

# CONTENTS

Preface	xiii
Acknowledgments	xix
<b>1</b>	<b>BIOLOGY AND THE BACKGROUND OF MORAL SYSTEMS</b>
The Evolutionary Approach	1
<i>Introduction</i>	1
<i>Sociobiology and Ideology</i>	4
<i>Meanings and Misinterpretations</i>	6
<i>Proximate Causes and the Reductionism of Evolutionary Biology</i>	13
<i>The Problem of Culture</i>	21
<i>The Problem of Resistance to Self-Understanding</i>	30
Human Interests and Their Conflicts: What Lifetimes Are About	33
<i>What Are Human Interests?</i>	34
<i>Life Interests as Reproductive</i>	37
<i>Lifetimes as Effort</i>	40
Reproduction and Senescence: Why Lifetimes Are Finite	42
<i>The Older Theories of Senescence</i>	43
<i>Williams' Pleiotropic Theory of Senescence</i>	46
<i>The Nature and Extent of Pleiotropy</i>	49
<i>The General Shapes of Mortality Curves</i>	52
<i>The Effect of Mortality Rates on Senescence</i>	53
<i>Male and Female Mortality</i>	54
<i>Semelparity, Iteroparity, and Senescence</i>	56
<i>Parental Care and Offspring Replacement</i>	59
<i>The Wonderful One-Hoss Shay Effect</i>	61
<i>Summary</i>	63
Reproduction and Cooperation: Special Cases	63
<i>Genetic Individuality and Individuality of Interests</i>	64
<i>The Pinnacles of Ultrasociality: How They Evolved</i>	65
<i>Other Special Cases of Cooperation</i>	69
<i>Monogamy and Reproductive Opportunity Leveling</i>	71
<i>Conflicts of Interest and Deception in Communication</i>	73

## 2 A BIOLOGICAL VIEW OF MORALITY

Conflicts and Confluences of Interest: A Theory of Moral Systems	77
<i>Conflicts of Interests</i>	77
<i>Why Do Humans Live in Groups?</i>	79
<i>Classifying Human Effort: The "Atoms" of Sociality</i>	81
<i>Philosophy and Conflicts of Interest</i>	88
<i>Moral Systems as Systems of Indirect Reciprocity</i>	93✓
<i>Where Do Rules Come From</i>	96
<i>Discriminate and Indiscriminate Beneficence</i>	97
Morality and the Human Psyche	107
<i>Hypotheses About the Evolution of Consciousness</i>	110
<i>Consciousness and Deception</i>	114
<i>Self-Deception</i>	117
<i>Myths and Self-Images</i>	126
Life History Theory and the Ontogeny of Moral Behavior	129
<i>Introduction</i>	130
<i>Kohlberg's Stages, with an Evolutionary Hypothesis for Each</i>	131
General Conclusions	139

## 3 MORALITY AS SEEN BY PHILOSOPHERS AND BIOLOGISTS

Introduction	145
The Moral Philosophers	146
<i>Rationality and Self-Interest</i>	146
<i>Misunderstandings of Reciprocity</i>	153
<i>Proximate and Ultimate Mechanisms and Self-Sacrifice</i>	161
The Biologist-Philosophers	164
<i>The Naturalistic Fallacy</i>	165
<i>Darwin's Group Selection Theory and Fisher's Alternative</i>	168
<i>T. H. Huxley, and Morality as Contrary to Evolution</i>	170
<i>Darwin, Keith, and Human Evolution in Groups</i>	171
The Philosophers of Biology	177
Morality and Law	180
Morality and Democracy	186

Contents	ix
The Goal of Universal Beneficence	190
Summary	193
Conclusions	194
<b>4 APPLYING THE BIOLOGICAL VIEW OF MORALITY</b>	
Morality and Openness in the Pursuit of Truth: Science, Law, and God as the Models	197
<i>Introduction</i>	197
<i>God and Science as Truth-Seeking</i>	200
<i>Summarizing Hypotheses</i>	207
Modeling Value Systems and Maintaining Indirect Reciprocity	208
<i>The Rights of Embryos and the Moribund</i>	208
<i>The Rights of Women and Men</i>	216
<i>The Rights of Children and Parents</i>	221
<i>The Perils of Error and Unrecognized Biases</i>	222
<i>Conclusions</i>	226
Arms Races, Human and Otherwise	227
<i>Human Arms Races Compared to Natural and Sexual Selection</i>	227
<i>Are There Precedents for Arms Race Resolutions?</i>	231
<i>Proposed Solutions to the International Arms Race</i>	233
<i>Knowledge of the Physical Universe, Ignorance of the Social         One</i>	237
<i>Deception and Misinformation</i>	239
<i>Partial Brakes on the Arms Race</i>	240
<b>5 CONCLUSIONS</b>	253
Epilogue	259
Bibliography	265
Name Index	281
Subject Index	287

## LIST OF ILLUSTRATIONS

### Figures

1.1. Numbers of species with different life lengths	39
1.2. A hypothetical human lifetime, showing different kinds of effort and changes in reproductive value	41
1.3. Effects of mortality on proportions of individuals remaining in a population	47
1.4. Effects of reproductive effort and mortality on the proportion of an individual's reproduction remaining	48
1.5. Mortality rates in America in 1950	52
1.6. Mortality rates for Taiwanese in the late 19th century	53
1.7. A classification of kinds of communicative signals	74
2.1. A speculation about social interactions in different kinds of societies	101

### Tables

2.1. Kinds of effort and their outcomes	83
2.2. Indirect reciprocity: Why altruism spreads	86
2.3. Indirect reciprocity: Why rules spread	86
2.4. Indirect reciprocity: Why cheating spreads	86
2.5. Interactions of motivations and outcomes in determining morality and immorality of social acts	98–99