained abilities scientifically in ways that are neither invasive nor cruel. I also suggest a variety of ways in which animal owners and students could make major contributions to this new field of inquiry.

We have a great deal to learn from our companion animals. They have much to teach us about animal nature—and about our own.

Part I

HUMAN-ANIMAL
BONDS

The Domestication of Animals

Many people love their pets and are loved by them. In this chapter I explore the evolution and the nature of human-animal bonds.

But first it is important to recognize that emotional bonds between people and animals are the exception rather than the rule. For every well-loved cat or dog, hundreds of domesticated animals are confined to barren environments in intensive farming systems and research laboratories. In many Third World countries beasts of burden are often treated brutally. And traditional societies are not usually subscribers to modern ideals of animal welfare. Eskimos, for example, tend to treat their huskies harshly.

But in spite of all this exploitation, abuse, and neglect, many people form bonds with animals from childhood onward. Young children are commonly given teddy bears or other toy animals, and they like hearing stories about animals. Above all, most like keeping actual animals. The majority of pets live in households with children.¹

Hearing tales about frightening animals, including the wolf in “Little Red Riding Hood” and forming relationships with friendly ones seems to be a normal and fundamental aspect of human nature. Indeed our nature has been shaped throughout its evolutionary history by our interactions with animals, and all human cultures are enriched by songs, dances, rituals, myths, and stories about them.

The evolution of human-animal bonds

The earliest named hominid species, known from fossil remains, are *Australopithecus ramidus* and *Australopithecus anamensis*, dating back over 4 million years. The first stone tools were used about 2½ million years ago, and signs of meat eating appear about a million years later around the time that *Homo erectus* spread out of Africa into Eurasia (Figure 1.1). The use of fire may have begun around 700,000 years ago. Modern humans originated in Africa about 150,000 years ago. The first cave paintings, including many of animals, appeared about 30,000 years ago. The agricultural revolution began about 10,000 years ago, and the first civilizations and written scripts about 5,000 years ago.²

Our ancestors lived as gatherers and hunters, with gathering far more important than hunting. The old image of man the hunter striding confidently out onto the African veldt is myth. Only a small proportion of the food eaten by today’s hunter-gatherers comes from animals hunted by the men; most comes from gathering done mainly by women. The exceptions are the hunter-gatherers of the plant-poor Arctic regions.³ Hominids and early *Homo sapiens* obtained small amounts of meat more by scavenging the kills left by more effective predators like big cats than by hunting for themselves.⁴ Big game hunting, as opposed to scavenging, may date back only some 70,000 to 90,000 years.

In hunter-gatherer cultures, human beings do not see themselves as separate from other animals but as intimately interconnected.⁵ The specialists in communication with the

nonhuman world are shamans, and through their guardian spirits or power animals, shamans connect themselves with the powers of animals. There is a mysterious solidarity between people and animals. Shamans experience themselves as being guided by animals or as changing into animals, understanding their language, and sharing in their prescience and occult powers.⁶

The earliest domesticated dogs

The first animals to be domesticated were dogs. Their ancestors, wolves, hunted in packs, just as men hunted, and from an early stage dogs were used in hunting as well as for guarding human settlements. Their domestication predated the development of agriculture,⁷ and dogs were the only animals to be domesticated before people adopted a settled way of life.⁸

