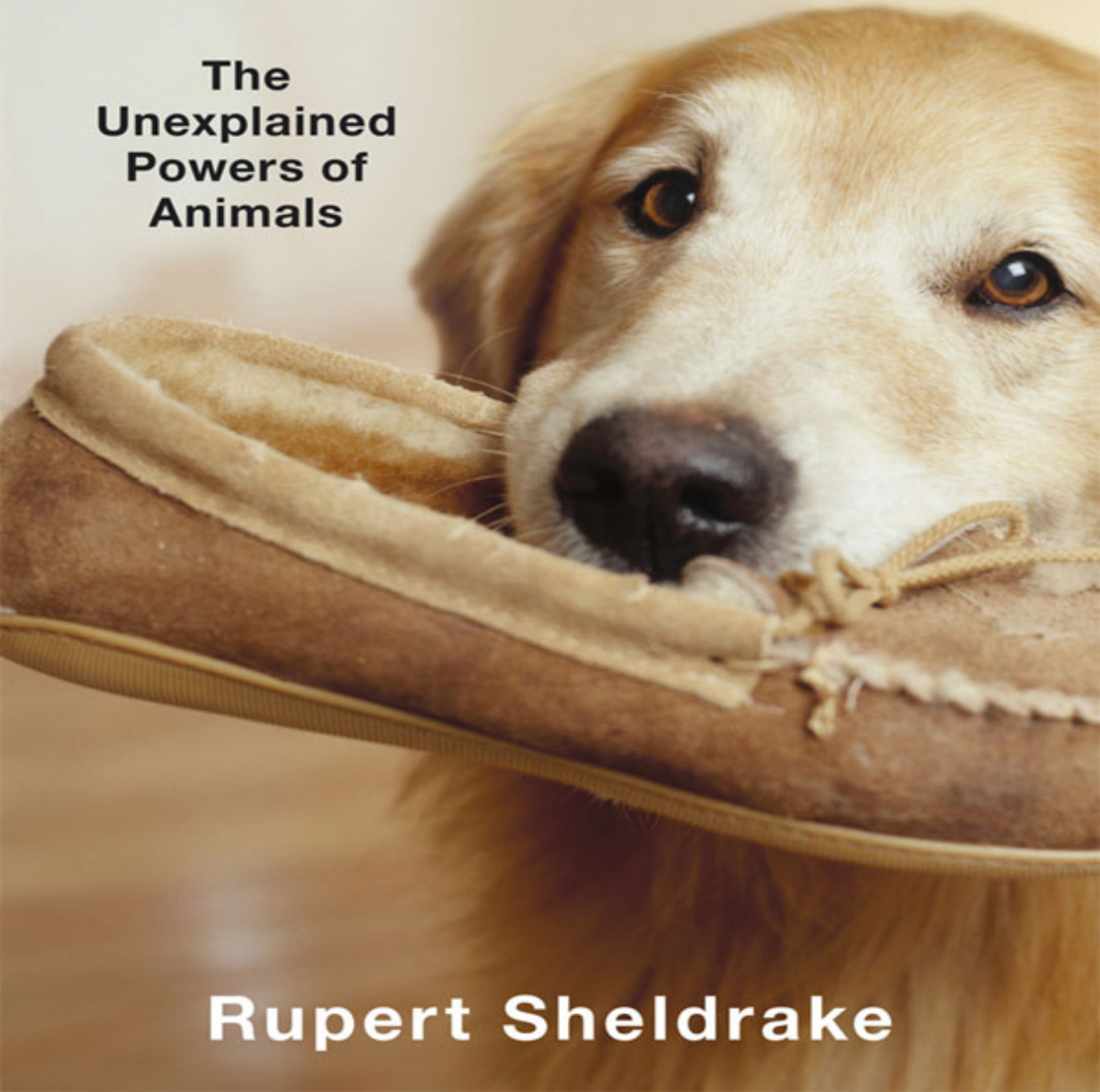
Dogs That Know When Their Owners Are Coming Home

The Unexplained Powers of Animals



Rupert Sheldrake

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About the Book

How does a dog know when its owner is returning home at an unexpected time? How do cats know when it is time to go to the vet, even before the cat carrier comes out? And how can some pets predict that their owners are about to have an epileptic fit? Many pet owners will swear that their dog, cat or other animal has shown some kind of behaviour that they just can’t explain.

