

A WARM HUMANITY, A KINDLY HUMOR, AND A DEEP THOUGHTFULNESS SHINE THROUGH ALMOST EVERY WORD KONRAD LORENZ WRITES. —THE NEW YORKER

King Solomon's Ring



THE CLASSIC

ACCOUNT OF ANIMAL

BEHAVIOR BY THE FOREMOST

NATURALIST OF OUR TIME

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FOREWORD BY JULIAN HUXLEY



8.

THE LANGUAGE OF ANIMALS

*Learned of every bird its language,
Learned their names and all their secrets,
Talked with them where'er he met them.*

LONGFELLOW

ANIMALS DO NOT possess a language in the true sense of the word. In the higher vertebrates, as also in insects, particularly in the socially living species of both great groups, every individual has a certain number of innate movements and sounds for expressing feelings. It has also innate ways of reacting to these signals whenever it sees or hears them in a fellow-member of the species. The highly social species of birds, such as the jackdaw or the greylag goose, have a complicated code of such signals which are uttered and understood by every bird without any previous experience. The perfect co-ordination of social behaviour which is brought about by these actions and reactions conveys to the human observer the impression that the birds are talking and understanding a language of their own. Of course, this purely innate signal code of an animal species differs fundamentally from human language, every word of which must be learned laboriously by the human child. Moreover, being a genetically fixed character of the species—just as much as any bodily

character—this so-called language is, for every individual animal species, ubiquitous in its distribution. Obvious though this fact may seem, it was, nevertheless, with something akin to naïve surprise that I heard the jackdaws in northern Russia “talk” exactly the same, familiar “dialect” as my birds at home in Altenberg. The superficial similarity between these animal utterances and human languages diminishes further as it becomes gradually clear to the observer that the animal, in all these sounds and movements expressing its emotions, has in no way the conscious intention of influencing a fellow-member of its species. This is proved by the fact that even geese or jackdaws reared and kept singly make all these signals as soon as the corresponding mood overtakes them. Under these circumstances the automatic and even mechanical character of these signals becomes strikingly apparent and reveals them as entirely different from human words.

In human behaviour, too, there are mimetic signs which automatically transmit a certain mood and which escape one, without or even contrary to one's intention of thereby influencing anybody else: the commonest example of this is yawning. Now the mimetic sign by which the yawning mood manifests itself is an easily perceived optical and acoustical stimulus whose effect is, therefore, not particularly surprising. But, in general, such crude and patent signals are not always necessary in order to transmit a mood. On the contrary, it is characteristic of this particular effect that it is often brought about by diminutive sign stimuli which are hardly perceptible by conscious observation. The mysterious apparatus for transmitting and receiving the sign stimuli which convey moods is age-old, far older than mankind itself. In our own case, it has doubtless degenerated as our word-language developed. Man has no need of minute intention-displaying movements to announce his momentary mood: he can say it in words. But jackdaws or dogs are obliged to “read in each other's eyes” what they are about to do in the next moment. For this reason, in higher and social animals, the transmitting,

as well as the receiving apparatus of “mood-convection,” is much better developed and more highly specialized than in us humans. All expressions of animal emotions, for instance, the “Kia” and “Kiaw” note of the jackdaw, are therefore not comparable to our spoken language, but only to those expressions such as yawning, wrinkling the brow and smiling, which are expressed unconsciously as innate actions and also understood by a corresponding inborn mechanism. The “words” of the various animal “languages” are merely interjections.

Though man may also have numerous gradations of unconscious mimicry, no George Robey or Emil Jannings would be able, in this sense, to convey, by mere miming, as the greylag goose can, whether he was going to walk or fly, or to indicate whether he wanted to go home or to venture further afield, as a jackdaw can do quite easily. Just as the transmitting apparatus of animals is considerably more efficient than that of man, so also is their receiving apparatus. This is not only capable of distinguishing a large number of signals, but, to preserve the above simile, it responds to much slighter transmissions than does our own. It is incredible, what minimal signs, completely imperceptible to man, animals will receive and interpret rightly. Should one member of a jackdaw flock that is seeking for food on the ground, fly upwards merely to seat itself on the nearest apple-tree and preen its feathers, then none of the others will cast so much as a glance in its direction; but, if the bird takes to wing with intent to cover a longer distance, then it will be joined, according to its authority as a member of the flock, by its spouse or also a larger group of jackdaws, in spite of the fact that it did not emit a single “Kia.”