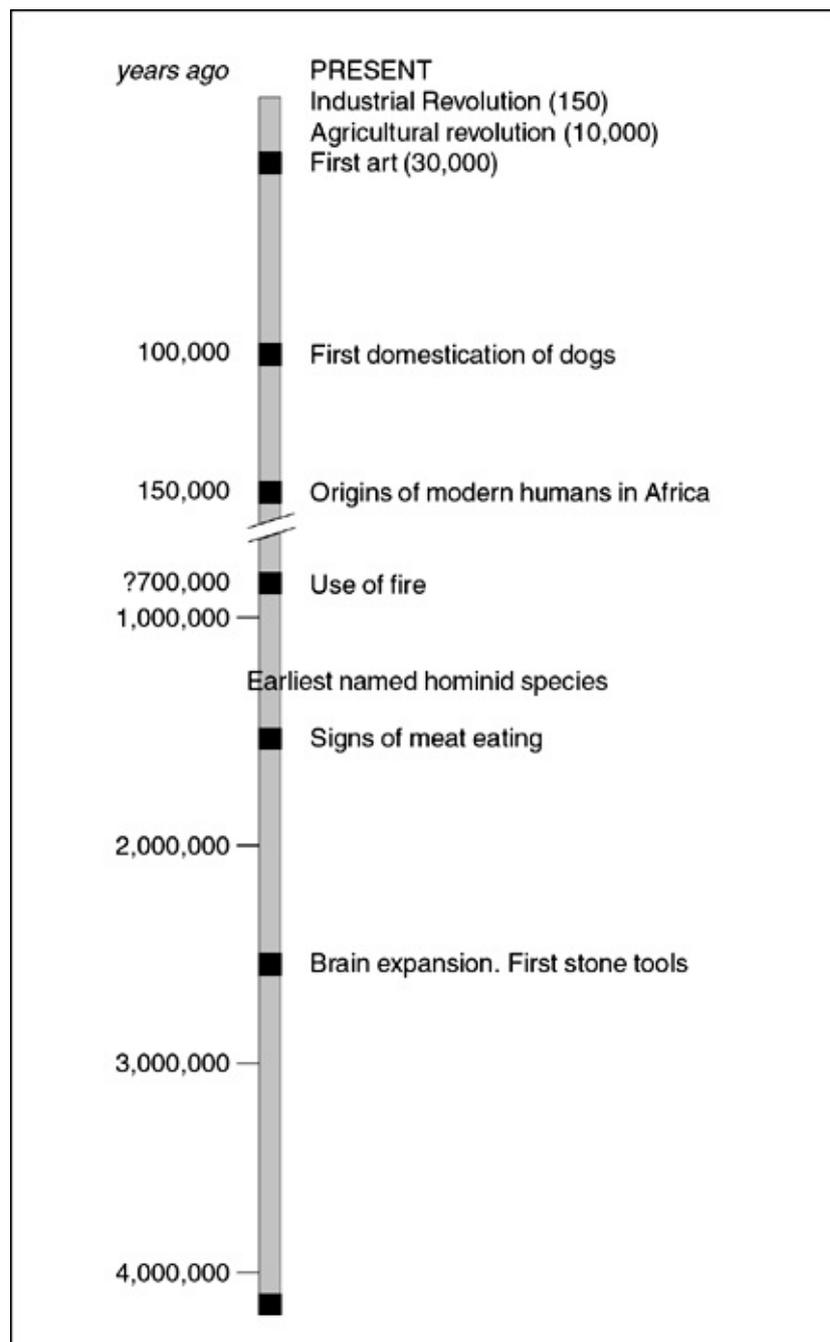


Figure 1.1 A time line of human evolution.

No one knows when the first domestication of wolves occurred. Some evidence from the study of DNA in dogs and wolves points to a date for the first transformation of wolf to dog more than 100,000 years ago. This DNA evidence also suggests that wolves were domesticated several times, not just once, and that dogs have continued to crossbreed with wild wolves.⁹ If this theory is confirmed, it means that our ancient companionship with dogs may have played an important part in human evolution. Dogs could have played a major role in the advances in human hunting techniques that occurred some 70,000 to 90,000 years ago.

The Australian veterinarian David Paxton goes so far as to suggest that people did not so much domesticate wolves as wolves domesticated people. Wolves may have started living around the periphery of human settlements as a kind of infestation. Some learned to live with human beings in a mutually helpful way and gradually evolved into dogs. At the very least they would have protected human settlements, and given warnings by barking at anything approaching.¹⁰

In 2009 an international team of scientists announced that they had identified the earliest archaeological evidence of a dog in the Goyet cave in Belgium, dating back 31,700 years ago. It probably resembled a Siberian Husky but was somewhat larger, and it subsisted on a diet of horse, musk ox, and reindeer.¹¹ Other Paleolithic remains of dogs have been found in Russia and the Ukraine, where they may well have been used for the tracking, hunting, and transport of large game animals. Still other early archaeological evidence, a track of footprints from a large dog walking with a child, was found in the deepest part of the Chauvet cave in France. Soot on the roof of the cave, from the torch the child was carrying, has been dated to 26,000 years ago.

The wolves that evolved into dogs have been enormously successful in evolutionary terms. They are found everywhere in the inhabited world, hundreds of millions of them. The descendants of the wolves that remained wolves are now sparsely distributed, often in endangered populations.

