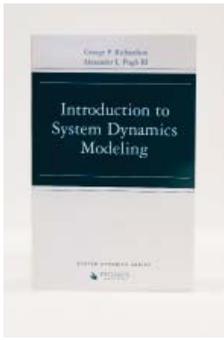


F O R S A L E

A Collection of Books offered from within the world of System Dynamics

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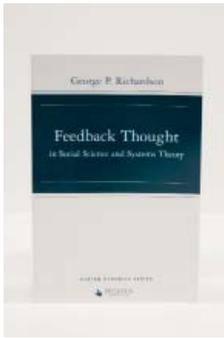


Introduction to System Dynamics Modeling - 1999 (Originally published in 1989)

US\$30.00 +S/H*

Authors: George P. Richardson, Alexander L. Pugh III

Synopsis: System dynamics, as a field of insight and inquiry, offers a new way to think about complex organizations. Designed for working managers and analysts, this book is highly recommended as a basic introduction to system dynamics as well as an approachable, non-technical presentation of the fundamentals of computer implementation of system dynamics.

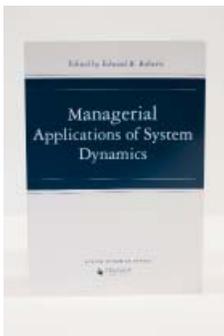


Feedback Thought in Social Science and Systems Theory - 1999 (Originally published in 1991)

US\$40.00 +S/H*

Author: George P. Richardson

Synopsis: *Feedback Thought in Social Science and Systems Theory* is an original investigation into the history of an idea and a way of thinking in the social sciences – the loop concept underlying the notions of feedback and circular causality. After tracing the concept's historical roots, George P. Richardson argues that modern usage of feedback thinking in the social sciences divides rather dramatically into two main lines of development, which proceeded from 1945 through at least the 1970s in considerable ignorance of each other. The presumption underlying the work is that feedback thinking is one of the most penetrating patterns of thought in all social science. Usually implicit, sometimes explicit, feedback thought is embedded in the very foundations of social science and systems theory. Great social scientists are feedback thinkers, great social theories are feedback thoughts. This intellectual history illuminates the significance of feedback thinking in social science and social policy – current as well as classical.

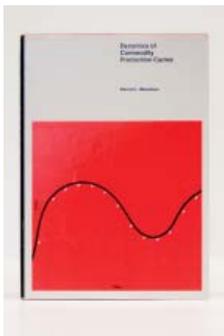


Managerial Applications of System Dynamics - 1999 (Originally published in 1978)

US\$40.00 +S/H*

Edited by Edward B. Roberts

Synopsis: System Dynamics, as a field of insight and inquiry, offers a new way to think about our organizations. It provides strategic language and tools to support lasting, effective company-wide improvement. *Managerial Applications of System Dynamics* is an overview of system dynamics applications of management, management science, management cybernetics, modeling, planning, and forecasting. It includes discussion of: complex corporate models; analysis of workload fluctuations; the Honeywell experience; analysis of problems in an apparel company; growth strategies for a trucking company; the U.S. plywood industry; aging organizations; resource control and marketing policies; organizational change; management information systems; model of weekly stock prices; long-range strategic planning.



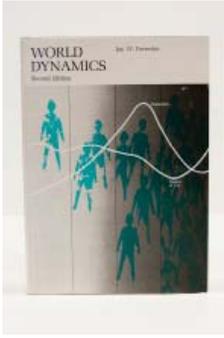
Dynamics of Commodity Production Cycles - 1970

US\$60.00 +S/H*

Author: Dennis L. Meadows

Synopsis: Why do price and production of commodities fluctuate? Is the cyclical behavior unique to each commodity or is it due to a common structure underlying all commodities? Can the influence of a new policy or institutional arrangement on the stability of commodity markets be predicted? *Dynamics of Commodity Production Cycles* addresses such questions. Economists, managers, investors, and government officials should benefit from this new theory of the structure and dynamics of commodity systems. Professor Meadows finds the classical Cobweb Theorem and its modifications inadequate representations of dynamic relationships in actual commodity systems. Employing the industrial dynamics methodology, he develops a general dynamic model of the economic, biological, technological, and psychological factors which lead to the instability of commodity systems. To verify the model and to show how the general theory applies to a specific commodity, the author reviews the literature on