In this case, a man well versed in the ways and manners of jackdaws might also, by observing the minutest intention-displaying movements of the bird, be able to predict—if with less accuracy than a fellow-jackdaw—how far that particular bird was going to fly. There are instances in which a good observer can equal and even surpass an animal in its faculty of

"understanding" and anticipating the intentions of its fellow, but in other cases he cannot hope to emulate it. The dog's "receiving set" far surpasses our own analogous apparatus. Everybody who understands dogs knows with what almost uncanny certitude a faithful dog recognizes in its master whether the latter is leaving the room for some reason uninteresting to his pet, or whether the longed-for daily walk is pending. Many dogs achieve even more in this respect. My Alsatian Tito, the great-great-great-great-grandmother of the dog I now possess, knew, by "telepathy," exactly which people got on my nerves, and when. Nothing could prevent her from biting, gently but surely, all such people on their posteriors. It was particularly dangerous for authoritative old gentlemen to adopt towards me, in discussion, the well-known "you are, of course, too young" attitude. No sooner had the stranger thus expostulated, than his hand felt anxiously for the place in which Tito had punctiliously chastised him. I could never understand how it was that this reaction functioned just as reliably when the dog was lying under the table and was therefore precluded from seeing the faces and gestures of the people round it: how did she know who I was speaking to or arguing with?



This fine canine understanding of the prevailing mood of a master is not really telepathy. Many animals are capable of perceiving the smallest movements, withheld from the human eye. And a dog, whose whole powers of concentration are bent on serving his master and who literally "hangs on his every word," makes use of this faculty to the utmost.

Horses too have achieved considerable feats in this field. So it will not be out of place to speak here of the tricks which have brought some measure of renown to certain animals. There have been "thinking" horses which could work out square roots, and a wonder-dog Rolf, an Airedale terrier, which went so far as to dictate its last will and testament to its mistress. All these "counting," "talking" and "thinking" animals "speak" by knocking or barking sounds, whose meaning is laid down after the fashion of a morse code. At first sight, their performances are really astounding. You are invited to set the examination yourself and you are put opposite the horse, terrier or whatever animal it is. You ask, how much is twice two; the terrier scrutinizes you intently and barks four times. In a horse, the feat seems still more prodigious for he does not even look at you. In dogs, who watch the examiner closely, it is obvious that their attention is concentrated upon the latter and not by any means, on the problem itself. But the horse has no need to turn his eyes towards the examiner since, even in a direction in which the animal is not directly focusing, it can see, by indirect vision, the minutest movement. And it is you yourself who betray, involuntarily to the "thinking" animal, the right solution. Should one not know the right answer



oneself, the poor animal would knock or bark on desperately, waiting in vain for the sign which would tell him to stop. As a rule, this sign is forthcoming, since few people are capable, even with the utmost self-control, of withholding an unconscious and involuntary signal. That it is the human being who finds the solution and communicates it was once proved by

one of my colleagues in the case of a dachshund which had become quite famous and which belonged to an elderly spinster. The method was perfidious: it consisted in suggesting a wrong solution of all the problems not to the "counting" dog, but to his mistress. To this end, my friend made cards on one side of which a simple problem was printed in fat letters. The cards, however, unknown to the dog's owner, were constructed of several layers of transparent paper on the last of which another problem was inscribed in such a manner as to be visible from behind, when the front side was presented to the animal. The unsuspecting lady, seeing, in looking-glass writing, what she imagined to be the problem to be solved, transmitted involuntarily to the dog a solution which did not correspond to that of the problem on the front of the card, and was intensely surprised when, for the first time in her experience, her pet continued to give wrong answers. Before ending the séance, my friend adopted different tactics and presented mistress and dog with a problem, which, for a change, the dog could answer and the lady could not: He put before the animal a rag impregnated with the smell of a bitch in season. The dog grew excited, wagged his tail and whined—he knew what he was smelling and a really knowledgeable dog owner might have known, too, from observing his behaviour. Not so the old lady. When the dog was asked what the rag smelled of, he promptly morsed *her* answer: "Cheese"!

The enormous sensitivity of many animals to certain minute movements of expression, as, for example, the above described capacity of the dog to perceive

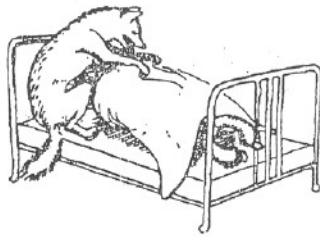


the friendly or hostile feelings which his master harbours for another person, is a wonderful thing. It is therefore not surprising that the naïve observer, seeking to assign to the animal human qualities, may believe that a being which can guess even such inward unspoken thoughts, must, still more, understand every word that the beloved master utters; now an intelligent dog does understand a considerable number of words, but, on the other hand, it must not be forgotten that the ability to understand the minutest expressional movements is thus acute in animals for the very reason that they lack true speech.

