

THE PATHOLOGY OF MAN
A STUDY OF HUMAN EVIL

ALSO BY STEVEN JAMES BARTLETT

Reflexivity: A Source Book in Self-Reference

*When You Don't Know Where to Turn
A Self-Diagnosing Guide to Counseling and Therapy*

Self-Reference: Reflections on Reflexivity (co-edited with Peter Suber)

Conceptual Therapy: An Introduction to Framework-Relative Epistemology

Metalogic of Reference: A Study in the Foundations of Possibility

Validity: A Learning Game Approach to Mathematical Logic

THE PATHOLOGY OF MAN

A STUDY OF HUMAN EVIL

by

STEVEN JAMES BARTLETT



with a FOREWARD by

ERIC A. ZILLMER
and
IRVING GREENBERG

Published and Distributed Throughout the World by

CHARLES C THOMAS • PUBLISHER, LTD.
2600 South First Street
Springfield, Illinois 62704

This book is protected by copyright. No part of
it may be reproduced in any manner without
written permission from the publisher.

©2005 by CHARLES C THOMAS • PUBLISHER, LTD.

ISBN 0-398-07557-3 (hard)
ISBN 0-398-07558-1 (paper)

Library of Congress Catalog Card Number: 2004063718

With THOMAS BOOKS careful attention is given to all details of manufacturing and design. It is the Publisher's desire to present books that are satisfactory as to their physical qualities and artistic possibilities and appropriate for their particular use. THOMAS BOOKS will be true to those laws of quality that assure a good name and good will.

*Printed in the United States of America
R-3-CAMRDY*

Library of Congress Cataloging-in-Publication Data

Bartlett, Steven J.

The pathology of man : a study of human evil / by Steven James Bartlett
; with a foreword by Eric A. Zillmer and Irving Greenberg.

p. cm.

Includes bibliographical references (p.) and index.

ISBN 0-398-07557-3 -- ISBN 0-398-07558-1 (pbk.)

1. Good and evil--Psychological aspects. 2. Pathology. I. Title.

BF789.E94B37 2005

170--dc22

2004063718

*Dedicated to the few
whose qualities of person and of mind,
whose strength of conviction, courage, and aversion to cruelty,
keep them from aggression, blind conformity, obedience, and complicity.*

FOREWORD

by ERIC A. ZILMER

Carl R. Pacifico Professor of Neuropsychology, Drexel University, and author of
The Quest for the Nazi Personality: A Psychological Investigation of Nazi War Criminals

Steven James Bartlett's *The Pathology of Man* marks the most comprehensive examination of human evil to date. Drawing from different fields of study, including psychology and epistemology, Bartlett sets out on a *Tour de Force* of delineating the parameters on human evil.

Bartlett asks the question how exactly is it possible for humans to engage in acts of destruction, genocide, mass murder, and torture? This is an ambitious goal but one that Bartlett masters by writing with great clarity and by carefully reexamining published accounts together with providing a fresh perspective on the topic.

The resulting text is a most welcomed addition to the field and provides for fascinating reading. *The Pathology of Man* is a timely, scholarly, and important piece of work that should appeal to anyone who is interested in understanding human evil.



by IRVING GREENBERG

President, Jewish Life Network/Steinhardt Foundation
Chairman, United States Holocaust Memorial Council 2000-2002

This book is stunning, upsetting, gripping. A generation after the Holocaust and a century after the greatest mass murders and destructive wars of all time, Bartlett sets out a theory of human evil as a ubiquitous disease and humankind as the pathogen/parasite which is rapidly spreading and, in the process, killing its hosts (be they other humans, other species of life, and nature itself).

While Bartlett's review of theories of human evil behavior and of the literature is illuminating and often fascinating, the conclusions are unrelenting and devastating.

The universal character of human evil and the likelihood of its further spread in the form of destructive and genocidal acting out is affirmed. The book offers no anodyne, no easy choices, and warns against the pathology of hope, that is, escape into wish fulfillment rather than facing up to the issue.

Nevertheless, the book is a moral act of the highest order. In essence, Bartlett insists that the first step to check a highly dangerous fatal disease is to diagnose its presence, to confront all evasions and refute all denials of its virulence. This paves the way for the development of possible cures. If the book leaves us with no respite and no paths of redemption from evil, it leaves us troubled enough and aroused enough to want to do something. That is no small contribution.

These prefatory comments would be incomplete without mentioning the erudition, the intellectual insight and playfulness, the gallows humor and the self-restraint which deepen and lighten this book.

ACKNOWLEDGMENTS

Research for this book spans many years, as do relationships with people whose encouragement and guidance I would like to acknowledge here. The acknowledgments I would like to make relate to the three main disciplines which are the focus of this book and which I have had the opportunity to study: pathology, psychology, and epistemology. Special thanks are due to

MELVIN CALVIN, Nobel Laureate in Chemistry of the University of California at Berkeley, for his memorable and warm encouragement in connection with my search for new antibiotics.

THOMAS N. FAST for his generous guidance and free run of the microbiology lab at the University of Santa Clara.

WILLIAM ALTUS, of the University of California, Santa Barbara, for his insightful direction as my interests in pathology grew to include psychiatric pathology.

ROBERT M. HUTCHINS, Founder and Director of the Center for the Study of Democratic Institutions, for his encouragement that I would contribute to what, in the introductory volume of the *Great Books of the Western World*, he called "The Great Conversation." His breadth of mind, intellectual sharpness, generous humanity and spirit, and statesmanship in the nearly forgotten meaning of that word are greatly missed.

GABRIEL MARCEL for backing research reported in this book, and for making it possible for me to study with Paul Ricoeur at the Université de Paris.

PAUL RICOEUR, whose wide range of interests and scholarly knowledge, coupled with an intellectual fearlessness and creative capacity, made it possible to turn the usually dry and intellectually humdrum dissertation experience into the development of a method and approach which, now some 40 years later, I am still tilling.

C. F. VON WEIZSÄCKER, Director of the Max-Planck-Institut in Starnberg, Germany, for his support of research reported in Part III of this book. Like Hutchins and Ricoeur, von Weizsäcker was sufficiently at home in a non-compartmentalized openness to inquiry not to be threatened by it. I therefore wish to express my indebtedness to him for offering a supportive environment in which research of this kind could be undertaken.

THOMAS MALONEY, clinical psychology in Clayton, Missouri, who became an important colleague and close friend. I owe much to him, and now to his memory, for his willingness to provide me with a practicum as his co-therapist.

RAPHAEL J. BECVAR for his stimulating teaching, intellectual exchange, and friendship, and whose systems approach to individual psychotherapy and family therapy left an enduring appreciation.

