Contents

Understanding of Health	
If You Change the Way You Look at Things, Things You Look at Change. Max Planck's Challenge for Health, Health Care, and the Healthcare System Joachim P. Sturmberg	3
Fail Small, Fail Often: An Outsider's View of Physiologic Complexity Bruce J. West	45
Part II Physiology	
A Puzzling Question: How Can Different Phenotypes Possibly Have Indistinguishable Disease Symptoms?	59
Complexity Sciences Dramatically Improve Biomarker Research and Use	69
Analyzing Complex Medical Image Information: Convolution Versus Wavelets in a Neural Net	85
The Mechanisms of How Genomic Heterogeneity Impacts Bio-Emergent Properties: The Challenges for Precision Medicine Henry H. Heng, Guo Liu, Sarah Alemara, Sarah Regan, Zachary Armstrong, and Christine J. Ye	95

Part III Health Care

The Health System Quartet: Four Basic Systems—Cure, Care, Heal, and Deal—To Foster the Co-production of Sustained Health Jan van der Kamp and Thomas Plochg	113
Humans and Big Data: New Hope? Harnessing the Power of Person-Centred Data Analytics. Carmel Martin, Keith Stockman, and Joachim P. Sturmberg	125
Is Decision-Making of Women Concerning Their Violent Relationships Truly Nonlinear and Why Is That? David Katerndahl, Sandra Burge, Robert Ferrer, Johanna Becho, Robert Wood, and Maria Del Pilar Montanez Villacampa	147
Co-producing Healthcare Interventions: Transforming Transdisciplinary Research to Develop Healthcare Services to Meet the Needs of Patients with Complex Problems	169
Part IV Education and Leadership	
Coordinated Tension: The "Secret Sauce" to Enable Decision-Making in a Global Health Complex Adaptive System Robert C. Hausmann, Ferdinando Regalia, Emma Iriarte, and Jennifer Nelson	187
A Systems Perspective for Measuring Features of Transdisciplinary Knowledge Producing Teams (TDKPTs) Gaetano R. Lotrecchiano and Shalini Misra	207
How and Why Effective Leaders Construct and Evolve Structural Attractors to Overcome Spatial, Temporal, and Social Complexity James K. Hazy	225
Physician Burnout: A U.S. Public Health Crisis in Need of a Socio-Ecological Solution	237
Part V Health Systems and Policy	
Organisational Relativity—Changing Our Perspective on Health and Health Care	257
A Systems Model of HIT-Induced Complexity	267

Salutogenesis Revisited	279
Disappointment-Driven System Improvement in Health Care	289
A Study on the Modeling of Obesity	307
Index	331