pork production in the United States. Values appropriate to the production and consumption of pork are obtained for each parameter in the general model. The dynamic behavior of the resulting hog cycle model is similar to the observed four-year cycle. With appropriate managerial and biological coefficients the model also yields the typical cattle and chicken cycles. Although animal commodities are used as examples, the general model is applicable to mineral and vegetable commodities as well. The general dynamic model of commodity production cycles is especially useful for computer simulation. It permits experiments to test alternative policies and structural changes and their effect on the stability of a commodity system. The results of several such experiments present surprising implications for stabilization policies. The work is discussed which must precede the design of policies and institutions for commodity stabilization.



World Dynamics (Second Edition) - 1973 (Originally published in 1971)

US\$40.00 +S/H*

Author: Jay W. Forrester

Synopsis: *World Dynamics* represents a call to arms against this futility. It shows the opportunity for bringing the world of man into equilibrium with the forces of his environment while there still remains time and maneuvering room. Man throughout history has focused on growth - growth in population, standard of living, and geographical boundaries. But in the fixed space of the world, growth must in time give way to equilibrium. Malthus had postulated food supply as the ultimate limiting factor, but Professor Forrester suggests that pollution, crowding, and depletion of resources can play equally critical roles. Industrialization may be a more fundamental threat than population. Due to limitations of the environment, the entire world may not be able to rise to the standard of living that has been set as an example by the industrialized countries. Goals and aspirations of all countries must

be drastically readjusted as growth and expansion give way to world equilibrium. The book is the first step towards adapting the principles of System Dynamics to the behavior of the forces involved in the transition from growth to world equilibrium. A stable enduring world equilibrium may require a combination of social, economic, and technical changes that include such counterintuitive policies as reducing the present emphasis on food production and industrialization. Since its publication, the book has received world-wide notice and has catalyzed debate over the necessity of achieving world equilibrium. In this second edition, an additional chapter discusses the importance of social limits to growth.

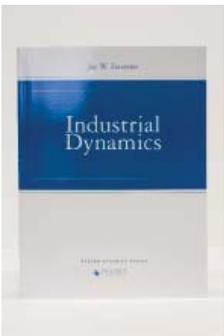


Dynamo User's Manual (Sixth Edition) - 1983 (Originally published in 1970, reprinted in 1973, 1976, and 1983)

US\$10.00 +S/H*

Author: Alexander L. Pugh III

Synopsis: DYNAMO is a computer language for simulating models of business, economic, social, biological, and engineering systems. It permits easy communication with the computer and easier communication among modelers and can be mastered by non-programmers in days rather than the weeks or months required for most languages.



Industrial Dynamics - 1999 (Originally published in 1961)

US\$60.00 +S/H*

Author: Jay W. Forrester

Synopsis: *Industrial Dynamics* is the cornerstone of system dynamics and must be experienced by any serious systems thinker.

What makes *Industrial Dynamics*—or any book—a classic? Timelessness. Although first published more than 50 years ago, *Industrial Dynamics* is durably relevant for those interested in how social systems work. Nothing in this book is outdated.

Because systemic problems are complicated and messy, the book provides comprehensive examples in problem definition, simulation model-building and ways to judge the quality of results. Its principles apply to understanding the role of policy and decision making in social systems as diverse as healthcare, finance, production-distribution, conflict resolution, the environment and ecology.

The creation of computer models to simulate system behavior does not require great mathematical ability, but there are skills to be developed and pitfalls to be avoided. *Industrial Dynamics* is written to lead the learner through the methodology from conceptualization through model formulation, testing and analysis to implementation. The text is supplemented by fifteen brief appendices that tackle topics such as beginners' difficulties, information smoothing and the limits of prediction.

Systems planning is the tool of the responsible problem-solver to derive guiding principles for the future. The process begins with *Industrial Dynamics*.

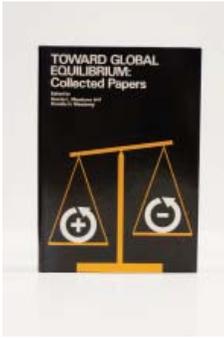


Collected Papers of Jay W. Forrester - 1975

US\$60.00 +S/H*

Author: Jay W. Forrester

Synopsis: *Industrial dynamics* – the application of feedback concepts to social systems – offers a rational foundation to support the art of management. This collection includes provocative discussions of issues critical to manufacturing managers, including production-distribution systems, inventory and in-process order corrections, corporate growth patterns, and the reduction of research costs.