KAREN M. BARTLETT, my wife, love, and friend, for her steadfast support and encouragement over the years, and for the time and intelligence which she devoted to help me to improve the writing of this work.

Above all, PAUL ALEXANDER BARTLETT, novelist-artist and my father, and ELIZABETH BARTLETT, poet and my mother, for a culturally rich upbringing in which the values of intellectual courage and honesty, independence of mind, and compassion were foremost.

Finally, I am indebted to the country of my birth, Mexico, for making clear to me that fine education relies less on modern classrooms and expensive facilities, and more upon respect for learning and culture, values that cannot be purchased. I wish to acknowledge my indebtedness to small rural schools in Mexico which communicated these values to me. Mexico has comparatively few published psychologists and philosophers to its credit, especially who publish in English. Although I have dual citizenship, I affiliate with Mexico whatever intellectual contributions I have been able to make.



CREDITS

Thanks are due to these authors and publishers for permission to use the following:

The graph of world population growth, in Chapter 17, from *Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future* by Donella H. Meadows, Dennis L. Meadows, and Jørgen Randers. Copyright 1992 by Donella H. Meadows, Dennis L. Meadows, and Jørgen Randers. Used by permission of Chelsea Green Publishing Company.

CONTENTS

FOREWORD BY ERIC A. ZILLMER AND IRVING GREENBERG.....	vii
ACKNOWLEDGMENTS.....	ix
INTRODUCTION.....	3

PART I: PATHOLOGY AND MAN

OVERVIEW OF PART I.....	11
CHAPTER 1: PATHOLOGY AND THEORIES OF DISEASE.....	13
Disease That Is Not Metaphor.....	13
The Nature of Pathology.....	14
A Short History of Pathology.....	14
Infectiousness, Contagion, and Antibiosis.....	16
Types of Organic Disease.....	18
Theories of Disease.....	19
Reflections on Theories of Disease.....	22
CHAPTER 2: PATHOLOGY, POLITICS, AND CLINICAL JUDGMENT.....	25
The Politics of Disease.....	25
Anti-Semitism and Racism as Diseases.....	30
Social Consequences of Disease Labeling.....	33
The Role of Clinical Judgment.....	34
CHAPTER 3: FRAMEWORK-RELATIVE PATHOLOGY.....	37
The Framework-relative Theory of Disease.....	37
General Varieties of Pathology.....	40
The Concept of Mental Illness.....	41
Social Pathology.....	43
Conceptual Pathology.....	44
CHAPTER 4: EPIDEMIOLOGY, UNIVERSAL PATHOLOGY, AND THERAPY.....	46
Basic Concepts of Epidemiology.....	46
The Concept of Universal Disease.....	48

Man as Pathogen	53
Relationships between Therapy and Pathology.....	55
CHAPTER 5: PATHOLOGY AND THE CONCEPT OF EVIL.....	58
Historical Precedents	58
About the Use of the Word ‘Evil’ in This Work.....	65
Diagnosis and Pathology	66
The Pathology of Man: Synopsis of Part I.....	67

PART II: THE PSYCHOLOGY OF HUMAN EVIL

OVERVIEW OF PART II.....	73
CHAPTER 6: FREUD AND THE PATHOLOGY OF AGGRESSION.....	75
The Dynamics of Human Destructiveness.....	75
Psychological Projection.....	77
The Gratifications of War and Its Inevitability	81
The Pathology of Civilization	83
Closed Systems of Belief	84
The Therapeutic Treatment of Human Aggression	87
Freud and Human Evil.....	89
No Consolations.....	90
CHAPTER 7: JUNG’S UNDERSTANDING OF HUMAN EVIL.....	91
Jung’s Starting Point.....	92
Jung’s Account of Human Evil	93
Jung’s Indictment of Humanity	96
Sidestepping Relativism	99
CHAPTER 8: RECENT PSYCHIATRY AND HUMAN EVIL: MENNINGER, FROMM, AND PECK.....	103
Karl A. Menninger.....	103
Erich Fromm	106
Morgan Scott Peck	112
Recent Psychiatry and Human Evil	115
CHAPTER 9: THE QUANTITATIVE HISTORY OF HUMAN SELF-DESTRUCTIVENESS.....	118
Quincy Wright, Pitirim Aleksandrovich Sorokin, and Nicholas Rashevsky.....	119
Meteorology and Deadly Human Conflicts: Lewis Fry Richardson.....	123
Richardson’s Analysis of Deadly Quarrels	124
Richardson’s <i>Mathematical Psychology of War</i>	127
Richardson’s Epidemic Theory of War, War-moods, and War-weariness	129
Richardson’s Research and the Outlook for the Future	131
In Conclusion.....	133

CHAPTER 10: THE PATHOLOGY OF A SPECIES: ETHOLOGY AND HUMAN EVIL	135
Konrad Lorenz and Ethology.....	136
Epistemology and Gestalt Perception	137
The Hierarchy of Human Capabilities.....	139
Pathology as a Source of Knowledge	140
Human Aggression.....	142
Lorenz's Critics.....	145
Mankind's Future.....	146
Irenäus Eibl-Eibesfeldt.....	148
CHAPTER 11: TOWARD A UNIFIED PSYCHOLOGY OF GENOCIDE.....	152
Introduction	152
Conditions That Contribute to Genocide.....	155
The Individual's Emotional and Conceptual Makeup.....	155
The Individual's Personal Reality	159
The Individual as Part of a Social Group.....	160
Summary: The Continuum of Predisposing Conditions.....	163
CHAPTER 12: THE HOLOCAUST AND HUMAN EVIL.....	165
The Pathology of Jew-hatred: The Human Need for Prejudice and Persecution.....	166
Broadening the Culpability of the Holocaust: Some Call It Madness, but It Is Normal.....	168
The Psychology of the Nazi Leaders	172
Healers in the Service of Mass Murder: The Nazi Doctors.....	175
Those Who Stand By and Do Nothing: Allowing the Events to Happen	177
The Psychology of Those Who Refuse to Participate in Mass Murder	179
Those Who Actively Resist	182
What Genocide Has Taught Us	184
Proposed Solutions	186
Moral Relativism and the Holocaust: Is One Man's Genocide Another's Ethnic Cleansing?.....	187
CHAPTER 13: THE PSYCHOLOGY OF TERRORISM AND HUMAN EVIL.....	189
Introduction	189
The Psychology of Terrorism.....	191
Definitions, the Pervasiveness of Terrorism, and Its Characteristics.....	191
The Framework- and Audience-relativity of Terrorism.....	194
Psychological Hypotheses to Explain Terrorism.....	195
The Mirage of the Terrorist Personality: The Psychological Normality of Terrorists	196
Ideas That Justify Mass Murder.....	199
The Three Psychological Projections of Terrorism: The Enemy, the Ideal Future, and the Afterlife.....	200
Human Evil and Terrorism.....	202
What Psychology Can Contribute to Counterterrorism.....	205
The Inevitability of Terrorism.....	207

