

# Contents

## BOOK I. REASON AND THE NATURE OF THINGS

CHAPTER ONE. <i>The Insurgence Against Reason</i>	3
SECTION I. THE ARGUMENT OF PSYCHOLOGISM	8
SECTION II. THE ARGUMENT OF HISTORICISM	12
SECTION III. THE ARGUMENT OF EMPIRICISM	16
SECTION IV. THE ARGUMENT OF KINETICISM	18
SECTION V. CAN FAITH BE BASED ON SCEPTICISM AS TO REASON?	20
CHAPTER TWO. <i>The Rivals and Substitutes for Reason</i>	23
SECTION I. AUTHORITY	23
(A) THE CHURCH	27
(B) TRADITION	28
(C) EXPERT OPINION	30
SECTION II. PURE EXPERIENCE	33
(A) AVENARIUS	37
(B) MACH	40
(C) JAMES	42
SECTION III. INTUITION	46
(A) INTUITION AND COMMON SENSE	48
(B) THE ILLATIVE SENSE AND INTUITIVE ASSENT	49
(C) INTUITIONISM AND ONTOLOGISM	51
(D) INTUITION, LIFE, AND INSTINCT	51
(E) INTUITIVE OR ROMANTIC REASON	54
SECTION IV. CREATIVE IMAGINATION	57
(A) IMAGINATION AS CONSTRUCTIVE	59



## CONTENTS

(B) PHILOSOPHY AS A CRITIQUE OF THE PRESUPPOSITIONS OF SCIENCE	148
(C) PHILOSOPHY AS AN EXTENSION OF SCIENTIFIC METHOD	149
SECTION II. THE PRINCIPLE OF SUFFICIENT REASON	150
(A) REASON AND CONTINGENCY	151
(I) CONTINGENCY OF SCIENTIFIC DATA	151
(2) CONTINGENCY OF IRRELEVANT FACTS	151
(3) CONTINGENCY OF SCIENTIFIC LAWS	151
(B) REASON AND THE ABSOLUTE	152
(C) REASON AND THE REALITY OF UNIVERSALS	153
(D) REASON AND DISCONTINUITY	154
(E) REASON AND PROBABILITY	155
SECTION III. THE NATURE OF THINGS	156
SECTION IV. RATIONALISM, NATURALISM, AND SUPERNATURALISM	158
(A) FICTIONALISM	162
(B) CONCEPTUALISM	162
(C) IRRATIONALISM	163
SECTION V. THE PRINCIPLE OF POLARITY	165

## BOOK II. REASON IN NATURAL SCIENCE

CHAPTER ONE. <i>The Nature of Mathematics</i>	171
SECTION I. THE DISTINCTION BETWEEN PURE AND APPLIED MATHEMATICS	173
SECTION II. HOW CAN A PURELY FORMAL SCIENCE EXIST?	182
(A) THE LOGICAL CHARACTER OF PURE MATHEMATICS	182
(I) IS MATHEMATICS THE ART OF MANIPULATING SYMBOLS?	183
(2) IS MATHEMATICS BASED ON INTUITION?	186
(i) KANT	186
(ii) POINCARÉ	188
(iii) RECENT INTUITIONISM	189
(B) THE NATURE OF LOGICAL NOVELTY	194

## CONTENTS

SECTION III. HOW IS APPLIED MATHEMATICS POSSIBLE?	198
(1) EMPIRICISM	199
(2) TRANSCENDENTAL IDEALISM	201
(3) PRAGMATISM	201
(4) CONCLUSION	202
CHAPTER TWO. <i>Mechanism and Causality in Physics</i>	206
SECTION I. MONISTIC MECHANISM	209
(A) ONTOLOGICAL ARGUMENT	209
(B) HISTORICAL ARGUMENT	213
(C) PSYCHOLOGICAL ARGUMENT	215
SECTION II. PHYSICAL PLURALISM AND THE PROBLEM OF CAUSATION	216
SECTION III. CONTINGENCY AND MATHEMATICS IN PHYSICAL SCIENCE	223
APPENDIX. THE PHILOSOPHICAL SIGNIFICANCE OF PHYSICAL RELATIVITY	230
(A) METHODOLOGIC BEARINGS	231
(B) COSMOLOGICAL BEARINGS	233
(I) TIME	234
(i) TEMPORAL LOCATION	234
(ii) DURATION	235
(iii) TEMPORAL ORDER	235
(2) SPACE	236
(C) ULTIMATE PHILOSOPHIC ISSUES	237
CHAPTER THREE. <i>Law and Purpose in Biology</i>	240
SECTION I. MECHANISM AND VITALISM	241
A. THE CASE FOR MECHANISM	243
(A) THE ARGUMENT FROM CONTINUITY	243
(B) THE ARGUMENT FROM THE PROGRESS OF SCIENCE	245
(C) THE ARGUMENT FROM THE POSSIBILITY OF VERIFICATION	247