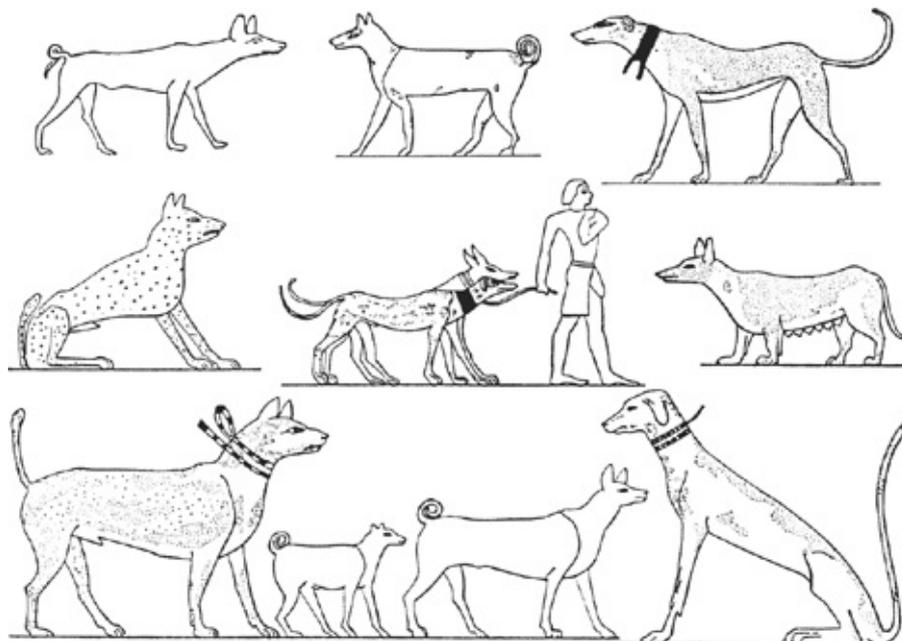


Figure 1.2 Breeds of Egyptian dogs, from the tombs at Beni Hassan (2200–2000 B.C.) (after Ash, 1927).

The domestication of dogs long predated the domestication of other animals. Indeed dogs may have played an essential part in the domestication of other species, both through the ability to herd animals such as sheep and also by helping to protect flocks against predators.

Some breeds of dogs are very old. By the time of ancient Egypt, there were already several distinct breeds: dogs of the Greyhound or Saluki type, a Mastiff type, a Basenji type, a Pointer type, and a small terrier-like Maltese type (Figure 1.2).¹² Dogs were venerated in ancient Egypt. Some were even embalmed, and in every town a graveyard was devoted entirely to dog burials. The god of the dead was the dog- or jackal-headed Anubis.

In today's world, there are great variations from culture to culture in the way dogs are treated. In the Arab world, they are generally abhorred, partly because of large populations of stray or feral dogs, a source of dangerous diseases such as rabies. Even so, individual hunting dogs are admired and pampered. In other places, as in parts of China, Burma, Indonesia, and Polynesia, dogs are slaughtered for human food and are not usually well regarded.¹³ But in most cultures, especially where dogs are used for hunting or herding, and kept for no utilitarian reason, they are generally treated affectionately.¹⁴

Although the domestication of dogs happened so long ago that we will never know the details, a twentieth-century study in Russia with silver foxes showed that quite rapid change can occur under conditions of selective breeding. From the 1950s onward, tame foxes were selected as the parents of the next generation, and after forty generations, the Russians succeeded in producing a breed of silver foxes that are docile, friendly, and as skilled as dogs in communicating with people.¹⁵ The tame foxes also look different from their wild ancestors, with broader heads and juvenile characteristics.¹⁶ Some of these animals are now being sold as pets.

The domestication of other species

Francis Galton, Charles Darwin's cousin, was a pioneer of modern thinking about domestication. He pointed out that relatively few species are suitable. Species capable of being domesticated have to meet certain conditions: They should be hardy and able to survive with little care and attention. They should have an inherent fondness for humans. They should be comfort-loving and useful. They should breed freely, and they should be gregarious and hence easy to control in groups.

