

# A brilliant examination of man's most basic instinct—the desire for mutual aid and trust

If, as Darwin suggests, evolution relentlessly encourages the survival of the fittest, why are humans impelled to live in cooperative, complex societies? This fascinating examination of the roots of human trust and virtue reveals the results of recent studies that suggest that self-interest and mutual aid are not at all incompatible. In fact, our cooperative instincts may have evolved as part of mankind's natural *selfish* behavior—by exchanging favors we can benefit ourselves as well as others.

Brilliantly orchestrating the newest findings of geneticists, psychologists, and anthropologists, *The Origins of Virtue* re-examines the everyday assumptions upon which we base our actions towards others, whether we are nurturing parents, siblings, or trade partners. With the wit and brilliance of *The Red Queen*, his acclaimed study of human and animal sexuality, Matt Ridley shows us how breakthroughs in computer programming, microbiology, and economic theory have all played their role in providing us with a unique perspective on how and why we relate to each other. "Society," he remarks, "works not because we have consciously invented it, but because it is an ancient product of our evolved predispositions. It is literally in our nature."

Author of *The Red Queen* and *The Meme Machine*  
and frequent contributor to *Nature*, *Scientific American*,  
and *Time* magazine

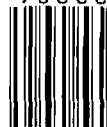


A PENGUIN BOOK  
Science

ISBN 0-14-026445-0



9 0000 >



U.K. £8.99  
CAN. \$18.99  
U.S.A. \$13.95

<http://www.penguinputnam.com>

9 780140 264456

Read 980614

PENGUIN BOOKS

## THE ORIGINS OF VIRTUE

Matt Ridley's last book, *The Red Queen* (Penguin), was short-listed for the Rhône-Poulenc Prize for science books and the Writers' Guild Award for nonfiction. He obtained his D.Phil. in zoology from Oxford University, and worked as science editor, Washington correspondent, and American editor for the *Economist*. A research fellow of the Institute of Economic Affairs and a Trustee of the International Centre for Life, he lives in Northumberland, England, with his wife, a university reader, and son.

---

### Praise for *The Origins of Virtue*

"[Matt Ridley] manages to combine a scholarly approach with a great dash and wit, which puts him well ahead of the field; stimulating and great fun."

—Max Wilkinson, *Financial Times*

"In an era in which biological science is challenging traditional ethics, he has raised the debate to a new level of seriousness and importance."

—John Cornwell, *The Times*

"The book is extremely well written with the sort of anecdotal detail and wit that make for lively reading even when the most abstract topics are being treated."

—Frans B.M. de Waal, *Nature*

"If my *Selfish Gene* were to have a volume two devoted to humans, *The Origins of Virtue* is pretty much what I think it ought to look like."

—Richard Dawkins

Matt Ridley

THE ORIGINS  
OF VIRTUE

Human Instincts and the  
Evolution of Cooperation



PENGUIN BOOKS

PENGUIN BOOKS

Published by the Penguin Group  
Penguin Putnam Inc., 375 Hudson Street,  
New York, New York 10014, U.S.A.  
Penguin Books Ltd, 27 Wrights Lane,  
London W8 5TZ, England  
Penguin Books Australia Ltd,  
Ringwood, Victoria, Australia  
Penguin Books Canada Ltd, 10 Alcorn Avenue,  
Toronto, Ontario, Canada M4V 3B2  
Penguin Books (N.Z.) Ltd, 182-190 Wairau Road,  
Auckland 10, New Zealand

Penguin Books Ltd, Registered Offices:  
Harmondsworth, Middlesex, England

First published in Great Britain by Penguin Books Ltd 1996  
First published in the United States of America by Viking Penguin,  
a division of Penguin Books USA Inc. 1997  
Published in Penguin Books 1998

10 9 8 7 6 5 4 3 2 1

Copyright © Matt Ridley, 1996  
All rights reserved

Illustrations by Nancy Tolford

THE LIBRARY OF CONGRESS HAS CATALOGUED THE VIKING AMERICAN EDITION AS FOLLOWS:  
Ridley, Matt.

The origins of virtue: human instincts and the evolution of cooperation / Matt Ridley.  
p. cm.

Includes bibliographical references and index.

ISBN 0-670-87449-3 (hc.)

ISBN 0 14 02.6445 0 (pbk.)

