

CONTENTS OF *ONTOLOGY II*

GENERAL PREFACE TO THE <i>TREATISE</i>	v
PREFACE TO <i>ONTOLOGY II</i>	xiii
ACKNOWLEDGMENTS	xv
SPECIAL SYMBOLS	xvi
1. SYSTEM	1
1. Basic Concepts	3
1.1. Aggregate and System	3
1.2. Concrete System: Definition	5
1.3. More of the Same	8
1.4. Subsystem	11
1.5. Level	13
1.6. Systems Association	14
1.7. Other Kinds of System: Property and Functional	15
1.8. Concluding Remarks	15
2. System Representations	16
2.1. Coupling Graphs and Matrices	16
2.2. The State Space Representation	20
3. Basic Assumptions	24
3.1. Structural Matters	24
3.2. Assembly and Emergence	27
3.3. Selection	30
3.4. Evolution	33
4. Systemicity	35
4.1. Integration, Cohesion, Coordination	35
4.2. Holism, Atomism, Systemism	39
5. Concluding Remarks	43
2. CHEMISM	45
1. Chemical System	46
1.1. Atom	46

1.2. Molecule	48	
1.3. Chemical System	52	
1.4. Chemical Reaction	54	
1.5. Chemical Control	59	
2. Biochemical System		61
2.1. Biomolecule	61	
2.2. DNA Replication, and RNA and Protein Synthesis	67	
2.3. Biochemical System	71	
2.4. Concluding Remarks	73	
3. LIFE		75
1. From Chemism to Life		76
1.1. Self-Organization of Biochemical Systems	76	
1.2. Definition of a Biosystem	79	
1.3. Cell and Organism, Biospecies and Biopopulation	82	
1.4. Biolevel	84	
1.5. Concluding Remarks	85	
2. Biofunction		86
2.1. Health and Death	86	
2.2. Function and Value	88	
2.3. Biocontrol	92	
2.4. Development	95	
2.5. Reproduction and Heredity	98	
2.6. Development, Heredity, and the Metaphysical Tradition	101	
3. Evolution		103
3.1. Adaptation	103	
3.2. Adaptation Mechanism	105	
3.3. Evolution and Coevolution: Basic Ideas	107	
3.4. A Schema of the Evolutionary Process	108	
3.5. The Underlying Mechanism	111	
3.6. Bioprogress	115	
4. Concluding Remarks		118
4. MIND		124
1. Central Nervous System		125
1.1. Philosophical Background	125	
1.2. Neural Units	127	
1.3. Initial Definitions	129	
1.4. Basic Assumptions	132	
2. Brain States		134

2.1. Brain Functions	134	
2.2. Mental States and Processes	138	
2.3. Psychosomatic Interaction	141	
2.4. Location of the Mind	144	
2.5. Mentalist Predicates	146	
3. Sensation to Valuation		150
3.1. Sensing and Perceiving	150	
3.2. Mapping Body and Environment	153	
3.3. Behavior: Definitions and Principles	156	
4. Recall to Knowledge		161
4.1. Memory and Learning	161	
4.2. Expectation and Purpose	163	
4.3. Thinking	164	
4.4. Cognition and Decision	166	
4.5. Creativity	167	
5. Self to Society		170
5.1. Awareness, Consciousness, Will	170	
5.2. Person and Self	173	
5.3. Social Behavior	175	
5.4. The Root of Social Cohesion	177	
5.5. Communication	180	
5.6. Protoeconomy, Protoculture, Protopolity	182	
6. Concluding Remarks		183
5. SOCIETY		186
1. Human Society		187
1.1. Definitions	187	
1.2. Subsystem, Supersystem. Specific Function	191	
1.3. Institution	193	
2. Social Subsystems and Supersystems		196
2.1. Work	196	
2.2. Labor	198	
2.3. Cultural and Managerial Work	200	
2.4. The Main Subsystems of a Human Society	203	
2.5. The Supersystems: Nation and World	205	
3. Economy, Culture, and Polity		208
3.1. The Economic System	208	
3.2. The Cultural System	211	
3.3. The Political System	215	