CHAPTER 14: THE POPULARITY OF WAR AND ITS ROLE IN HUMAN EVIL	209
Beautiful Beliefs and Ugly Facts	209
The Gratifications of War: Extreme Sport and Sadism	211
War Gives Meaning to Life (and Death)	215
People Want War	216
Human Moral Development and War	218
War: The Lessons Never Learned	219
How Easy It Is to Turn the Ordinary Person into a Killer	220
The Pathology of War	221
The Inevitability of War	224
War and Human Evil	225
CHAPTER 15: “WE ARE SHEEP...” —OBEDIENCE AND HUMAN EVIL	226
Milgram’s Experiments: Obediently Harming Others	227
The Meaning of Milgram’s Work	231
The Psychological Benefits of Obedience	233
Disobedience	234
Conclusion: The Pathology of Obedience	235
CHAPTER 16: THE PHENOMENOLOGY OF HATRED	237
Background	238
The Phenomenology of Hatred: The Hater and His World	240
A Definition of Hatred	240
The Partitioned Reality of Hatred	242
Shand’s Law: Neutralizing Moral Awareness	243
The Emotional Dynamics of Human Hatred	244
People Love to Hate: The Pleasure in Hating	245
The Existential Rewards of Human Hatred	247
The Human Need to Hate	249
The Incapacitating Nature of Hatred	249
The Pathology of Human Hatred	250
CHAPTER 17: THE ECOLOGICAL PATHOLOGY OF MAN	253
The Nature of Parasitism	253
Parasitology as a Branch of Ecology	255
The World as General Systems Host	257
<i>Homo parasiticus</i>	258
The Population Biology of Human Parasitism	260
The Exterminator Species’ Biodiversity Holocaust	263
Man, the Global Pathogen	268
In Summary	270
CHAPTER 18: MORAL INTELLIGENCE AND THE PATHOLOGY OF HUMAN STUPIDITY	272
The Incidence of High Moral Development	272
The Moral Bridge Problem: The Gap between Moral Reasoning and Moral Behavior	276
Moral Intelligence	277

The Psychology of Human Stupidity	280
A Brief History of the Psychology of Human Stupidity	281
The Pathology of Human Stupidity	286

PART III: THE CONCEPTUAL PATHOLOGY OF MAN

OVERVIEW OF PART III.....	293
CHAPTER 19: THE PATHOLOGY OF EVERYDAY THOUGHT.....	295
Ideopathy, or Disorders of Thought	295
Collingwood's Hypothesis.....	296
Delusional Misidentifications.....	297
Philosophy as Therapy.....	299
Conceptual Pathology and Human Evil.....	300
Epistemological Projection	302
The Delusion of Transcendence and Human Evil	303
CHAPTER 20: RELATIVISM, FRAMEWORK-RELATIVITY, AND HUMAN EVIL.....	305
Relativism as a Thought Disorder.....	306
The Human Evil of Relativism.....	307
Morality beyond Moral Relativism	308
Preaching to the Already Converted.....	311
CHAPTER 21: REFLECTIONS.....	313
Looking Back	313
This Study's Conclusions.....	315
Blinders and Recalcitrance	316
The Pathology of Hope	317
The Pathology of Forgiveness	320
The Purpose of This Book.....	320
Resistance to This Study's Conclusions.....	322
REFERENCES.....	325
INDEX.....	343
ABOUT THE AUTHOR.....	361

THE PATHOLOGY OF MAN
A STUDY OF HUMAN EVIL

INTRODUCTION

Destructiveness and cruelty...constitute a paradox: they express life turning against itself.... They are the only true perversion. Understanding them does not mean condoning them. But unless we understand them, we have no way to recognize how they may be reduced, and what factors tend to increase them. – Erich Fromm (1973:9)

Human violence, brutality, hatred, and cruelty—expressed in wars, murders, bigotry, and persecution—ought not to surprise us. As this study makes clear, these emotions and behaviors are to be expected, indeed we should be able to foresee them, to predict them, and, perhaps someday, to control them.

We cannot yet control them. As we shall see in the course of this work, most men and women do not welcome such control. Not yet, and perhaps not for a very long time. But at least we can understand the unattractive side of human existence, and in understanding, not passively forgive, but rather stand firm in a willingness to judge, condemn, and act when men and women feel and behave in ways that bring about the intentional suffering of others, and often their own in the process. When a reader puts this book down, he or she should no longer be able to say, “I don’t understand what makes people do such terrible things.” That people do such things is not only not surprising, it is, as we shall see, to be expected.

The topic of evil and rarely the more specialized topic relating to *human* evil have customarily been considered within the frameworks of religion, mythology, literature, symbolism, anthropology, moral philosophy, and ethics. The word ‘evil’ still summons up connotations for many that involve the dark powers of witches and demons, or else theodicy, with its efforts to accommodate or adjust theistic religion to the reality of evil in the world, or perennial philosophical discussions of good and evil, or the disputations of theologians, or the socially concrete descriptions of anthropologists. Mythologies have tried to account for evil, religions have sought to give men and women ways to cope with it, moralities have attempted to lessen it, and literature has narrated accounts of it. Certainly the word ‘evil’ most frequently has these associations, which are irrelevant to this book’s focus, and which I cannot neutralize even if I intend to ignore them. This book is about none of these things: There are no other-worldly spirits to be found within these pages, no moral philosophy, no theological apologetics, no anthropology of symbols and myths. Having subtracted away these connotations, the word ‘evil’ may seem to many to become so deflated and shrunken in upon itself that it stands in need of a clarified, alternative meaning.

In the fields of pathology, psychiatry, and psychology there exist precedents, however, for its descriptive use that avoid these connotations. There, ‘evil’ is used to point to a connection between our species and a group of emotional responses, attitudes, and patterns of thought and behavior that together cause great suffering and destruction, often involve cruelty and aggression, and have resulted and continue to result in countless deaths and

untold individual misery. No author to date, however, has undertaken a comprehensive study of human evil from the standpoint of these disciplines.

There is perhaps no equally neglected subject of such fundamental importance to humanity and to other forms of life that share this world than the subject of human evil. Leading psychologists, including Freud, Jung, Menninger, and Fromm, have long urged the need for its study. But psychological research that has directly confronted human evil has been exceedingly meager. A computerized search, for example, through the holdings of more than ten million volumes in the Library of Congress reveals only a light handful of books relating to the psychology of human evil. One cannot help but feel dumbfounded that this topic of such enormity and consequence has been so little investigated.