1. Evolution (Biology) 2. Altruism. 3. Ethics, Evolutionary. I. Title.  
QH366.2.R527 1997

303.5—dc20 96-44907

Printed in the United States of America  
Set in Sabon

Except in the United States of America, this book is sold subject to  
the condition that it shall not, by way of trade or otherwise, be lent,  
re-sold, hired out, or otherwise circulated without the publisher's  
prior consent in any form of binding or cover other than that in  
which it is published and without a similar condition including  
this condition being imposed on the subsequent purchaser.

# Contents

<i>Acknowledgements</i>	vii
Prologue	i
CHAPTER ONE The Society of Genes	9
CHAPTER TWO The Division of Labour	35
CHAPTER THREE The Prisoner's Dilemma	51
CHAPTER FOUR Telling Hawks from Doves	67
CHAPTER FIVE Duty and the Feast	85
CHAPTER SIX Public Goods and Private Gifts	103
CHAPTER SEVEN Theories of Moral Sentiments	125
CHAPTER EIGHT The Tribal Primates	149
CHAPTER NINE The Source of War	171
CHAPTER TEN The Gains from Trade	195
CHAPTER ELEVEN Ecology as Religion	211
CHAPTER TWELVE The Power of Property	227
CHAPTER THIRTEEN Trust	247
<i>Sources and Notes</i>	267
<i>Index</i>	285

# *Acknowledgements*

The words in this book are entirely my own; but the insights and ideas belong mostly to other people. My greatest debt is to those who shared their thoughts and discoveries with me so generously. Some submitted to long interrogations or sent papers and books, some gave moral or practical support and some read or criticized drafts of chapters. I thank them all sincerely.

They include: Terry Anderson, Christopher Badcock, Roger Bate, Laura Betzig, Roger Bingham, Monique Borgehoff Mulder, Mark Boyce, Robert Boyd, Sam Brittan, Stephen Budiansky, Stephanie Cabot, Elizabeth Cashdan, Napoleon Chagnon, Bruce Charlton, Dorothy Cheney, Jeremy Cherfas, Leda Cosmides, Helena Cronin, Lee Cronk, Clive Crook, Bruce Dakowski, Richard Dawkins, Robin Dunbar, Paul Ekman, Wolfgang Fikentscher, Robert Frank, Anthony Gottlieb, David Haig, Bill Hamilton, Peter Hammerstein, Garrett Hardin, John Hartung, Toshikazu Hasegawa, Kristen Hawkes, Kim Hill, Robert Hinde, Mariko Hiraiwa-Hasegawa, David Hirshleifer, Jack Hirshleifer, Anya Hurlbert, Magdalena Hurtado, Lamar Jones, Hillard Kaplan, Charles Keckler, Bob Kentridge, Desmond King-Hele, Mel Konner, Robert Layton, Brian Leith, Mark Lilla, Tom Lloyd, Bobbi Low, Michael McGuire, Roger Masters, John Maynard Smith, Gene Mesher, Geoffrey Miller, Graeme Mitchison, Martin Nowak, Elinor Ostrom, Wallace Raven, Peter Richerson, Adam Ridley, Alan Rogers, Paul Romer, Garry Runciman, Miranda Seymour, Stephen Shennan, Fred Smith, Vernon Smith, Lyle Steadman, James Steele, Michael Taylor, Lionel Tiger, John Tooby, Robert Trivers, Colin Tudge, Richard Webb, George Williams, Margo Wilson and

Robert Wright. It has been a privilege to see these minds at work and I only hope I have done justice to their ideas.

For their patience and advice, I thank my agents, Felicity Bryan and Peter Ginsberg; my editors and encouragers at Viking Penguin – Ravi Mirchandani, Clare Alexander and Mark Stafford; and several newspaper and magazine editors who gave me the space to try out some ideas in print – Charles Moore, Redmond O’Hanlon, Rosie Boycott and Max Wilkinson.

Above all, and for everything, I thank my wife, Anya Hurlbert.

# Prologue

*In which a Russian anarchist  
escapes from prison*

I was in pain to consider the miserable condition of the old man; and now my alms, giving some relief, doth also ease me.

Thomas Hobbes, explaining why  
he gave sixpence to a beggar.

The prisoner was in a dilemma. As he paced slowly along his accustomed path, he suddenly heard a violin, in the open window of a house overlooking the prison yard. It was playing an exciting Kontski mazurka. The signal! But he was at that point in his walk farthest from the prison gate. His escape plan must work the first time or not at all, for it depended upon surprising the guards.