## CONTENTS

B. THE CASE FOR VITALISM	249
(A) THE IRREDUCIBILITY OF LIFE	249
(B) THE IRREDUCIBILITY OF BIOLOGIC LAWS	255
(1) VITAL PHENOMENA AND THE LAW OF EN- TROPY	255
(2) DEPENDENCE OF VITAL PHENOMENA UPON HISTORY	256
(3) THE PURPOSEIVE CHARACTER OF LIFE	259
(i) ORGANIC MOVEMENTS	259
(ii) GROWTH, REPRODUCTION, AND HEREDITY	269
(iii) REGENERATION	273
(C) THE INDEPENDENCE OF BIOLOGIC METHOD	276
(1) THE INDIVIDUALITY OF THE ORGANISM	276
(2) THE INFLUENCE OF THE ORGANISM AS A WHOLE	278
(3) THE BIOLOGIC LEVEL OF ANALYSIS	279
(4) THE SPONTANEITY OF LIFE	280
(5) CONCLUSION	282
SECTION II. IN WHAT SENSE IS EVOLUTION A BIOLOGIC LAW?	282
(A) EVOLUTION AND THE UNFOLDING OF THE PREFORMED	283
(B) EVOLUTION AND TRANSFORMISM	283
(C) EVOLUTION AND ORTHOGENESIS OR PROGRESS	284
(D) EVOLUTION AND COMMON DESCENT	285
(E) EXPERIMENTAL EVOLUTION AND GENETICS	286
(F) EVOLUTION AND NATURAL SELECTION	287
SECTION III. BIOLOGY AND THE ARGUMENT FROM DESIGN	287
CHAPTER FOUR. <i>Psychology as a Natural Science</i>	293
SECTION I. FROM COMMON SENSE TO SCIENTIFIC PSYCHOLOGY	293
SECTION II. THE SUBJECT-MATTER OF PSYCHOLOGY	300
(A) CONCEPTIONS OF PSYCHIC SUBSTANCE	300
(1) THE SOUL	300
(2) THE TRANSCENDENTAL EGO OR SELF	302
(3) THE SUBCONSCIOUS	303

## CONTENTS

(i) UNCONSCIOUS PERCEPTIONS	304
(ii) PANPSYCHISM	306
(iii) UNCONSCIOUS THOUGHTS	307
(B) THE MENTAL AND THE PHYSICAL	311
(1) MENTALISM	311
(2) BEHAVIOURISM	314
(i) MATERIALISTIC MONISM	314
(ii) THE INSULATION OF CONSCIOUSNESS	315
(iii) THE ATTACK ON INTROSPECTION	317
SECTION III. LAW AND CAUSALITY IN PSYCHOLOGY	322
(A) PURE PSYCHOLOGY	322
(B) CAN THE MENTAL BE THE CAUSE OF THE PHYSICAL?	324
(C) CAN THE PHYSICAL CAUSE THE MENTAL?	325
(D) FREEDOM OF THE WILL	326
(1) EMPIRICAL FREEDOM	328
(2) RADICAL INDETERMINISM	329
(3) SELF-DETERMINATION	330
(4) SUMMARY	330
BOOK III. REASON IN SOCIAL SCIENCE	
CHAPTER ONE. <i>The Social and the Natural Sciences</i>	333
SECTION I. THE SUBJECT-MATTER OF THE SOCIAL SCIENCES	334
(A) ARE SOCIAL FACTS SIMPLY PHYSICAL?	334
(B) ARE SOCIAL FACTS SIMPLY BIOLOGIC?	337
(C) ARE SOCIAL FACTS SIMPLY PSYCHOLOGIC?	340
(D) THE DISTINCTIVE SUBJECT-MATTER OF THE SOCIAL SCIENCES	341
(1) THE VOLITIONAL OR TELEOLOGICAL CHARACTER OF SOCIAL FACTS	342
(i) INDIVIDUAL VOLITION	342
(ii) SOCIAL TELEOLOGY	342
(2) THE HISTORICAL CHARACTER OF SOCIAL FACTS	344
(3) THE CULTURAL CONTEXT OF SOCIAL FACTS	346

