
Lorenz
King Solomon's Ring

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Konrad

Lorenz

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New light on animal ways

With a foreword by Julian Huxley

Illustrated by the author

Translated by Marjorie Kerr Wilson

London and New York

Er redete mit dem Vieh, den Vögeln und den Fischen
first published 1949
by Verlag Dr. Borotha-Schoeler, Vienna

English edition first published 1952
by Methuen & Co. Ltd

First published in Routledge Classics 2002
by Routledge
11 New Fetter Lane, London EC4P 4EE
29 West 35th Street, New York, NY 10001

Routledge is an imprint of the Taylor & Francis Group

This edition published in the Taylor & Francis e-Library, 2004.

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
A catalog record for this book has been requested

ISBN 0-203-16596-9 Master e-book ISBN

ISBN 0-203-26059-7 (Adobe eReader Format)
ISBN 0–415–26747–1 (pbk)
ISBN 0–415–26746–3 (hbk)

To
Mr and Mrs J. B. Priestley
without whose timely help
jackdaws
would not—in all probability—
be flying round Altenberg any more

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Foreword

by Julian Huxley

Konrad Lorenz is one of the outstanding naturalists of our day. I have heard him referred to as the modern Fabre, but with birds and fishes instead of insects and spiders as his subject-matter. However, he is more than that, for he is not only, like Fabre, a provider of an enormous volume of new facts and penetrating observations, with a style of distinction and charm, but in addition has contributed in no small degree to the basic principles and theories of animal mind and behaviour. For instance, it is to him more than any other single man that we owe our knowledge of the existence of the strange biological phenomena of "releaser" and "imprinting" mechanisms.

The reader of this book who has followed the account of how Lorenz himself became "imprinted" on his baby goslings as their parent, or how his jackdaws regarded him as their general leader and companion, but chose other corvine birds (so long as they were on the wing), as flight companions, and fixed on his maid-servant as a "love-object"; or how certain attitudes or gestures on the part of a fighting-fish or a wolf will act as releasers

to promote or inhibit combat reactions in another individual of the species, will realize not only the strangeness of the facts but the fundamental nature of the principles that underly them.

Of course, Other naturalists too have worked along similar lines. I think of the pioneering studies of Lloyd Morgan in Britain, of Whitman in America, of the Heinroths in Germany; of the remarkable researches of the late Kingsley Noble of New York on the behaviour of lizards, and of Tinbergen of Holland and Oxford on releasers in sticklebacks and herring-gulls; and of the detailed illustration of the principles involved by a host of observers and students, most of them ornithologists, in western Europe and North America. But it remains true that Lorenz has done more than any single man to establish the principles and to formulate the essential ideas behind them. And then Lorenz has given himself over, body and soul, to his self-appointed task of really understanding animals, more thoroughly than any other biologist-naturalist that I can think of. This has involved keeping his objects of study in what amounts to the wild state, with full freedom of movement. His readers will discover all that this has meant in the way of hard work and inconvenience—sometimes amusing in retrospect, but usually awkward enough or even serious at the time.

But the labour and the inconvenience have been abundantly justified by the results. Indeed they were necessary, for thanks to such work by Lorenz (and by other devoted lovers and students of animals) it has become clear that animals do not reveal the higher possibilities of their nature and behaviour, nor the full range of their individual diversity, except in such conditions of freedom. Captivity cages minds as well as bodies, and rigid experimental procedure limits the range of performance; while freedom liberates the creatures' capacities and permits the observer to study their fullest developments.

The value of Lorenz's methods is strikingly exemplified in his long chapter on his jackdaws—one of the most illuminating

accounts ever given of the life of a social organism. The strange blend of automatic reaction, intelligence, and insight shown by these birds; the curious mechanisms of their social behaviour, which on the whole make for law and order and the safeguarding of weaker members of the colony (though none of the behaviour is undertaken with any such purpose in view); the difference between avian communication and human language; the presence of what, if it were to be exhibited by men, would be called chivalrous behaviour (but its total absence in non-social species like the turtle-dove, which in spite of its gentle reputation can be guilty of the most brutal cruelty to a defeated rival which cannot escape) the extraordinary and I believe the only established case of the social transmission of the knowledge that certain creatures are to be treated as enemies—all this and much else is set forth by Lorenz in such a way that his readers will never again be guilty of anthropomorphising a bird, nor of the equal intellectual misdemeanour of "mechanomorphizing" it and reducing it to the false over-simplification of a mere system of reflexes.