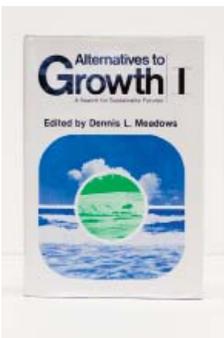
***Toward Global Equilibrium: Collected Papers* - 1973**

US\$20.00 +S/H*

Edited by Dennis L. Meadows and Donella H. Meadows

Synopsis: As global population and material standard of living continue to grow it becomes necessary to understand the consequences of growth within the context of our finite world. It is now being increasingly accepted that growth cannot continue unchecked, and must in time give way to equilibrium. What are the factors which necessitate such a transition, and how can we systematically analyze and cope with the problems arising from growth? *Toward Global Equilibrium* collects in one volume 13 papers which identify and deal with specific issues connected with growth. Two introductory papers in the first section provide background material on system dynamics and the MIT-Club of Rome Project under which this research was undertaken. Reports in the second section of the book describe seven complete system dynamic models for analyzing such important global problems as DDT and mercury pollution, natural resource depletion, solid waste disposal, etc. Complete description and

model equations are included to enable the reader to reproduce and extend the simulation results reported in the text. Four papers in the third section examine the economic, political, and ethical implications of growth and the transition to equilibrium. These papers were originally disseminated as individual statements. A brief summary of the circumstances leading to its preparation precedes each paper. These papers also identify critical areas of future research in the fields of population, environment, resources, and social ethics.



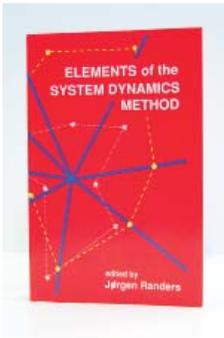
***Alternatives to Growth I: A Search for Sustainable Futures* - 1977**

US\$10.00 +S/H*

Edited by Dennis L. Meadows

Synopsis: The Club of Rome, sponsor of the MIT *Limits to Growth* study, has joined several other future-oriented organizations to sponsor the Mitchell Program, a ten-year effort to stimulate creative ideas on the problems and opportunities inherent in a “steady-state” society – that is, a society no longer dependent on perpetual growth in population, energy use, and raw materials consumption. Drawn from essays attracted in 1975 by the prestigious biennial Mitchell Prize contest and conference, this collection of papers by leading environmentalists, economists, policymakers, and philosophers is the first of five volumes chronicling the evolution of imaginative research on constructive alternatives to growth. These people’s concerns and expertise range from building solar energy systems, to devising new economic and social institutions, to extending human consciousness. *Alternatives to Growth – I* marks out the frontiers of current thinking about the possibilities of creating a human society in

equilibrium; the book sketches the outlines of the social values and life-styles that may, of necessity, characterize life in the last decades of this century.

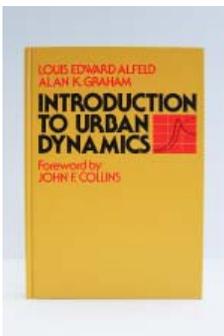


***Elements of the System Dynamics Method* - 1980**

US\$50.00 +S/H*

Edited by Jorgen Randers

Synopsis: *Elements of the Systems Dynamics Method* explores how models of dynamic systems are made. The authors give practical advice about choosing a problem that will yield interesting results, what to include in the model and what to leave out, the desirable amount of detail, selecting parameter values, knowing whether the model is “good,” and how to make the model interesting to other people.



***Introduction to Urban Dynamics* - 1976**

US\$30.00 +S/H*

Authors: Louis Edward Alfeld; Alan K. Graham

Synopsis: The publication of Jay W. Forrester’s *Urban Dynamics* in 1969 introduced a new perspective on analyzing urban problems. The book attracted attention worldwide and stirred a great deal of controversy and debate. *Introduction to Urban Dynamics* provides a step-by-step approach to understanding both the key elements of the system dynamics modeling methodology, and the ideas and concepts introduced in *Urban Dynamics*. It explains the complexity of the urban system by examining simpler urban subsystems one at a time. The book contains eleven urban models. Each model is slightly more complex and realistic than the one before it. For example, Chapter 1 describes a simple model of unlimited economic expansion. Chapter 2 modifies that model to portray growth within a fixed land area, such as a central-city area. Each chapter illustrates some principle of urban behavior, and discusses the model in terms of real events and policy issues. The book shows how the three major concepts of

urban dynamics – land use, attractiveness, and aging and obsolescence – provide a framework to view the behavior of the entire city.