## CONTENTS

SECTION II. THE IDEAL GOAL ( <i>τέλος</i> ) OF THE SOCIAL AND THE NATURAL SCIENCES	347
SECTION III. THE FORM OR METHOD OF RESEARCH IN THE SOCIAL AND THE NATURAL SCIENCES	350
(A) THE COMPLEXITY AND VARIABILITY OF SOCIAL PHE- NOMENA	351
(B) ARE THERE ANY SOCIAL LAWS?	356
(C) SOCIAL AND NATURAL CAUSATION	359
(D) TENDENCIES AS LAWS	362
(E) TYPE ANALYSIS	364
SECTION IV. THE FACULTY OR TYPE OF MENTALITY INVOLVED	367
CHAPTER TWO. <i>History Versus Value</i>	369
SECTION I. THE RELEVANCE OF HISTORY TO SOCIAL VALUES	371
(A) ECONOMICS	371
(B) JURISPRUDENCE	373
(C) POLITICS	376
(D) ETHICS	377
(E) RELIGION	379
(F) PHILOSOPHY	380
SECTION II. HISTORICAL METHOD	380
(A) PEDAGOGIC VALUE	382
(B) HISTORY AND ETHICAL ABSOLUTISM	383
CHAPTER THREE. <i>Communal Ghosts in Political Theory</i>	386
SECTION I. THE REALITY OF GROUPS	386
SECTION II. GROUP RESPONSIBILITY	392
SECTION III. POLITICAL PLURALISM	396
SECTION IV. CONCLUSION	398
CHAPTER FOUR. <i>Natural Rights and Positive Law</i>	401
SECTION I. A PRIORI OBJECTIONS TO THE DOCTRINE OF NAT- URAL LAW	401
(A) HISTORICAL ARGUMENT	402
(B) PSYCHOLOGICAL ARGUMENT	404

## CONTENTS

(C) LEGALISTIC ARGUMENT	405
(D) METAPHYSICAL ARGUMENT	411
SECTION II. DIFFICULTIES IN THE PATH OF NATURAL LAW	413
(A) THE INDETERMINATENESS OF OUR JURAL IDEALS	415
(B) THE INTRACTABILITY OF HUMAN MATERIALS	420
(1) INHERENT LIMITS OF LEGISLATIVE POWER	420
(2) INHERENT DIFFICULTIES IN FORCING OBEDIENCE TO THE LAW	422
(3) THE LIMITS OF LEGAL MACHINERY	424
(C) THE ABSTRACTNESS OF LEGAL RULES	425
 CHAPTER FIVE. <i>The Possibility of Ethical Science</i>	 427
SECTION I. THE ILLUSIONS OF MORALITY	429
(A) THE ILLUSIONS OF ABSOLUTISM	430
(B) THE ILLUSIONS OF ANTINOMIANISM	434
(1) MORAL ANARCHISM	434
(2) AMORALISM	434
(3) ANTI-RATIONAL EMPIRICISM	437
SECTION II. THE APORIAS OF THE ETHICAL IDEAL	438
(A) MORAL KNOWLEDGE AND THE MORAL WILL	439
(B) ETHICS AND DETERMINISM	440
(C) THE PLURALITY OF MORAL ASSUMPTIONS	441
(D) THE COMMENSURABILITY OF VALUES	442
(E) PRUDENCE AND THE PURSUIT OF THE UNATTAINABLE	444
SECTION III. RATIONAL METHOD IN ETHICS	446
EPILOGUE. <i>In Dispraise of Life, Experience, and Reality</i>	450
INDEX OF SUBJECTS	461
INDEX OF PROPER NAMES	466