As I have already explained, all the innate expressions of emotion, such as the whole complicated "signal code" of the jackdaw, are far removed from human language. When your dog nuzzles you, whines, runs to the door and scratches it, or puts his paws on the wash basin under the tap, and looks at you imploringly, he does something that comes far nearer to human speech than anything that a jackdaw or goose can ever "say," no matter how clearly "intelligible" and appropriate to the occasion the finely differentiated expressional sounds of these birds may appear. The dog wants to make you open the door or turn on the tap, and what he does has the specific and purposeful motive of influencing you in a certain direction. He would never perform these movements if you were not present. But the jackdaw or goose merely gives unconscious expression to its inward mood and the "Kia" or "Kiaw," or the warning sound escapes the bird involuntarily; when in a certain mood, it must utter the corresponding sound, whether or not there is anybody there to hear it.

The intelligible actions of the dog described above are not innate but are individually learned and governed by true insight. Every individual dog has different methods of making himself understood by his master and will adapt his behaviour according to the situation. My bitch Stasie, the great-grandmother of the dog I now possess, having once eaten something which disagreed with her, wanted to go out during the night. I was at that time overworked, and slept very

soundly, so that she did not succeed in waking me and indicating her requirements, by her usual signs; to her whining and nosing I had evidently only responded by burying myself still deeper in my pillows. This desperate situation finally induced her to forget her normal obedience and to do a thing which was strictly forbidden her: she jumped on my bed and then proceeded literally to dig me out of the blankets and roll me on the floor. Such an adaptability to present needs is totally lacking in the "vocabulary" of birds: they never roll you out of bed.



Parrots and large corvines are endowed with "speech" in still another sense: they can imitate human words. Here, an association of thought between the sounds and certain experiences is sometimes possible. This imitating is nothing other than the so-called mocking found in many song birds. Willow warblers, red-backed shrikes and many others are masters of this art. Mocking consists of sounds, learned by imitation, which are not innate and are uttered only while the bird is singing; they have no "meaning" and bear no relation whatsoever to the inborn "vocabulary" of the species. This also applies to starlings, magpies and jackdaws, who not only "mock" birds' voices but also successfully imitate human words. However, the talking of big corvines and parrots is a somewhat different matter. It still bears that character of playfulness and lack of purpose which is also inherent in the mocking of smaller birds and which is loosely akin to the play of more intelligent animals. But a corvine or a parrot will utter its human words independently of song and it is undeniable that these sounds may occasionally have a definite thought association.

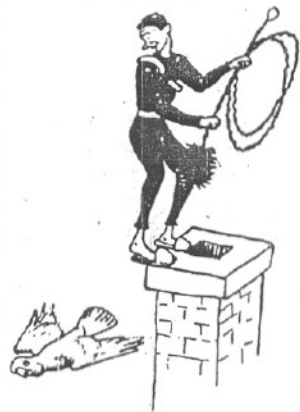
Many grey parrots, as well as others, will say "good morning" only once a day and at the appropriate time. My friend Professor Otto Koehler possessed an ancient grey parrot which, being addicted to the vice of feather-plucking, was nearly bald. This bird answered to the name of "Geier" which in German means vulture. Geier was certainly no beauty but he redeemed himself by his speaking talents. He said "good morning" and "good evening" quite aptly and, when a visitor stood up to depart, he said, in a benevolent bass voice "Na, auf Wiedersehen." But he only said this if the guest really departed. Like a "thinking" dog, he was tuned in to the finest, involuntarily given signs; what these signs were, we never could find out and we never once succeeded in provoking the retort by staging a departure. But when the visitor really left, no matter how inconspicuously he took his leave, promptly and mockingly came the words "Na, auf Wiedersehen!"

The well-known Berlin ornithologist, Colonel von Lukanus, also possessed a grey parrot which became famous through a feat of memory. Von Lukanus kept, among other birds, a tame hoopoe named "Höpfchen." The parrot, which could talk well, soon mastered this word. Hoopoes unfortunately do not live long in captivity, though grey parrots do; so, after a time, "Höpfchen" went the way of all flesh and the parrot appeared to have forgotten his name, at any rate, he did not say it any more. Nine years later, Colonel von Lukanus acquired another hoopoe and, as the parrot set eyes on him for the first time, he said at once, and then repeatedly, "Höpfchen" . . . "Höpfchen." . . .