Organized as a textbook with practice exercises and suggested readings within each chapter, the book is aimed at students of systems analysis and city planners. The reader of *Introduction to Urban Dynamics*, when finished, “should be able to visualize a city as a unified system that can be managed to improve the quality of life for its residents.”



Readings in Urban Dynamics – Volume 1 - 1974

US\$30.00 +S/H*

Edited by Nathaniel J. Mass

Synopsis: Since 1969, the urban dynamics research program at MIT has focused on studying the long-term processes of urban development and the determinants of urban growth and decay. The urban dynamics approach to modeling centers on analyzing the mutual interactions among the various subsystems of an urban area. Readings 1 through 4 provide an introduction to the methodology and perspective underlying this approach. Taken collectively, the papers discuss the value of mathematical models in analyzing social systems and summarize several of the broad policy implications derived from the original urban model and from subsequent work.

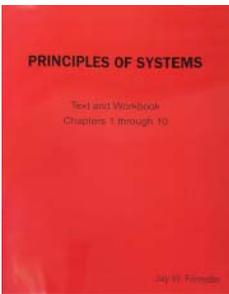


Readings in Urban Dynamics – Volume 2 - 1975

US\$30.00 +S/H*

Edited by Walter W Schroeder; Robert E Sweeney; Louis Edward Alfeld

Synopsis: This second volume is a record of urban dynamics research through 1974, and offers a treatment of issues in urban modeling. It responds to many initial criticisms of *Urban Dynamics*, presents further results of applying the methodology in Lowell, Massachusetts, and describes model extensions to account for land rezoning, housing abandonment, and city-suburb interactions.



Principles of Systems - 2016 (Originally published in 1968)

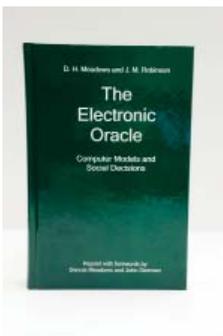
US\$50.00 +S/H*

Available in print and electronic version

Author: Jay W. Forrester

Synopsis: *Principles of Systems* explains the basic principles behind system behavior. It introduces the concepts of structure and dynamic behavior on which were based the author's earlier books, *Industrial Dynamics*, 1961 and *Urban Dynamics*, 1969. Due to the general nature and wide applicability of the principles discussed, the book has been accepted as a starting point for teaching dynamic systems on many multidisciplinary courses on urban, ecological, corporate and other complex social systems.

¹By purchasing this title you agree NOT to distribute print or digital files of Principles of Systems - NO shipping charge for the electronic version

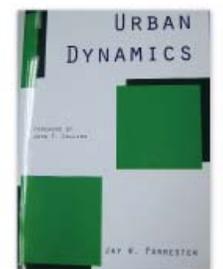


The Electronic Oracle - 1985

US\$35.00 +S/H*

Authors: D.H. Meadows and J.M. Robinson

Synopsis: This book compares the pros and cons of the four modeling paradigms used to understand the complex interactions that influence the behavior of social systems: system dynamics, econometrics, input-output analysis, and optimization. The book provides in-depth descriptions of nine important models based on these methods and discusses the role of modeling as an input to public policy. It is an outstanding textbook written from an insider's viewpoint, with an outsider's skepticism. This book is of continuing relevance and too important not to publish.



Urban Dynamics - 1969

US\$50.00 +S/H*

Author: Jay W. Forrester; Foreword: John F. Collins

Synopsis: What makes cities degenerate? What can be done to revitalize stagnant urban areas? In this controversial book, Jay Forrester presents a computer model describing the major internal forces controlling the balance of population, housing, and industry within an urban area. He then simulates the life cycle of a city and predicts the impact of proposed remedies on the system. Startling in its conclusions, this book became the basis of a major research effort that has influenced many government urban-policy decisions.