Sheep, goats, cattle, horses, pigs, hens, ducks, and geese all meet these criteria. Other species, such as deer and zebras, although gregarious, do not, and despite many attempts at domestication they remain too wild to manage with ease.¹⁷

Cats are the only domesticated animals that are not gregarious, but because of their territorial and comfort-loving nature, they form symbiotic relationships with people while preserving something of their independence as solitary hunters. They revert with relative ease to a free-living, feral existence.¹⁸

Cats were domesticated much more recently than dogs, probably no more than 10,000 years ago. The oldest archaeological evidence of cats comes from Crete, about 9,500 years ago, and cat remains from Jericho have also been dated to 8,700 years ago.¹⁹ The first records of cats are from ancient Egypt, where they were treated as sacred, and it was forbidden to kill them. Some 3,600 years ago, house cats were depicted in Egyptian tombs.

paintings. They were mummified in such enormous numbers that at the beginning of the twentieth century cat mummies were excavated by the ton, ground up, and sold as fertilizer.²⁰

Horses were also domesticated relatively recently, probably about 5,000 years ago in the region around Turkestan. They may first have been used as draft animals. The first record of a horse being ridden is from Egypt, around 1500 B.C.²¹ Horses soon became important in war and in hunting, where they were more like comrades than slaves.

In early civilizations, although domesticated animals were exploited for human use, there was still a pervasive sense of human-animal connectedness. Many animals were regarded as sacred, just as cows, elephants, and monkeys still are in India today. Many of the gods and goddesses were believed to take on animal forms or to have animal helpers.

At first sight, there is little trace of this solidarity with the animal kingdom in industrial societies. Beasts of burden have been replaced by machines; horses, donkeys, mules, and bullocks are no longer our daily companions. The peasant's intimate familiarity with animals has been replaced by modern agribusiness, with animals kept on factory farms and in industrial-scale feed lots.

Nevertheless, in our private lives, the ancient affinity with other animals remains. There are many bird-watchers, naturalists, and amateur wildlife photographers. Wildlife films are perennial favorites on television, as are stories about animals, especially about dogs like Lassie²² and the Austrian detective dog, Kommisar Rex. But it is principally and most intimately through the keeping of pets that these bonds are maintained. Even though most people in modern cities no longer need cats for mousing or dogs for herding or hunting, there are still animals kept in the millions, together with a host of other creatures that play no utilitarian role: ponies, parrots, budgerigars, rabbits, guinea pigs, gerbils, hamsters, goldfish, lizards, stick insects, and many other pets.

Most of us seem to need animals as part of our lives; our human nature is bound up with animal nature. Isolated from it, we are diminished. We lose a part of our heritage.

The keeping of pets

All over the world people keep pets. As Francis Galton noted in 1865: "It is a fact familiar to all travelers that savages frequently capture young animals of various kinds, and rear them as favorites, and sell or present them as curiosities."²³

Galton suggested that the principal way in which many species were first tamed was through this kind of pet-keeping, together with the keeping of sacred animals and the maintaining of menageries by chiefs and kings. In some cases, these animals became domesticated if they met the necessary criteria (summarized on [this page](#)). I like Galton's suggestion that pet-keeping preceded domestication, and I find it very plausible. And since wolves first became camp followers and then evolved into dogs, Galton's theory suggests a simple way in which this process could have been speeded up, through people adopting cubs or puppies as pets.

In ancient Egypt and many other parts of the world, in addition to the larger dogs used for hunting, guarding, and herding, there were smaller breeds that seem to have lived in houses as pets. Ancient Greeks and Romans also kept house pets ([Figure 1.3](#)). Indeed small dogs

were found all over the ancient world and are the ancestors of many pet dogs of today. In Tibet and China it was customary to keep both guard dogs and house dogs; guard dogs were big and fierce and lived outside, while the small dogs lived indoors in houses and monasteries.²⁴

Pet-keeping, unlike the keeping of working animals, was something of a luxury in ancient times. Far more people are affluent today, and more keep pets. And pets living indoors as companions often become more intimately connected to their human family than animals living in a farmyard, barn, or kennel. In industrialized countries like France, Britain, and the United States, the majority of households contain at least one companion animal. And over recent decades, as urbanization and prosperity have increased, even more households have kept pets. In the United Kingdom, for example, between 1965 and 2010 the total number of dogs rose from 4.7 to 8 million, and of cats from 4.1 to 8 million.²⁵

The animal-keeping habits of different nations probably play a large part in the forming of national character. But this is an area where there has been almost no research; we have only bare statistics. The highest percentages of households with dogs are in Poland and the United States, with France, Belgium, and Ireland next. Some of the lowest levels of dog and cat ownership are in Germany. In most countries, more households contain dogs than cats, but in some, notably Switzerland and Austria, there is a striking preference for cats as house pets.



Figure 1.3 Small pet dogs in ancient Greece (after Keller, 1913).

In recent years, some changes have occurred in the pattern of pet ownership. In France the percentage of households with both dogs and cats has declined. In Germany and Switzerland

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