

# Springer Complexity

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Springer Complexity is an interdisciplinary program publishing the best research and academic-level teaching on both fundamental and applied aspects of complex systems – cutting across all traditional disciplines of the natural and life sciences, engineering, economics, medicine, neuroscience, social and computer science.

Complex Systems are systems that comprise many interacting parts with the ability to generate a new quality of macroscopic collective behavior the manifestations of which are the spontaneous formation of distinctive temporal, spatial or functional structures. Models of such systems can be successfully mapped onto quite diverse “real-life” situations like the climate, the coherent emission of light from lasers, chemical reaction-diffusion systems, biological cellular networks, the dynamics of stock markets and of the internet, earthquake statistics and prediction, freeway traffic, the human brain, or the formation of opinions in social systems, to name just some of the popular applications.

Although their scope and methodologies overlap somewhat, one can distinguish the following main concepts and tools: self-organization, nonlinear dynamics, synergetics, turbulence, dynamical systems, catastrophes, instabilities, stochastic processes, chaos, graphs and networks, cellular automata, adaptive systems, genetic algorithms and computational intelligence.

The three major book publication platforms of the Springer Complexity program are the monograph series “Understanding Complex Systems” focusing on the various applications of complexity, the “Springer Series in Synergetics”, which is devoted to the quantitative theoretical and methodological foundations, and the “SpringerBriefs in Complexity” which are concise and topical working reports, case-studies, surveys, essays and lecture notes of relevance to the field. In addition to the books in these two core series, the program also incorporates individual titles ranging from textbooks to major reference works.

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# Understanding Complex Systems

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**Founding Editor: S. Kelso**

Future scientific and technological developments in many fields will necessarily depend upon coming to grips with complex systems. Such systems are complex in both their composition – typically many different kinds of components interacting simultaneously and nonlinearly with each other and their environments on multiple levels – and in the rich diversity of behavior of which they are capable.

The Springer Series in Understanding Complex Systems series (UCS) promotes new strategies and paradigms for understanding and realizing applications of complex systems research in a wide variety of fields and endeavors. UCS is explicitly transdisciplinary. It has three main goals: First, to elaborate the concepts, methods and tools of complex systems at all levels of description and in all scientific fields, especially newly emerging areas within the life, social, behavioral, economic, neuro- and cognitive sciences (and derivatives thereof); second, to encourage novel applications of these ideas in various fields of engineering and computation such as robotics, nano-technology and informatics; third, to provide a single forum within which commonalities and differences in the workings of complex systems may be discerned, hence leading to deeper insight and understanding.

UCS will publish monographs, lecture notes and selected edited contributions aimed at communicating new findings to a large multidisciplinary audience.

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Santo Banerjee • Şefika Şule Erçetin • Ali Tekin  
Editors

# Chaos Theory in Politics

 Springer

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*SB: To Chaitali (Rupa) and Sudip, wish you a less Politics and no Chaos in life!*

*SSE: To my dearest Nihan Potas and Şuay Nilhan Açıklan*

*AT: I dedicate my contribution to this book to many students that I have encountered over the years as a professor. Their support, challenges, and comments have been extremely valuable for my professional growth.*



# Preface

World history has always been full of catastrophic social and political events. From the industrial revolution to the First World War and the more recent Arab Spring, these events will be remembered as cornerstones of modern world history. Although the twenty-first century has not witnessed a world war, we have experienced new challenges, including ethnic conflicts and global warming. To meet these and other new challenges, humanity must learn new concepts and develop new approaches.

The last 50 years have witnessed a scientific revolution and critical accumulation of knowledge that have triggered a more multi-disciplinary approach towards research in order to address these new challenges. Often this multi-disciplinary approach is given the label of Chaos Theory, a term that first gained popularity in the disciplines of Mathematics and Physics. In fact, this could perhaps better be seen as a new term to define a very old concept. Our daily lives can be seen as being directly linked with the events in sociology, political science and the natural sciences. What was at first branded as a primarily numerical concept has in recent years been shown to part of the fabric of our social reality. Today, we recognize that our lives are affected on a daily basis by unexpected human behaviour. In such a world, there are always alternative ways to understand the social and political dynamics of our history.

This book attempts to frame chaos and its application within different subcategories of world politics. The reader will gain insights from Arab Spring to gender issues through the eyes of chaos theory. It is my hope that this book will inspire researchers, both present and future, to work in the dynamic field of chaos and politics.

I wish to thank the editors who invited me to write the preface for a book on our unique field of “chaos.”

Ankara  
November-2013

Şuay Nilhan Açıkalın





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