Filled with charming stories and thought-provoking investigation, *Dogs That Know When Their Owners Are Coming Home* is a groundbreaking exploration of animal behaviour that will change the way we think about animals, and ourselves. After years of extensive research, Rupert Sheldrake, one of the world’s most innovative scientists, conclusively proves that there is a strong connection between humans and animals that lies beyond everyday scientific understanding.

Dogs That Know When Their Owners Are Coming Home provides fascinating insight into animal and human behaviour and deserves a place next to the most beloved and valuable books on animals.

About the Author

Dr Rupert Sheldrake is a biologist and author of more than 80 scientific papers and ten books. A former Research Fellow of the Royal Society, he studied natural sciences at Cambridge University.

He has appeared in many TV programmes in Britain and overseas, and has taken part in BBC and other radio programmes. He has written for newspapers such as the *Guardian*, where he had a regular monthly column, *The Times, Sunday Telegraph, Daily Mirror, Daily Mail* and *Sunday Times*, and has contributed to a variety of magazines, including *New Scientist, Resurgence*, the *Ecologist* and the *Spectator*. He lives in London with his wife and two sons.

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Dogs That Know When Their Owners Are Coming Home

The Unexplained Powers of Animals

Rupert Sheldrake

arrow books

WITH THANKS TO ALL THE ANIMALS
FROM WHOM I HAVE LEARNED

Preface

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: our dog, Scamp, a rabbit, hamsters, pigeons, a jackdaw, a budgerigar, a terrapin, two tortoises and several goldfish, as well as the populations of tadpoles and caterpillars I would rear each spring. My father, Reginald Sheldrake, a pharmacist and amateur microscopist, encouraged my interests and fuelled my fascination with the natural world when he showed me how drops of pondwater 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 opened the flaps. They let me help. 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 towards their faraway homes. How did they do it? 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 these studies at Cambridge University. 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 favoured tissues in animal biochemistry, we first had to decapitate the living rats, their blood spurting down the laboratory sink. I heard nothing about how pigeons homed.

These student exercises were mild compared with my experience as a temporary laboratory technician in the Pharmacology Department of a multinational pharmaceutical company, where new drugs were developed and tested. I worked there for six months between leaving school and going to university, when I was aged seventeen. There were rooms full of rats, guinea pigs, mice and other animals waiting to be injected with chemicals to see what dose would poison them. The guinea pigs, their toes pinched until they squeaked from pain, were injected with chemicals being screened for painkilling ability. Cats were operated on. At the end of each day dozens of animals that had survived these various tests and experiments were gassed and thrown into a bin for incineration.

A love of animals had led me to study biology and this was where it had taken me. Something had gone wrong. I began to wonder what was going on. I later came to see that the split I experienced within myself is widespread within and outside the scientific community.

I have come to realize that this split is not inevitable. A more inclusive kind of science is possible. It is also much cheaper.

In 1994, I published a book called *Seven Experiments That Could Change The World* in which I explored 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, or fun.

For the last five years, I have been doing research on the perceptiveness of pets with the help of over two thousand animal owners and trainers. I have surveyed over a thousand randomly chosen pet owners to find out how common various kinds of unexplained behaviour are. I and my associates have 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, horse riders, farmers,

shepherds, zoo keepers, petshop proprietors, reptile breeders and pet owners.

If I had quoted from all 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 behaviour in their pets, like dogs knowing when their owners are coming home. I have had to condense this information, and give only a few examples of each kind of perceptive behaviour in this book. 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.