In general, these birds are just as slow in learning something new as they are tenacious in remembering what they have once learned. Everyone who has tried to drum a new word into the brain of a starling or a parrot knows with what patience one must apply oneself to this end, and how untiringly one must again and again repeat the word. Nevertheless, such birds can, in exceptional cases, learn to imitate a word which they have heard seldom, perhaps only once. However, this apparently only succeeds when a bird is in an ex-

ceptional state of excitement; I myself have seen only two such cases. My brother had, for years, a delightfully tame and lively blue-fronted Amazon parrot named Papagallo, which had an extraordinary talent for speech. As long as he lived with us in Altenberg, Papagallo flew just as freely around as most of my other birds. A talking parrot that flies from tree to tree and at the same time says human words, gives a much more comical effect than one that sits in a cage and does the same thing. When Papagallo, with loud cries of "Where's the Doc?" flew about the district, sometimes in a genuine search for his master, it was positively irresistible.

Still funnier, but also remarkable from a scientific point of view, was the following performance of the bird; Papagallo feared nothing and nobody, with the exception of the chimney-sweep. Birds are very apt to fear things which are up above. And this tendency is associated with the innate dread of the bird of prey swooping down from the heights. So everything that appears against the sky, has for them something of the meaning of "bird of prey." As the black man, already sinister in his darkness, stood up on the chimney stack and became outlined against the sky, Papagallo fell into a panic of fear and flew, loudly screaming, so far away that we feared he might not come back. Months later, when the chimney-sweep came again, Papagallo



was sitting on the weathercock, squabbling with the jackdaws who wanted to sit there too. All at once, I saw him grow long and thin and peer down anxiously into the village street; then he flew up and away, shrieking in raucous tones, again and again, "the chimney-sweep is coming, the chimney-sweep is coming." The next moment, the black man walked through the doorway of the yard!

Unfortunately, I was unable to find out how often Papagallo had seen the chimney-sweep before and how often he had heard the excited cry of our cook which heralded his approach. It was, without a doubt, the voice and intonation of this lady which the bird reproduced. But he had certainly not heard it more than three times at the most and, each time, only once and at an interval of months.

The second case known to me in which a talking bird learned human words after hearing them only once or very few times, concerns a hooded crow. Again it was a whole sentence which thus impressed itself on the bird's memory. "Hansl," as the bird was called, could compete in speaking talent with the most gifted parrot. The crow had been reared by a railwayman, in the next village, and it flew about freely and had grown into a well-proportioned, healthy fellow, a good advertisement for the rearing ability of its foster-father. Contrary to popular opinion, crows are not easy to rear and, under the inadequate care which they usually receive, mostly develop into those stunted, half-crippled specimens which are so often seen in captivity. One day, some village boys brought me a dirt-encrusted hooded crow whose wings and tail were clipped to small stumps. I was hardly able to recognize, in this pathetic being, the once beautiful Hansl. I bought the bird, as, on principle, I buy all unfortunate animals that the village boys bring me and this I do partly out of pity and partly because amongst these stray animals there might be one of real interest. And this one certainly was! I rang up Hansl's master who told me that the bird had actually been missing some days and begged me to adopt him till the next moult. So, accordingly, I put the crow in the pheasant

pen and gave it concentrated food, so that, in the imminent new moult, it would grow good new wing and tail feathers. At this time, when the bird was, of necessity, a prisoner, I found out that Hansl had a surprising gift of the gab and he gave me the opportunity of hearing plenty! He had, of course, picked up just what you would expect a tame crow to hear that sits on a tree, in the village street, and listens to the "language" of the inhabitants.

I later had the pleasure of seeing this bird recover his full plumage and I freed him as soon as he was fully capable of flight. He returned forthwith to his former master, in Wordern, but continued, a welcome guest, to visit us from time to time. Once he was missing for several weeks and, when he returned, I noticed that he had, on one foot, a broken digit which had healed crooked. And this is the whole point of the history of Hansl, the hooded crow. For we know just how he came by this little defect. And from whom do we know it? Believe it or not, Hansl told us himself! When he suddenly reappeared, after his long absence, he knew a new sentence. With the accent of a true street urchin, he said, in lower Austrian dialect, a short sentence which, translated into broad Lancashire, would sound like "Got 'im in t'bloomin' trap!" There was no doubt about the truth of this statement. Just as in the case of Papagallo, a sentence which he had certainly not heard often, had stuck in Hansl's memory because he had heard it in a moment of great apprehension, that is, immediately after he had been caught. How he got away again, Hansl unfortunately did not tell us.