Now he had to shed his heavy dressing-gown, turn and run towards the open gate of the prison before the guards could catch him. The gate was open to receive a regular delivery of firewood. Once outside, his friends would whisk him away through the streets of St Petersburg in a carriage. The plans had been carefully laid, and relayed to the prisoner in cipher in a message hidden in a watch delivered to him by a woman visitor. His friends were posted along the street for two miles, each giving a different signal to the next that the streets were clear of traffic. The violin was the signal that the street was clear, the carriage was in place, the guard at the hospital gate close to the carriage was being engaged in deep, misleading conversation by the prisoner's confederate on the subject of how parasites appear under the microscope (research had revealed that the guard's hobby was microscopy), and that all was ready.

But one slip and he would never have another chance. He would

probably be returned from the St Petersburg military hospital jail to the dark, damp, enfeebling gloom of the Peter and Paul fortress, where he had already spent two lonely, scurvy-ridden years. So he must choose his moment carefully. Would the mazurka continue until he reached the point in the path nearest the prison gate? When should he run?

With trembling tread he paced back along the path towards the prison gate. He reached the end of the path and turned to look at the sentry who was following him: the man had stopped five paces behind. The violin was still playing (and well, he thought).

Now! With the two quick motions he had practised a thousand times, he flung off his cumbrous garment and broke into a run. The sentry gave chase, flinging his rifle forwards to strike the prisoner down with the bayonet. But desperation lent the prisoner strength and he reached the entrance unscathed and a few paces ahead of his pursuer. Through the gate he hesitated for a second on seeing that the carriage was occupied by a man in a military cap. Sold to the enemy! he thought. But then he noticed the sandy whiskers of his friend, the tsaritsa's personal physician and a secret revolutionary, beneath the cap; he leapt aboard. The cab sped away into the city, pursuit being hampered by his friends who had hired all nearby cabs. They drove to a barber's shop, shaved off the prisoner's beard and by evening were ensconced in one of the most fashionable of St Petersburg's restaurants, where the secret police would never even think of looking.

### Mutual aid

Much, much later, the prisoner would remember the fact that he owed his freedom to the courage of others: the woman who brought the watch, the woman who played the violin, the friend who drove the carriage and the physician who sat inside it, all the various confederates who kept the streets clear of traffic while he made good his escape. It was a team effort that sprang him from jail, and the memory was to ignite in his mind a whole theory of human evolution.

Prince Peter Kropotkin is remembered today, if at all, as an anarchist. But his escape from a tsarist prison in 1876 was the most dramatic and notable moment in a long, controversial and public life. From an early age the prince had been marked out for distinction. The son of a distinguished aristocratic general, when only eight years old he was noticed by Tsar Nicholas I at a ball, where he was a page dressed in Persian costume, and ordered to join the Corps of Pages, Russia's most select military academy. In the Corps he excelled, and was picked as the sergeant, a post that carried the job of personal page to the tsar himself (by now Alexander II). A glittering military or diplomatic career lay before him.

But Kropotkin, a brilliant mind infected with free-thinking by a French tutor, had other ideas. Joining a scandalously unfashionable Siberian regiment, he spent several years exploring the far eastern reaches of Siberia, pioneering several new routes through the mountains and river gorges of that land and developing his own precocious theories about the geology and history of the Asian continent. He returned to St Petersburg a geographer of note and, disgusted by the political prisons he had seen, a secret revolutionary. After a visit to Switzerland, where he fell under the spell of the anarchist Michael Bakunin, he joined an underground circle of anarchists in the Russian capital, and worked to foment the revolution. Sometimes he went straight from dining at the Winter Palace to meetings where he could agitate in disguise among the workers and peasants. Under the pseudonym Borodin, he published inflammatory pamphlets and developed great renown as a firebrand speaker.

When the police eventually caught up with Borodin, and he was revealed to be none other than the renowned Prince Kropotkin, the tsar and all his court were shocked and furious. They were even more angry when, two years later, he escaped from prison in so flamboyant a manner and travelled undetected into exile. He lived successively in England, Switzerland, France and eventually, when nowhere else would take him, in England again. There he turned gradually from agitation to more judicious philosophical writing and speaking on behalf of the anarchist cause, and inveighing against the rival creed of Marxism, which he felt was intent on reinventing the