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, New York; the Institute of Noetic Sciences, Sausalito, California; Evelyn Hancock of Old Greenwich, Connecticut; and the Ross Institute of New York. 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.

I owe much to my research associates, Pamela Smart in Lancashire, Jane Turney in London, Susanne Seiler in Zurich and David Brown in Santa Cruz, California; and also to my secretary Cathy Lawlor. They have helped me in many ways: in carrying out surveys, in interviewing people, in doing experiments, and in collecting data. All have helped to build up a large computerized database on the perceptiveness of pets, but Pam Smart has had the primary responsibility for maintaining and adding to it. I am also grateful to Anna Rigano and Dr Amanda Jacks for their help

with research, and to Helmut Lasarcyk for his labour of love in translating hundreds of reports from the German-speaking countries and adding them to our database.

My special thanks are due to Matthew Clapp for the gift of his services in setting up and maintaining my world wide web site (www.sheldrake.org), beginning when he was an undergraduate at the University of Georgia.

Many discussions, comments, suggestions and criticisms, as well as much practical assistance, have helped me in my research and in the writing of this book. In particular I thank Ralph Abraham, Shirley Barry, Patrick Bateson, John Beloff, John Brockman, Sigrid Detschey, Lindy Dufferin and Ava, Peter Fenwick, David Fontana, Matthew Fox, Winston Franklin, Robert Freeman, Edward Goldsmith, Franz-Theo Gottwald, the late Willis Harman, Myles Hildyard, Rupert Hitzig, Nicholas Humphrey, Tom Hurley, Francis Huxley, Montague Keene, David Lorimer, Betty Markwick, Katinka Matson, Robert Matthews, Terence McKenna, John Michell, Michael Morgan, Robert Morris, John O'Donohue, the late Brendan O'Reagan, Barbara and Charles Overby, Erik Pigani, Anthony Podberscek, my wife Jill Purce, Anthony Ramsay, John Roche, Miriam Rothschild, Marilyn Schlitz, Merlin and Cosmo Sheldrake, Paul Sieveking, Arnaud de St Simon, Martin Speich, Dennis Stillings, Dennis Turner, Varena Walterspiel, Ian and Victoria Watson, Alexandra Webster, Richard Wiseman and Sandra Wright.

In my appeals for information I have been helped by many newspapers and magazines in Europe and North America, and by a variety of TV and radio programmes. I thank all those who made this possible.

I also thank all those who have given me their comments and suggestions on various drafts of this book: Letty Beyer, David Brown, Ann Docherty, Karl-Heinz Loske, Anthony Podberscek, Jill Purce, Janis Rozé, Merlin Sheldrake, Pam Smart, Mary Stewart, Peggy Taylor and Jane Turney. I have

been fortunate in having such sympathetic and constructive editors in Steven Ross and Kristin Kiser in New York, and Susan Freestone in London, and the final form of this book owes much to their helpful suggestions.

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 1999

Introduction

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: 'Wherever he is, or whatever he's doing,' says Dr Laufer, 'when Tiki rushes to the window and stands on the windowsill, I know that my wife is on her way home.'

When the telephone rings in the household of a noted professor at the University of California in Berkeley, his wife always 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 makes appreciative meows that are clearly audible to my husband at the other end,' she says. 'If someone else telephones, Whiskins takes no notice.'

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 24-year-old Welsh cob, and 22-year-old Tango were merely biding their time. One night six 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 tell-tale hoof prints on verges and flower beds as they went.

On 17 October 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 centre of Santa Cruz.

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

Through five 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 behaviour 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, fuelled 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, and as a telephone exchange a generation ago, to a computer nowadays), 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. I experienced this split myself in a particularly intense way, as I describe in the Preface to this book.

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 kinds of behaviour that depend on close attachments between animals and people. In this realm, animal trainers and pet owners are generally far more knowledgeable and experienced than professional researchers on animal behaviour – 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 called paranormal – meaning 'beyond the normal' – not because they are rare or exceptional. Some are very common. They are called paranormal 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 roots *an + ekdotos*, 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 course of the research described in this book, I have found that many people have had very similar experiences of perceptiveness in 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. The next question is whether these beliefs are well founded or not. And that is why experimental investigations are an essential part of this research.