In such cases, the sentimental animal lover, crediting the creature with human intelligence, will take an oath on it that the bird understands what he says. This, of course, is quite incorrect. Not even the cleverest "talking" birds which, as we have seen, are certainly capable of connecting their sound-expressions with particular occurrences, learn to make practical use of their powers, to achieve purposefully even the simplest object. Professor Koehler, who can boast of the greatest successes in the science of training animals,



and who succeeded in teaching pigeons to count up to six, tried to teach the above-mentioned, talented grey parrot "Geier" to say "food" when he was hungry and "water" when he was dry. This attempt did not succeed, nor, so far, has it been achieved by anybody else. In itself, the failure is remarkable. Since, as we have seen, the bird is able to connect his sound utterances with certain occurrences, we should expect him, first of all, to connect them with a purpose; but this, surprisingly, he is unable to do. In all other cases, where an animal learns a new type of behaviour, it does so to achieve some purpose. The most curious types of behaviour may be thus acquired, especially with the object of influencing the human keeper. A most grotesque habit of this kind was learned by a Blumenau's parakeet which belonged to Prof. Karl von Frisch. The scientist only let the bird fly freely when he had just watched it have an evacuation of the bowels, so that, for the next ten minutes, his well-kept furniture was not endangered. The parakeet learned very quickly to associate these facts and, as he was passionately fond of leaving his cage, he could force out a minute dropping with all his might, every time Prof. von Frisch came near the cage. He even squeezed desperately when it was impossible to produce anything, and really threatened to do himself an injury by the violence of his straining. You just had to let the poor thing out, every time you saw him!

Yet the clever "Geier," much cleverer than that little parakeet, could not even learn to say "food" when he was hungry. The whole complicated apparatus of the bird's syrinx and brain that makes imita-

tion and association of thought possible, appears to have no function in connection with the survival of the species. We ask ourselves vainly what it is there for!

I only know one bird that learned to use a human word when he wanted a particular thing and who thus connected a sound-expression with a purpose, and it is certainly no coincidence that it was a bird of that species which I consider to have the highest mental development of all, namely the raven. Ravens have a certain innate call-note which corresponds to the "Kia" of the jackdaw and has the same meaning, that is, the invitation to others to fly with the bird that utters it. In the raven, this note is a sonorous, deep-throated, and, at the same time, sharply metallic "krackrack-rack." Should the bird wish to persuade another of the same species which is sitting on the ground to fly with it, he executes the same kind of movements as described in the chapter on jackdaws: he flies, from behind, close above the other bird and, in passing it, wobbles with his closely folded tail, at the same time emitting a particularly sharp "Krackrack-rack" which sounds almost like a volley of small explosions.

My raven Roah, so named after the call-note of the young raven, was, even as a mature bird, a close friend of mine and accompanied me, when he had nothing better to do, on long walks and even on skiing tours, or on motorboat excursions on the Danube. Particularly in his later years he was not only shy of strange people, but also had a strong aversion to places where he had once been frightened or had had any other unpleasant experience. Not only did he hesitate to come down from the air to join me in such places, but he could not bear to see me linger in what he considered to be a dangerous spot. And, just as my old jackdaws tried to make their truant children leave the ground and fly after them, so Roah bore down upon me from behind, and, flying close over my head, he wobbled with his tail and then swept upwards again, at the same time looking backwards over his shoulder to see if I was following. In accompaniment to this sequence of movements—which, to stress the fact again, is entirely innate—Roah, instead of uttering the above de-

scribed call-note, said his own name, with human intonation. The most peculiar thing about this was that Roah used the human word for me only. When addressing one of his own species, he employed the normal innate call-note. To suspect that I had unconsciously trained him would obviously be wrong; for this could only have taken place if, by pure chance, I had walked up to Roah at the very moment when he happened to be calling his name, and, at the same time, to be wanting my company. Only if this rather unlikely coincidence of three factors had repeated itself on several occasions, could a corresponding association of thought have been formed by the bird, and that certainly was not the case. The old raven must, then, have possessed a sort of insight that "Roah" was my call-note! Solomon was not the only man who could speak to animals, but Roah is, so far as I know, the only animal that has ever spoken a human word to a man, in its right context—even if it was only a very ordinary call-note.