Why is there evil in the world? Why is man a creature whose history and personal life are so filled with suffering—suffering for which man himself is so often clearly the cause? The question, Why is there evil?, seems evidently to be on a par with the question, Why is there pain? But the question specifically concerning *human evil* is, as we shall see, inherently different from both of these. There, man is both victimizer and victim, both agent and subject, both he who destroys and inflicts suffering, and he who is destroyed and suffers at his own hand.

It is incontestable that human evil is one of man's most serious and pressing concerns if mankind is to endure. His social history is a bloody continuum of war, mass murder, individual and communal hate crimes, and the grief these have brought to countless millions who remain behind, bereft, to suffer and struggle on. Instead of a reduction in atrocities against life, civilization's march to the beat of progress has witnessed an ugly compounding of these forms of pain during the twentieth century. Two world wars, a multitude of local wars, and genocides in Europe, the Middle East, Central and South America, Asia, and Africa have killed and disabled an incredible number of people. The toll of humanity acting on itself during the twentieth century alone is so large it is impossible for the mind to fathom. More than 100 million lives were lost in wars, and more than one billion people were killed in genocides. (See Chapters 9, 11, 12, and 14.) To this must be added unrecorded numbers of individual and gang murders, judicial executions, infanticide, as well as the other many ways that human beings brutalize one another and deal out suffering. It is easy to lose sight of the fact that what appear on paper as unimaginably large numbers represent individual men, women, and their children whose lives were savagely cut short, or who were permanently maimed, physically or emotionally, for a variety of expressed justifications and because of inarticulate mass hysteria and insanity. The total number of people who, in one century, have suffered at the hands of others or who have been killed is horrifying and overwhelming.

The magnitude of this carnage and cruelty has no precedent in world history. Unfortunately, mass violence is only the larger manifestation of a pattern of human violence, malice, and viciousness that has developed and taken up unquestioned residence in the minds and actions of individual men and women. We have also witnessed the distressing growth of individual violence, brutalities of hate, "thrill murders," vicious hazings, school mass killings, and gang assassinations, which have gained intense momentum during the past decades, many of these crimes concentrated in the juvenile population.

Erich Fromm called such destructiveness and cruelty human evils. But in an age intoxicated by moral relativism, any such judgment, Fromm's included, has been opened to debate. Partially as a result of paralysis brought about by relativism, the destructive manifestations of human hatred, pride, envy, and greed remain unchecked, and are, as this book will make clear, actively encouraged in ways that are far from subtle, but which nonetheless are for the most part ignored both by our religious and political institutions and by reflective

psychology and philosophy.

On the one hand, there exists a huge body of literature about the subject of evil, about goodness and evil, and about their treatment within the world's many mythologies and religious doctrinal viewpoints. This tremendous body of literature has encouraged man to believe that he has explained, that he can cope with, and that he is able ultimately to rationalize the existence of evil in himself and in others of his species.

On the other hand, no studies exist which provide a comprehensive analysis of the psychology of human evil, and none exist that relate an analysis of human thought processes to the psychology of human evil. An understanding of the reasons for man's destructive behavior calls for an examination of both the psychological and epistemological origins of human evil. A psychological study is called for in order to understand what it is about the average human being's world of feelings and behavior that predisposes him or her to evil. An epistemological study is called for to determine what it is about both the average person's patterns of thinking and the specific contents of the individual's mental life that support and encourage human evil. Nowhere in the literature do we find a work devoted to an inclusive, integrative, scholarly study of the psychology and epistemology of human evil. The present book responds to this need. Its principal purposes are these:

(1) The study is solidly grounded within the framework of pathology and the theory of disease. Here the book breaks new ground by offering a clear, empirically based, and theoretically sound understanding of human evil as a widespread, real, non-metaphorical pathology. The book critically evaluates the principal established theories of disease, and formulates a unified, framework-relative theory of disease from the standpoint of which it is appropriate to classify human evil as a pathology which is *not* a deviation from an accepted norm, but rather is a *normal state*. This is a radical departure from the conventional view that pathology must be understood as deviation from normality, and provides the necessary psychological foundation which the banality of human evil has in the past not had.

(2) For the first time, diagnostic judgments concerning human evil that have been expressed by numerous psychiatrists, psychologists, ethologists, and quantitative historians are brought together, discussed, and critiqued. Leading contributors in these areas of research have sought to understand human evil, but they have for the most part considered the topic only in passing, or in the context of general studies of human aggression and destructiveness. In no other work can one find a comprehensive discussion of the subject of human evil as it has been examined by such psychiatrists and psychologists as Freud, Jung, Menninger, Fromm, and Peck, by such psychologically-focused quantitative historians as Wright, Sorokin, Rashevsky, and Richardson, by such ethologists as Lorenz and Eibl-Eibesfeldt, by obedience psychologists Milgram, Miller, and Mixon, by psychologists of genocide and terrorism, and by psychologists who have studied the nature of what I will call "moral intelligence."

(3) For the first time, the author directs attention to mankind's role as a true pathogen, a pathogen no previous pathologist has studied. Here, the concept of human evil is broadened within the framework of disease theory to show that the human species is *auto-pathological* in many ways, destructive to itself and a danger to the continued existence of the species. We shall see that man's psychological constitution and conceptual structure frequently bring about and foster cruelty, suffering, and death, and accomplish these things in a wide variety of sometimes subtle and often very manifest ways. We shall find that mankind is inherently self-injuring and self-destructive; its destructiveness is at times limited to conflicts among individual members of the species, and at others comes to infect entire societies. Within individuals, self-destructive pathology may take the form of suicide; within societies, it may take the form of revolutions or genocide. When explicitly self-destructive forces are not

engaged, human destructiveness is expressed in conflicts between individuals in the many forms of emotional and physical abuse and murder, and between societies in the form of wars. At the same time, the human species is a *global pathogen* in terms of its worldwide destructive effects on other species. A connection is therefore made between the psychiatric-psychological understanding of human evil and ecology. From this standpoint, human evil becomes recognizable as a real, non-metaphorical pathology that results in destruction not only to members of the human species, but to other species as well.

(4) While there has been surprisingly little research specifically devoted to the psychology of human evil, there has been a total absence of research linking an epistemological study of man's characteristic patterns of thought with the results of empirical and humanistic psychology. Here, new ground is also broken by showing how human aggression, destructiveness, and cruelty to members of the species are fostered and maintained by human patterns of thought and by a conceptual vocabulary that encourages a certain interpretation of the world, which itself is pathological. Man is, after all, not only a creature whose behavior expresses what he feels, but what he thinks. The book therefore concludes by considering epistemological pathologies of human thought that underlie much of the pathology of human behavior.