However, it is not only with birds that Lorenz is at home. His account of the reproductive life of fighting-fish and sticklebacks—the combats and displays of the males; the reactions of the females, the males' parental care of their young is equally brilliant and penetrating. If the behaviour of fish does not rise quite to the same height as that of birds, it is certainly much more extraordinary than most people have any idea of. And the description of how a certain male fighting-fish resolved a conflict is an admirable scientific account of a very unusual phenomenon—an animal making up its mind when it possesses only a rather poorly developed mind to make up.

All this new and important scientific description is not merely presented with the most lucid simplicity, but enlivened with some extremely entertaining embellishments. Poor Lorenz being forced to spend hours crouched on his knees or crawling on

hands and feet, and quacking loudly at frequent intervals, if he was to fulfil his role as "imprinted" parent of a brood of ducklings; his assistant suddenly realizing he was talking goose instead of duck to the same ducklings, and cutting short his goose-talk with "no, I mean *quah, quah, quah*"; Lorenz's old father walking back to the house from his outdoor siesta, indignantly holding up his trousers because Lorenz's tame cockatoo had bitten all the buttons off all his clothes—coat buttons, waistcoat buttons, braces buttons and fly buttons—and laid them out in order on the ground; Lorenz calling down the same cockatoo from high up in the air by emitting repeated cockatoo-screams (visitors to the parrot house at the Zoo will remember what that means!) on a crowded railway platform—these and various other incidents that he records I shall long chuckle over.

But I do not wish to stand between Lorenz and his readers. I will conclude by expressing my fullest agreement with him when he repudiates the unimaginative and blinkered outlook of those who think that it is "scientific" to pretend that something rich and complex is merely its jejune and simple elements, and in particular that the brains of higher organisms, such as birds, those complex body-minds with their elaborate emotional behaviour, are "really" nothing but reflex machines, like a bit of special cord magnified and supplied with special sense-organs; and equally so when he repudiates the uncritical and often wishful thinking of the sentimental anthropomorphizers, who not merely refuse to take the trouble to understand the radically different nature of animals' minds and behaviour from our own, but in fact are satisfying some repressed urge of their own unconscious by projecting human attributes into bird and beast.

As he rightly says, the truth is more extraordinary and more interesting than any such futile imaginings. He might have added that the truth is also necessary. Only if we know and face the truth about the world, whether the world of physics and chemistry, or of geology and biology, or of mind and behaviour

shall we be able to see what is our own true place in that world. Only as we discover and assimilate the truth about nature shall we be able to undertake the apparently contradictory but essential task of re-establishing our unity with nature while at the same time maintaining our transcendence over nature. The work of men like Lorenz is a very real contribution to our understanding of our relations with that important part of nature constituted by the higher animals.

Preface

There was never a king like Solomon
Not since the world began
Yet Solomon talked to a butterfly
As a man would talk to a man.
Rudyard Kipling

As Holy Scripture tells us, the wise King Solomon, the son of David "spake also of beasts, and of fowl, and of creeping things, and of fishes" (I Kings iv. 33). A slight misreading of this text, which very probably is the oldest record of a biological lecture, has given rise to the charming legend that the king was able to talk the language of animals, which was hidden from all other men. Although this venerable tale that he spake to the animals and not of them certainly originated from a misunderstanding, I feel inclined to accept it as a truth; I am quite ready to believe that Solomon really could do so, even without the help of the magic ring which is attributed to him by the legend in question, and I have very good reason for crediting it; I can do it myself, and without the aid of magic, black or otherwise. I do not think

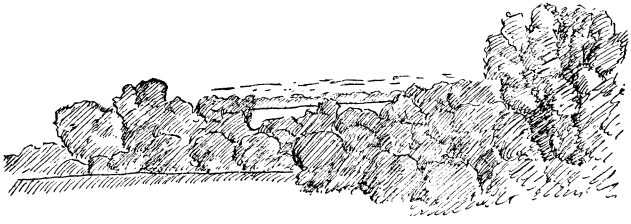
it is very sporting to use magic rings in dealing with animals. Without supernatural assistance, our fellow creatures can tell us the most beautiful stories, and that means *true* stories, because the truth about nature is always far more beautiful even than what our great poets sing of it, and they are the only real magicians that exist.