One of my favourite books in biology is Charles Darwin's *The Variation of Animals and Plants Under Domestication*, 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 54 varieties of gooseberry himself. He drew on the experience of cat and rabbit fanciers, horse and dog breeders, bee keepers, 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 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 PhDs. This exclusiveness has seriously impoverished modern biology.

Why has this research not 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 years ago, or more. The fact that they are only now beginning is a tribute to the strength of the taboos against such enquiries.

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. 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 enquiry, 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 employed 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.

The tale of Clever Hans

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.

At the beginning of the twentieth century there was a horse in Berlin named Hans, who was said to be able to carry out 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 many displays were given to 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 may have. In short, this story has been used to inhibit research, to prevent enquiry, 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 went 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 carry out 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 between humans and non-human animals, rather than differences of kind.

Conversely, traditionalists were very sceptical 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 favourable material from the 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 each other, 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, namely telepathy; the sense of direction; and premonitions.

1. *Telepathy*. I start with the ability of some dogs and other animals to know when their owners are coming home. In many cases the animals' anticipations of people's returns cannot be explained in terms of routine, clues from people at home, or hearing familiar cars approaching. In videotaped experiments, dogs can still anticipate their owners' returns at randomly chosen times, even when they are travelling in taxis or other unfamiliar vehicles. Somehow people telepathically communicate their intentions 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 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.

2. *The sense of direction*. Homing pigeons can find their way back to their loft 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 towards 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 towards 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 'home' not to places but to people. Some dog owners who have gone away and left their pet behind are found by the animal in distant places to which the animal has never been 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 animal and the person 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.

3. *Premonitions*. Some premonitions may be explicable in terms of physical stimuli: for example, animals that become disturbed before earthquakes may be reacting to subtle electrical changes, or dogs that alert their epileptic owners to an impending fit may notice subtle muscular tremors or

unusual odours. But other premonitions seem to involve mysterious forebodings that challenge our usual assumptions about the separation of past, present and future.

Telepathy, the senses of direction and precognition are examples of what some people call extrasensory perception or ESP. Others attribute them to a ‘sixth sense’ (or ‘seventh sense’, or at any rate, an additional sense or senses). Others call them ‘paranormal’. Others call them ‘psychic’. All these terms agree in pointing 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. This conflict vanishes if ‘extrasensory’ is taken to mean ‘outside the *known* senses’.

Neither the term ‘extrasensory perception’ nor the term ‘sixth sense’ suggest what these phenomena are, or how they work. They merely tell us what they 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 non-human species like dogs than they are in people. Nevertheless they occur in the human realm too. Human psychic powers or ‘sixth senses’ seem more natural, more biological, when they are seen in the light of animal behaviour. Much that appears ‘paranormal’ at present looks normal when we expand our ideas 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 enquiry.

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

1

The domestication of animals

Bonds with animals

MANY PEOPLE LOVE their pets and are loved by them. They develop strong emotional attachments. In this chapter I explore the evolution and the nature of such 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, there are hundreds of domesticated animals confined to barren environments in intensive farming systems and research laboratories. In many third world countries, beasts of burden are often treated brutally, with humans as the brutes. And traditional societies are not usually subscribers to modern ideals of animal welfare. Eskimos, for example, tend to treat their huskies harshly.