The present study seeks, then, to examine the relationship between a psychological understanding of human evil and an epistemology of characteristically human ways of thinking. The psychology of human evil deals with the affective component in man responsible for human evil; the study's epistemological focus deals with the conceptual vocabulary used by man in his representation and interpretation of reality, which, in turn, affects his attitudes and actions. In the reflexive interplay between thought and feeling—between, that is, the subjects of epistemology and psychology—we find a group of processes that create, promote, and sustain the phenomenon of human evil. The evil which mankind is capable of realizing is a direct outgrowth of his affective and cognitive constitution.

The book is divided into three parts: Part I lays a foundation using central concepts of pathology, theories of disease, and epidemiology. From the standpoint of the resulting framework, human evil is identified as a non-metaphorical and widespread pathology. Part II discusses and analyzes contributions by leading psychiatrists and psychologically-focused researchers that are relevant to the study of human evil. Part III considers the work of several epistemologists—those who have shared a concern to analyze concepts by means that resemble those used in psychotherapy. Here, the goal is to make evident major and deeply rooted patterns of human thought that are associated with the psychological phenomena studied in Part II.

The book's intention in these three parts is to propose a combined psychological-epistemological approach to phenomena which, throughout mankind's history, have shown us to be creatures capable of behavior that is highly destructive—to ourselves and to other forms of life. The book attempts to identify what it is about human psychology and about familiar ways of conceptualizing the world that leads to pathological behavior.

The theory that is developed has a hypothetico-deductive character: From the standpoint of this general theory, we should be surprised if the human species had *not* behaved throughout history as it has; in this way, a form of retrodictive confirmation of the theory is possible. And from the standpoint of the theory proposed, we should expect the continuation of certain specifically human patterns of destructive behavior in the future; here the theory is open to falsification.



There is a strong avoidance-wish among many people that prevents them from recognizing the ugly side of the human species. It is a very nearly automatic resistance, sometimes a repugnance, to consider, even as an abstract possibility, the hypothesis that mankind may in reality not be a source and model of goodness, but rather, and to a significant extent, possesses many of the characteristics that we tend to associate with pathology. This automatic resistance or repugnance usually appears to be both emotional and intellectual in nature. It is deeply rooted—so much so that many people whom one believes to be open-minded and committed to truth in inquiry, as soon as the topic of human evil is brought to their attention, feel called upon to proclaim man's native goodness and the praiseworthy qualities of the species, in a kind of reflex arc that blinds our species to its own failings. This very human *resistance* to view man dispassionately—to judge the extent and degree of his psychological and conceptual attraction to hatred, violence, destructiveness, and cruelty—is itself one of the dominant factors in a dynamic that perpetuates human evil. Man's unwillingness to judge his species impartially and to place the basis for his evil in the clear light of day is one of the key features, and perhaps the cornerstone, of the psychology and epistemology of human evil. There is, as we will see, a profoundly rooted, and paralyzingly entrenching, psychological and epistemological basis for this resistance.

As is normally the case in matters that inflame emotions and cloud the mind, there are multiple causes for this recalcitrance against seeing mankind in a diminished light. There usually is, of course, pride in one's species. There may be psychological denial, a wish to insulate oneself from observations and conclusions unpleasant in nature. There may be self-idealism, the wish and even the need to candy-coat one's interpretation of life. There may be intransigent religious commitments at stake. To allay these forms of resistance, there appears to be a need for the researcher who studies human evil to reassure his readership that, in spite of the restricted focus any study must have, there *do* exist phenomena which fall outside the class of those considered. We do therefore take for granted from the outset the existence of such things as human goodness, human dignity, integrity, and compassion. There exists beauty in the natural world, and in many human creations of poetry, music, and art. There is much that human beings have created that is wonderful, inspiring, and good. Although the focus of this volume is delimited, there is nothing here that denies or depreciates these things. But just as concrete, detailed descriptions of examples of good health are largely irrelevant in a medical compendium of diseases, so are instances of human goodness largely irrelevant to our present focus. The world is many-colored and many-shaded; it is not black or white. Mankind is both good and evil, and individuals exist who exemplify all the shades that nature and society at any time can produce.

If this study successfully gives evidence for the claims it makes, then a strong case against the human species will have been made. But the case against man—and this presumably needs to be emphasized and emphasized again—does not entail that a case *for* man cannot be made. However, *that* case does not need to be made nearly as much as the negative, diagnostic case—for man's capacity to pat himself on the back is endemic and cannot be significantly discouraged. He is, in fact, so much in love with himself and his species that he is blind to many of its shortcomings, prefers to remain so, and will energetically oppose efforts to focus serious attention on them. He therefore considers that anything that paints his portrait in a particularly bad light must express misguided misanthropy.

Readers who do not like the conclusions that this book reaches will doubtless dismiss them by labeling this study and its author misanthropic. This would be a mistake of understanding and judgment. Of course no one can devote years of a life seeking to understand human evil without being affected by the cumulative comprehension of many centuries of bloodshed, the hollow anguish of so many victims, the ease with which ordinary people

agree to become willing participants in group murder, and their recalcitrance to know what they do. I do not believe that anyone should wish to remain unaffected by these things, least of all the investigator himself. The way I have been affected is in my recognition that humanity more frequently scores high in the category of the exceptional, kind, creative individual, and exceedingly low in the categories of group prejudice and hatred, and its resulting herd behavior. The majority is, by definition, not made up of the few who have sought to bring to the world a taste of beauty or the savor of truth. The majority is made up of generally quite ordinary people, each an individual, but most still, as we shall see, comparatively primitive in terms of what will later be called *moral intelligence*. Educational attainment, social status, race, color, and creed do not exempt individual human beings and their groups from moral incapacity and stupidity. The book's conclusions therefore imply a judgment both of the individual, to the extent that he or she exhibits behavior and patterns of thought and emotion that are pathological, and of the human collective, where variations among individuals are averaged out.

There are two divergent purposes in understanding. The highest has always been regarded as a type of understanding that is an end in itself, where the simple act of knowing improves the self and makes more meaningful one's sense of place in the universe. The search for truth for truth's sake comes from this motivation. Then, there is the contrasting purpose of the engineer, who wishes to implement results in order to advance social ends, to progress, to produce utility, and thereby to improve the world.