I am not joking by any means. In so far as the "signal code" of a species of social animal can be called a language at all, it can be understood by a man who has got to know its "vocabulary", a subject to which a whole chapter in this book is devoted. Of course lower and non-social animals do not have anything that could, even in a very wide sense, be compared with a language, for the very simple reason that they do not have anything to say. For the same reason, it is impossible to say anything to them; it would indeed be exceedingly difficult to say anything that would interest some of the lower "creeping things". But, by knowing the "vocabulary" of some highly social species of beast or bird it is often possible to attain to an astonishing intimacy and mutual understanding. In the day's work of a scientist investigating animal behaviour this becomes a matter of course and ceases to be a source of wonder, but I still retain the clear-cut memory of a very funny episode, which, with all the suddenness of philosophical realization brought to my full consciousness what an astounding and unique thing the close social relation between a human and a wild animal really is.

Before I begin, I must first of all describe the setting which forms the background for most of this book. The beautiful country flanking the Danube on either side in the district of Altenberg is a real "naturalist's paradise". Protected against civilization and agriculture by the yearly inundations of Mother Danube, dense willow forests, impenetrable scrub, reed-grown marshes and drowsy backwaters stretch over many square miles; an island of utter wildness in the middle of Lower Austria; an oasis of virgin nature, in which red and roe deer, herons and cormorants have

survived the vicissitudes even of the last terrible war. Here, as in Wordsworth's beloved lakeland,

> The duck dabbles mid the rustling sedge
> And feeding pike starts from the water's edge
> And heron, as resounds the trodden shore,
> Shoots upward, darting his long neck before.



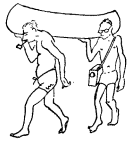
The virgin wildness of this stretch of country is something rarely found in the very heart of old Europe. There is a strange contrast between the character of the landscape and its geographical situation and, to the naturalist's eye, this contrast is emphasized by the presence of a number of American plants and animals which have been introduced. The American golden rod (*Solidago virgoaurea*) dominates the landscape above water as does *Elodea canadensis* below the surface: American sun perch (*Eupomotis gibbosus*) and catfish (*Amiurus nebulosus*) are common in some backwaters; and something heavy and ponderous in the figure of our stags betrays, to the initiated, that Francis Joseph I, in the heyday of his hunting life, introduced a few hundred head of wapiti to Austria. Muskrats are abundant, having made their way down from Bohemia, where they were first released in Europe, and the loud splash of their tails, when they smack the surface of the water as a warning signal, mingles with the sweet notes of the European oriole.

To all this, you must add the picture of Mother Danube who is little sister to the Mississippi and imagine the River itself with its

broad, shallow, winding bed, its narrow navigable channel that changes its course continuously, unlike all other European rivers, and its mighty expanse of turbulent waters that alter their colours with the season, from turbid greyish yellow in spring and summer to clear blue-green in late autumn and winter. The "Blue Danube", made famous by our popular songs, exists only in the cold season.

Now imagine this queerly mixed strip of river landscape as being bordered by vine-covered hills, brothers to those flanking the Rhine, from whose crests the two early mediaeval castles of Greifenstein and Kreuzenstein look down with serious mien over the vast expanse of wild forest and water. Then you have before you the landscape which is the setting of this story-book, the landscape which I consider the most beautiful on earth, as every man should consider his own home country.