Then there are the animals who are victims of thoughtless neglect and deliberate cruelty. Throughout the industrialized world, organizations for the prevention of cruelty to animals continually uncover and publicize appalling sufferings of animals at human hands: horses with ribs showing through their emaciated skin; dogs tethered and neglected; cats tortured. And many animals are simply abandoned. In the United States alone about five

million unwanted dogs and a similar number of cats are put down every year by local authorities or by voluntary organizations.[1]

But in spite of all this exploitation, abuse and neglect, many people form bonds with animals from childhood onwards. Young children are commonly given teddy bears or other toy animals, and like hearing stories about animals. Above all, most like keeping actual animals. The majority of pets live in households with children.[2]

Hearing tales about frightening animals – including fairy tales like 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 four million years. The first stone tools were used about two and a half 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 art, 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.[3]

Our ancestors lived as gatherers and hunters, with gathering far more important than hunting. The old image of Man the Hunter striding confidently out on to the African

savannah turns out to be a myth. Even among existing hunter-gatherers only a small proportion of the food they eat comes from animals hunted by the men; most comes from gathering, mainly by women. (The exceptions are the hunter-gatherers of the plant-poor Arctic regions.[4]) Hominids and early *Homo sapiens* generally obtained what meat they did by scavenging the kills left by more effective predators like big cats rather than by hunting for themselves.[5] 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 the realm of other animals, but as intimately interconnected.[6] The specialists in communication with the non-human 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 changing into animals, understanding their language, and sharing in their prescience and occult powers.[7]

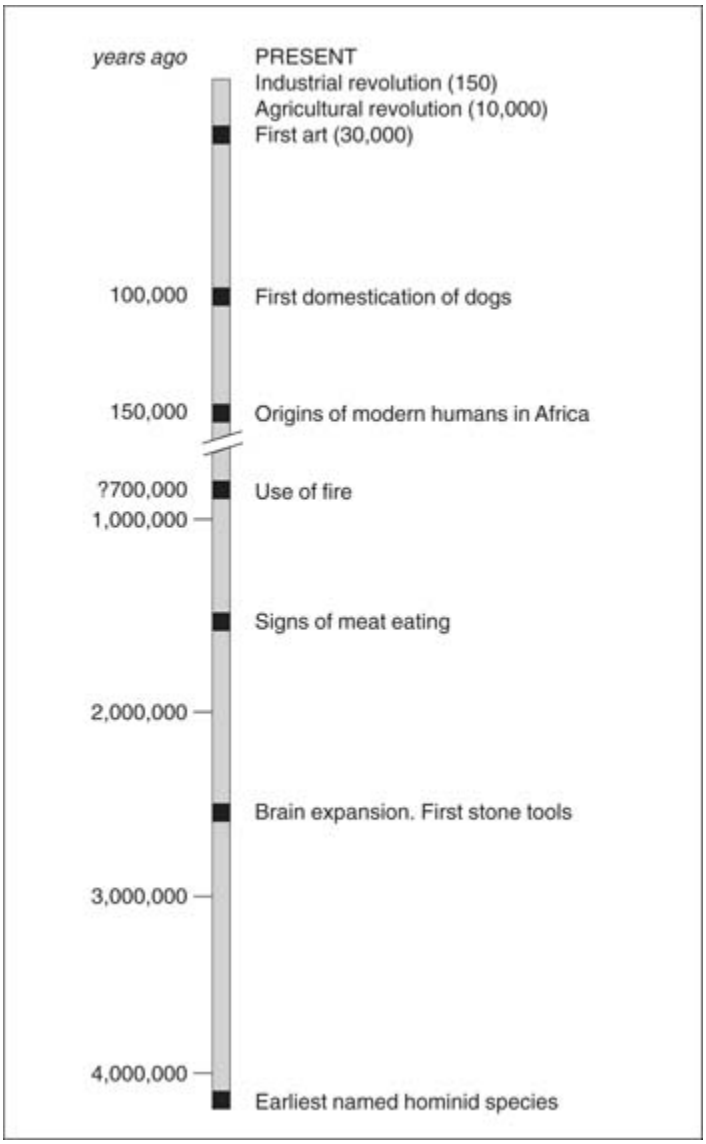

Figure 1.1 A time line of human evolution.

The domestication of dogs

The first animals to be domesticated were dogs. Their ancestors, wolves, hunted in packs 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.[8]

The conventional view is that the first domestication of wolves occurred between ten and twenty thousand years