This study is unapologetically the work of a scholar who wishes to know, for that reason alone. Beyond this, no one can reasonably hope to improve the human condition and the condition of the world without the ability to control, at the very least, humanity's predilection for violence and destruction, the species' runaway reproduction, and its environmental rapacity. This study of human evil is intended as a first step in reaching a level of understanding of ourselves that can perhaps, if sufficient time remains for our species, lead to effective control over our greatest shortcomings.

PART I
PATHOLOGY AND MAN

PART I

PATHOLOGY AND MAN

Pathology and the related concepts of disease, infectiousness, and contagion have traditionally been applied to phenomena that deviate in some way from a set of norms, most frequently norms that are endorsed by society. There are, however, real pathologies that are not deviations from a norm, but rather afflict an entire group. In the case of the human species, the field of pathology has been slow to recognize the existence of universal disease—that is, pathology that afflicts the majority so that a state of disease is a normal condition, not a deviation from health that affects only a minority.

In this section, a framework of understanding is developed in terms of which human evil can be studied using the theoretical resources of pathology. A framework-relative theory of disease is presented which sees individual mental illness and social and conceptual pathology in a new light. From this standpoint, the phenomenon of human evil can be effectively and accurately understood for what it is.

Readers whose main area of interest is the psychology of human aggression and destructiveness may be tempted to skip to Part II. Those who do this are likely to reach an understanding of human evil that is at best fragmentary and incomplete for lack of a unifying theoretical framework. They will see malignant human traits in their particularity, but not the larger picture within which it is compelling to call them pathologies in the true meaning of this word. Part I makes clear how, from the standpoint of the science of pathology, it is legitimate, justified, and of explanatory value to recognize the human species as a pathogen and as pathogenic to itself. This first part of our study is essential to any reader who would see that human evil is a real, non-metaphorical pathology, a pathology that affects billions usually without their knowledge but with their full complicity.

CHAPTER 1

PATHOLOGY AND THEORIES OF DISEASE

DISEASE THAT IS NOT METAPHOR

In many languages there is a common metaphorical way of speaking: It is to label *as a disease* any phenomenon or condition that the speaker wishes to portray in a disparaging light and so emphasize its undesirability. This facile vocabulary of depreciation is not limited to use of the word 'disease', but draws upon a variety of kindred expressions that come from the clinical language of medicine: And so it has become commonplace to speak of rampant commercialism and materialism as "diseases," of city sprawl as a "blight," of "contagious" enthusiasm, and of "infectious" laughter. Or we may label a comedian's humor as "sick," and "sick" also may be a declining stock market and television commercials that are in bad taste. Such metaphorical extensions of language that has a clinical flavor are widespread and often applied unthinkingly.

Metaphorical "diagnosis" is a mental habit to which we have become accustomed, and, like most mental processes that have become automatic, has slipped away from reflective control, becoming a fashion that deadens sensitivity to genuine pathologies. For outside the tangible context of organic/physical disease, when a phenomenon is called a "disease," the prevailing tendency is either to assume a figurative meaning, or to assume that a private fiction has been elevated to the status of a public referent.

There exist, however and unfortunately, very real diseases that are not solely a result of disruptions of organic functions, though many may have a physical basis. Our metaphor-ridden, loose employment of what sounds like clinical language derived from physiology, medicine, and psychological diagnosis has rendered suspect any clinical judgment that refers beyond the most familiar forms of pathology. When every disagreeable condition is called a disease, the meaning of 'disease' is quickly lost on what Clifton Fadiman called "the scrap heap of popular misuse."

This book is about phenomena that constitute real, non-metaphorical, non-fictitious diseases. We need to recognize clearly what our conceptual vocabulary means when true and legitimate pathology is in view. The present chapter and those that follow it in this Part I seek to establish a common basis of understanding between the author and the reader, so that the clinical vocabulary used in this study has a clear and well-grounded meaning. To this end it will be important to be able to presuppose on the part of the reader a general understanding of the nature of pathology; something of its history and the development of the

concepts of infectiousness, contagion, and antibiosis; the types of organic disease; and an understanding of the main theories of disease that have been proposed.

THE NATURE OF PATHOLOGY

The word 'pathology' is derived from the Greek *πάθος* or 'pathos', meaning suffering or disease, and more broadly it refers to feelings such as sadness, misery, and loneliness. Pathos gradually has come to be associated with "anything bad that befalls anyone" (Link 1932:134), a meaning upon which a number of current theories of disease tend to focus, as we shall see. The term 'pathology' traces its lineage in English back to 1597, when the word was first used in Jacques Guillemeau's *French chirurgerye, or, All the manuelle operations of chirurgerye*. There, "pathologia" is said to "treatethe of the cause and occacione of the sicknesses." Today, the term 'pathology' is still used in much the same way to refer to the science or study of disease.

Diseases can be classified as acute, chronic, or latent. Furthermore, they may be infectious, metabolic, genetic, environmental, nutritional, etc. They may affect only a few individuals, or a large proportion of members of a society. The term 'pathology' as it is used in this book refers to a broad spectrum of diseases or disorders, extending from the familiar biologically-based conception of disease to less familiar forms of psychological pathology, social pathology, and conceptual pathology. In all of these applications, the term 'pathology' is used with a non-metaphorical understanding of its roots in the general theory of disease, which includes among its purposes the therapeutic concern to eliminate the *πάθος* that conditions of disease produce.

Pathology, so understood, is the scientific study of disease. Its focus may be microorganic, biochemical, genetic, physiological, anatomical, nutritional, environmental, psychiatric, or cognitive—taking into consideration any of a wide range of causes and conditions that variously contribute to the incidence of disease. Pathology seeks to formulate general principles involved in the occurrence of disease; it proceeds by means of empirical analyses of pathologic processes and reactions. To accomplish these ends, pathology focuses attention upon the physiological state of an organism as well as upon conditions in the organism's environment that must be satisfied in order for the organism to live and function effectively. As a result, the study of pathology does not begin, or end, with a study of specific disease entities such as the tubercle bacillus or the malaria virus, but its scope is more inclusive, involving relationships between organisms and their respective, frequently specialized, environments. For often, changes in an organism's accustomed environment are associated with the development of pathologies that affect the organism's ability to function. In short, pathology is at once medical and ecological. And, as we shall see later on, the limited, common-sense association of pathology with biological disease proves to be excessively narrow when we confront the reality of psychological, social, and conceptual pathologies, all of which possess the defining characteristics of disease. It is therefore important that we have a clear understanding of those characteristics before proceeding. The characterization of disease has, as we shall see, evolved through history.