One hot day in early summer, when my friend and assistant Dr Seitz and I were working on our greylag goose film, a very queer procession slowly made its way through this beautiful landscape, a procession as wildly mixed as the landscape itself. First came a big red dog, looking like an Alaskan husky, but actually a cross between an Alsatian and a Chow, then two men in bathing trunks carrying a canoe, then ten half-grown greylag goslings, walking with all the dignity characteristic of their kind, then a long row of thirteen tiny cheeping mallard ducklings, scurrying in pursuit, forever afraid of being lost and anxiously striving to keep up with the larger animals. At the end of the procession marched a queer piebald ugly duckling, looking like nothing on earth, but in reality a hybrid of ruddy sheldrake and Egyptian goose. But for the bathing trunks and the moving picture camera slung across the shoulders of one of



the men, you might have thought you were watching a scene out of the garden of Eden.

We progressed very slowly, as our pace was set by the weakest among our little mallards, and it took us some considerable time to get to our destination, a particularly picturesque backwater, framed by blossoming snowballs and chosen by Seitz to "shoot" certain scenes of our greylag film. When we arrived, we at once got down to business. The title of the film says, "Scientific direction: Dr Konrad Lorenz. Camera: Dr Alfred Seitz". Therefore I at once proceeded to direct scientifically, this for the moment consisting in lying down on the soft grass bordering the water and sunning myself. The green water-frogs were croaking in the lazy way they have on summer days, big dragon flies came whirling past and a black-cap warbled its sweetly jubilant song in a bush not three yards from where I lay. Farther off, I could hear Alfred winding up his camera and grumbling at the little mallards who forever kept swimming into the picture, while for the moment he did not want anything in it but greylags. In the higher centres of my brain, I was still aware that I ought to get up and help my friend by luring away the mallards and the Ruddy-Egyptian, but although the spirit was willing the flesh was weak, for exactly the same reason as was that of the disciples in Gethsemane: I was falling asleep. Then suddenly, through the drowsy dimness of my senses, I heard Alfred say, in an irritated tone: "Ranganganganga, ranganganganga—oh, sorry, I mean—quahg, gegegegeg, Quahg, gegegegeg!" I woke laughing: he had wanted to call away the mallards and had, by mistake, addressed them in greylag language.

It was at that very moment that the thought of writing a book first crossed my mind. There was nobody to appreciate the joke, Alfred being far too preoccupied with his work. I wanted to tell it to somebody and so it occurred to me to tell it to everybody.

And why not? Why should not the comparative ethologist who makes it his business to know animals more thoroughly

than anybody else, tell stories about their private lives? Every scientist should, after all, regard it as his duty to tell the public, in a generally intelligible way, about what he is doing.

There are already many books about animals, both good and bad, true and false, so one more book of true stories cannot do much harm. I am not contending, though, that a good book must unconditionally be a true one. The mental development of my own early childhood was, without any doubt, influenced in a most beneficial way by two books of animal stories which cannot, even in a very loose sense, be regarded as true. Neither Selma Lagerlof's *Nils Holgersson*, nor Rudyard Kipling's *Jungle Books* contain anything like scientific truth about animals. But poets such as the authors of these books may well avail themselves of poetic licence to present the animal in a way far divergent from scientific truth. They may daringly let the animal speak like a human being, they may even ascribe human motives to its actions, and yet succeed in retaining the general style of the wild creature. Surprisingly enough, they convey a true impression of what a wild animal is like, although they are telling fairy tales. In reading those books, one feels that if an experienced old wild goose or a wise black panther could talk, they would say exactly the things which Selma Lagerlof's Akka or Rudyard Kipling's Bagheera say.

The creative writer, in depicting an animal's behaviour, is under no greater obligation to keep within the bounds of exact truth than is the painter or the sculptor in shaping an animal's likeness. But all three artists must regard it as their most sacred duty to be properly instructed regarding those particulars in which they deviate from the actual facts. They must indeed be even better informed on these details than on others which they render in a manner true to nature. There is no greater sin against the spirit of true art, no more contemptible dilettantism than to use artistic licence as a specious cover for ignorance of fact.

I am a scientist and not a poet and I shall not aspire, in this

little book, to improve on nature by taking any artistic liberties. Any such attempt would certainly have the opposite effect, and my only chance of writing something not entirely devoid of charm lies in strict adherence to scientific fact. Thus, by modestly keeping to the methods of my own craft, I may hope to convey, to my kindly reader, at least a slight inkling of the infinite beauty of our fellow creatures and their life.

Altenberg, January 1950 KONRAD Z. LORENZ