

# Contents

<b>Introduction .....</b>	<b>13</b>
<b>1. The Prevailing Paradigm: Approaches to the Firm .....</b>	<b>23</b>
1.1 Coase: The Nature of the Firm vs. the Market .....	24
1.2 Disparate Theories & Approaches .....	27
1.2.1 Standard Economic (Textbook) Treatments .....	28
1.2.2 Evolutionary Economic Approaches .....	32
1.2.3 Management Theory I: A Neural Network Model .....	38
1.2.4 Management Theory II: Complexity Leadership Theory .....	42
1.3 Underlying Assumptions .....	49
1.3.1 Methodological Individualism .....	50
1.3.2 Concerning Human Nature .....	54
1.3.3 Concerning Organization .....	57
1.4 Cost Factors .....	59
1.4.1 Organizing the Firm: Cooperation, Collaboration & Coordination .....	60
1.4.2 Productivity, Motivation & Health .....	64
<b>2. Systemic Cooperation .....</b>	<b>69</b>
2.1 Biology: Evolutionary Novelty Creation .....	69
2.1.1 In Brief: The Neo-Darwinist Synthesis .....	70
2.1.2 Horizontal Gene Transfer & Symbiosis .....	76
2.1.3 Mounting Evidence: HGT & Symbiosis .....	83
2.2 Human Behavior: Evolutionary Real Traits & Misconceptions .....	87
2.2.1 Kin Selection, Reciprocal Altruism, Group Selection & Mutualism .....	90
2.2.2 Cooperation, Collaboration, Altruistic Helping & Fairness .....	95
2.2.3 Misconceptions about Human Behavior: War & Peace ....	108

2.3 Creativity & Motivation .....	122
2.3.1 The Mind & Creativity .....	122
2.3.2 Gruber's Evolving Systems Approach .....	130
2.3.3 Creativity Research .....	133
2.3.4 Creative Work & Motivation .....	139
2.4 Evolutionary & Quantum Games .....	144
2.4.1 Evolutionary Games: An Example .....	145
2.4.2 Quantum Impact: General Principles .....	150
2.4.3 Quantum Games I: Foundational Cooperation .....	154
2.4.4 Quantum Games II: Cognitive Probability .....	157
<b>3. Organization .....</b>	<b>163</b>
3.1 Hierarchic Tree vs. Web of Life .....	167
3.1.1 The Tree of Life: Precedents & Alternatives .....	168
3.1.2 The Web of Life: Horizontal Gene Transfer & Novelty Creation .....	171
3.2 Chemistry: The Dynamics of Parts & Wholes .....	174
3.2.1 Chemistry's Relational Classification System & Common Sense Pragmatism .....	176
3.2.2 A Non-Reductionist Interpretation of Chemistry .....	179
3.2.3 Scientific Verification & Open Systems .....	187
3.2.4 Molecular Change & the Importance of Processes .....	191
3.3 Self-Organization .....	197
3.3.1 Self-Organization & the Invisible Hand: The General Idea .....	197
3.3.2 Self-Organization: Key Characteristics .....	200
3.3.3 Self-Organization & Complex Systems: Control & Predictability .....	213
3.4 Self-Organizing Multi-Agent Systems .....	218
3.4.1 Designing Self-Organizing Multi-Agent Systems .....	220
3.4.2 Heterodox & Holonic Agents: Hybrid Multi-Agent System Interaction .....	225

<b>4. Towards a New Paradigm for the Firm .....</b>	<b>231</b>
4.1 Methodology .....	232
4.1.1 Process Philosophy, Evolutionary Novelty Creation & Chemistry .....	233
4.1.2 Process Philosophy & a Non-trivial Quantum Impact .....	238
4.1.3 Power .....	242
4.2 The Human Agent & the Firm .....	246
4.2.1 The Human Agent .....	246
4.2.2 The Firm: Self-Organization & Cooperation .....	249
4.3 Non-Trivial Self-Organization in Human Multi-Agent Systems: Examples .....	257
4.3.1 W.L. Gore & Associates: Cooperation & Collaboration Without Hierarchic, Positional Power .....	258
4.3.2 Alcoholics Anonymous & More .....	266
4.4 Brief Appraisal: The Firm as an Open System – What Does <i>Open</i> Mean? .....	270
4.4.1 The Open Firm, the Open Society & Sustainability Accounting .....	271
4.4.2 How to Realize the Firm as an Open System .....	277
<b>5. Conclusion &amp; Outlook .....</b>	<b>283</b>
5.1 Conclusion .....	283
5.2 Outlook .....	288
<b>Bibliography .....</b>	<b>299</b>