A SHORT HISTORY OF PATHOLOGY

The most basic and intuitive way to understand disease is in terms of a breakdown in the normal state of an organism. That normal state involves a delicately maintained dynamic of inner and outer balance that relies upon a multiplicity of genetic, biochemical, physiologi-

cal, and environmental processes controlled by mechanisms whose complexity is often not fully understood. From this point of view, disease is the result of a disruption of an organism's normal inner homeostasis, a concept developed by Walter Cannon in 1928 to describe an organism's stability as a biological system. From this point of view, disease comes about as a result of the disturbance and breakdown of conditions that play a vital role in the organism's interactive relationship with its environment. Pathogenesis describes how such a breakdown occurs.

The theory of disease as homeostatic breakdown appears historically to have been the most ancient. It is rooted in the view of disease developed by Hippocrates, who was born about 460 B.C. on the small Aegean island of Cos. Hippocrates and his followers thought of disease as a natural event that comes about as a result of an imbalance among the four humors of the body: blood, phlegm, yellow bile, and black bile.

The next step in the evolution of pathology had to wait for more than five hundred years, when Galen (129 A.D. – c. 216), born in the town of Pergamum (today known as Bergama, in Turkey), extended and refined the doctrine of the four humors. His humoral approach to disease then remained the dominant theory for more than a thousand years. Even after a millennium, emphasis was still being placed on the role of “the four temperaments,” on phlegmatic, choleric, sanguine, or melancholy influences.

It took until approximately 1500 for the theory of disease to evolve to its next phase in the hands of Andreas Vesalius, who was born in Brussels in 1514 or 1515 and died in 1564. Vesalius based his work on extensive experience in human dissection, so that for the first time a medical theory of disease was formulated on a solid empirical foundation. In 1543, he published *De humani corporis fabrica libri septum* [On the Fabric of the Human Body in Seven Books], often now referred to as the *Fabrica*. Interestingly, this was the same year in which Copernicus published his major work, *De revolutionibus orbium coelestium* [On the Revolution of the Celestial Orbs]. So, within the span of a single year a revolution began that was to affect how mankind would view both the microcosm of his body and the macrocosm of the universe. But like any revolutionary contribution to human knowledge, the reaction to Vesalius's work, as it was to Copernicus's discovery, was one of outrage as old beliefs were proved fundamentally wrong.

The modern era of pathology began with Giovanni Batista Morgagni (1682-1771), who served as professor of theoretical medicine in Padua. Over a period of some fifty years, he summarized seven hundred autopsies, the majority of which he performed himself, while others were done by his teacher, Valsalva. It was the first time that systematic, logical connections between the symptoms of disease and autopsy findings were formulated within the framework of a general classification of diseases. Morgagni's life's work, *De sedibus et causis morborum* [On the Seats and Causes of Disease], was published in 1761.

In the year of Morgagni's death, a French physician, Marie-Francois-Xavier Bichat was born. He was to live a brief life, dying soon after his thirtieth birthday. In spite of a life cut so short, he influenced the development of pathology by asking how diseases arise in affected tissues, rather than in entire organs. This trend toward the increasingly small-scale localization of disease was carried a step further by Rudolf Ludwig Carl Virchow (1821-1902), who was responsible for moving the focus of pathology from tissues to the cellular level. The cell was identified as the basic biological unit of plants and animals by Theodor Schwann (1810-1882), and building on this basis, Virchow, along with Robert Remak (1815-1865), concentrated research in pathology on this basic unit of biological structure.

From Hippocrates' theory of humoral imbalance to the late nineteenth century, a period of nearly two thousand years, pathology progressed, then, from a metaphorical conception of physiological homeostasis to an understanding of organs as the seat of disease, to tissue

and then to cell pathology.

This process of progressive refinement that has pushed the boundaries of human awareness in the direction of the increasingly small has not stopped. Research in molecular pathology was begun in the mid-twentieth century, when sickle-cell anemia was traced to abnormal hemoglobin. Soon, atomic diseases were identified with the advent of nuclear medicine. Today, more than a century after Virchow's work, the question has been raised whether some pathogens—mycoplasmas and viruses—may in fact originate *de novo*. And more recently, Stanley Prusiner, recipient of the Nobel Prize for Physiology or Medicine in 1997, formulated the prion (pronounced "pree-on") theory of disease, in which the responsible pathogen appears to be an infectious protein. Prions differ from all other known infectious pathogens in several respects. Foremost among these, and worthy of note in this overview of types of pathogens, prions do not appear to contain a nucleic acid genome that codes for their progeny, as do traditionally recognized organic pathogens, which include viruses, viroids, bacteria, fungi, and parasites. The discovery and classification of pathogens comprise, in other words, an open-ended and evolving project.

Advances in pathology have experienced the acceleration characteristic of many branches of science. Remarkably, it was only a century ago that medicine "did not know the cause of a single important human disease" and was able to do very little to prevent or to cure disease. (Hudson 1983:141) "In a single century the understanding of disease increased more than in the previous forty centuries combined." (121)

INFECTIOUSNESS, CONTAGION, AND ANTIBIOSIS

Since these three concepts will have direct application in this study of human pathology, let us look briefly at their historical development. In the evolution of medicine, the idea that some diseases are infectious and could therefore be transmitted from one person to another was first studied systematically in an Arabic text published in approximately 900 A.D., the *Book of Treasure*. In the West, the Jewish Old Testament gave early expression to the idea of contagion in its descriptions of leprosy. But it was the destructive power of recurrent waves of bubonic plague that gradually forced the public to accept the reality of contagion, an acceptance that grew over a period of centuries. In his treatise *On Plague*, the fourteenth-century Arabic physician Ibn al-Khatib wrote: "The existence of contagion is established by experience, study, and the evidence of the senses, by trustworthy reports on transmission by garments, vessels, ear-rings; by the spread of it by persons from one house, by infection of a healthy sea-port by an arrival from an infected land." (Hudson 1983:143)

Two centuries later, al-Khatib's view of contagious disease was developed further by the Renaissance physician Girolamo Fracastoro (1478-1553). Fracastoro wrote two works that have been important to historians of disease: his poem "Syphilis sive morbus Gallicus," from 1530, and his prose work in three books, *De contagione et contagiosis morbis et eorum curatione*, published in 1546 (Fracastoro 1930/1546). The interest of historians of medicine has been drawn to these works due to Fracastoro's emphasis on "seeds of disease" as an explanation for the plague and typhus, perhaps anticipating the microbial theory of disease by several centuries.

In Fracastoro's time, it was commonly recognized that even during the most devastating epidemic, some individuals did not get sick. Two explanations were given, but neither could yet be proved or disproved. "Either the lucky individual did not come into contact with the noxious agent of plague, or what was more likely, his or her resistance had been so strengthened that the body was able to maintain its equilibrium and not succumb to the external changes." (Nutton 1990:231; Fracastoro 1930/1546:60)

The infectious nature of disease and the phenomenon of contagion had to wait until the nineteenth century before significant advances in knowledge came. But, fortuitously, it turned out that therapeutic advances were possible in spite of deficient knowledge: For example, Ignaz Phillip Semmelweis (1818-1865), born in the area that is now Budapest, urged the use of chlorine wash as a disinfectant, and by its means during the mid-1800s was successful in reducing the incidence of puerperal fever that killed many women following childbirth. Semmelweis's analytical ability saved the lives of many women by means of a simple technique of antiseptics—long before the streptococcus cause of the disease was identified.

By approximately 1859, Louis Pasteur had become concerned with the nature of contagious disease, but his research was slowed by demands placed on him by the French silk industry, for which Pasteur was able to confirm that a protozoan was responsible for silkworm disease. By 1876, Pasteur had become convinced that microorganisms responsible for fermentation in wine and beer had their counterparts in organisms that cause disease in humans. In particular, he was able to develop a rabies vaccine without ever observing or identifying the virus that caused it.

It was not long until Robert Koch (1843-1910) discovered the life-cycle of anthrax bacteria, cultured them, and was able to verify that they cause anthrax in animals. In 1882, Koch discovered the bacteria that cause tuberculosis, basing his work on the research of a French army surgeon, Jean Antoine Villemin (1827-1892), who had been able to infect animals with tuberculosis from human beings, proving that it was contagious.

Progress then came rapidly. Before 1900, microbiological agents responsible for a range of diseases were correctly identified, among them botulism, cholera, diphtheria, dysentery, gonorrhea, meningococcal meningitis, plague, pneumococcal pneumonia, typhoid, tetanus, as well as numerous bacterial infections due to streptococci and staphylococci. The so-called germ theory of disease was solidly established by the beginning of the twentieth century.

This brief account of discoveries relating to the infectious nature of diseases would not be complete without mentioning the role of antibiosis in combating disease. In general terms, antibiosis is the name of any of a multitude of ways in which one organism can inhibit the growth of another, or kill it. In 1889, Villemin named the phenomenon of antibiosis, while Pasteur appears to have been the first to demonstrate its existence on the microorganic level. But the real importance and usefulness of antibiosis was first discovered in 1928 by Alexander Fleming (1881-1955), when he noticed that one of his staph cultures was contaminated by mold, and his attention was drawn to the area of antibiosis that formed around the mold colonies: Immediately outside the borders of the mold colonies a zone formed in which the staph bacteria did not grow. This no-growth zone, called a ring of inhibition, is where compounds produced by the mold form an inhospitable, toxic environment for the bacteria. In one of the famous accidents of scientific discovery, the mold that happened to contaminate Fleming's staph culture was the bread mold, *Penicillium*, whose secretion, penicillin, became a life-saving medicine for the treatment of a range of bacterial infections. It is of interest to note that Fleming's work finally gave modern sanction and proof to a practice in use more than 3,400 years ago. According to the Ebers medical papyrus written in 1552 B.C., Egyptians prescribed "bread in rotten condition," a natural source of penicillin, for the very ill.

Antibiosis is not limited to the microorganic world. Some plants secrete chemicals that inhibit the growth or kill neighboring plants that otherwise would compete with them. For example, the black walnut tree (*Juglans nigra*) produces juglone, which kills many herbaceous plants within the area of the walnut's root system. Similarly, in the deserts of the western United States, antibiotic inhibition among different plant species prevents them from

growing too close together, a state of affairs essential to their survival in an environment of scarce water.

The phenomenon of antibiosis in which one organism produces toxins that inhibit the growth or kill other organisms will later become important in studying a number of ways in which colonies of human organisms exert an antibiotic effect upon numerous other species, and sometimes upon one another.

TYPES OF ORGANIC DISEASE

So far we have emphasized diseases that can be traced to a specific agent, a bacterium, virus, perhaps a prion. However, there are evidently numerous diseases that are not the consequence of an infectious microscopic agent. One major class of diseases of this kind is environmental disease. For example, in the early 1950s when a Japanese industrial plant dumped mercury into Minamata Bay, the inorganic and comparatively less toxic mercury was converted into highly deadly methyl mercury, was absorbed by sea life, and was in turn eaten by human beings, fatally poisoning many. Numerous environmental diseases have so far been identified, among them: berylliosis, contracted from exposure to beryllium, which is used, e.g., in the making of fluorescent lights; bagassosis, which results from inhaling a residual product in the manufacture of sugar from sugar cane; byssinosis, from inhaling cotton dust; coal miner's pneumoconiosis or Black Lung Disease; liver cancer among workers handling vinyl chloride; green-tobacco sickness among harvesters of tobacco; respiratory illness among meat packers. (Hudson 1983:6) It is clear that environmental diseases come about as a result of activities that people engage in, which bring them into contact with toxic materials they handle or manufacture. Diseases of this kind cease to exist when people cease those activities, or when they take effective safety measures to protect their health.

Where environmental disease is treated by curtailing exposure to and ingestion of toxins, *nutritional disease* is treated in the opposite way, by supplementing what the organism ingests. Although nutritional diseases have certainly existed for millennia, it was not until the first half of the twentieth century that vitamin deficiency diseases, their causes, and treatments were discovered. Once a nutritionally adequate diet is supplied, the diseases no longer afflict people.

Another class of non-communicable diseases is *metabolic*. It has been hypothesized that the majority of metabolic disorders arise as a result of genetically determined abnormalities present from birth. For instance, deficiency in the production of an enzyme essential for the metabolism of the amino acid phenylalanine leads to a disease called phenylketonuria. It usually appears within a few weeks of birth and, if not treated, interferes with normal mental development. In contrast, some metabolic diseases begin later in life, e.g., gout and adult-onset diabetes.

Early in the second half of the twentieth century, medicine began to understand immune mechanisms used by the body to defend against infectious agents. A new classification of *autoimmune disease* was established for disorders that result when the immune system becomes self-destructive. For example, lupus erythematosus is thought to result when the immune system malfunctions and attacks its own connective tissue. Similarly, multiple sclerosis appears to be the result of an autoimmune attack on the insulating material, myelin, that sheaths nerves; Grave's disease appears to be the result of an autoimmune attack on the thyroid; rheumatic fever, the apparent result of an autoimmune attack on joint cartilage. Autoimmune disease is an example of a reflexive, or self-referential, systemic disorder. Close parallels to autoimmune disease are found in certain reflexive psychiatric and conceptual pathologies, as we shall see later on.