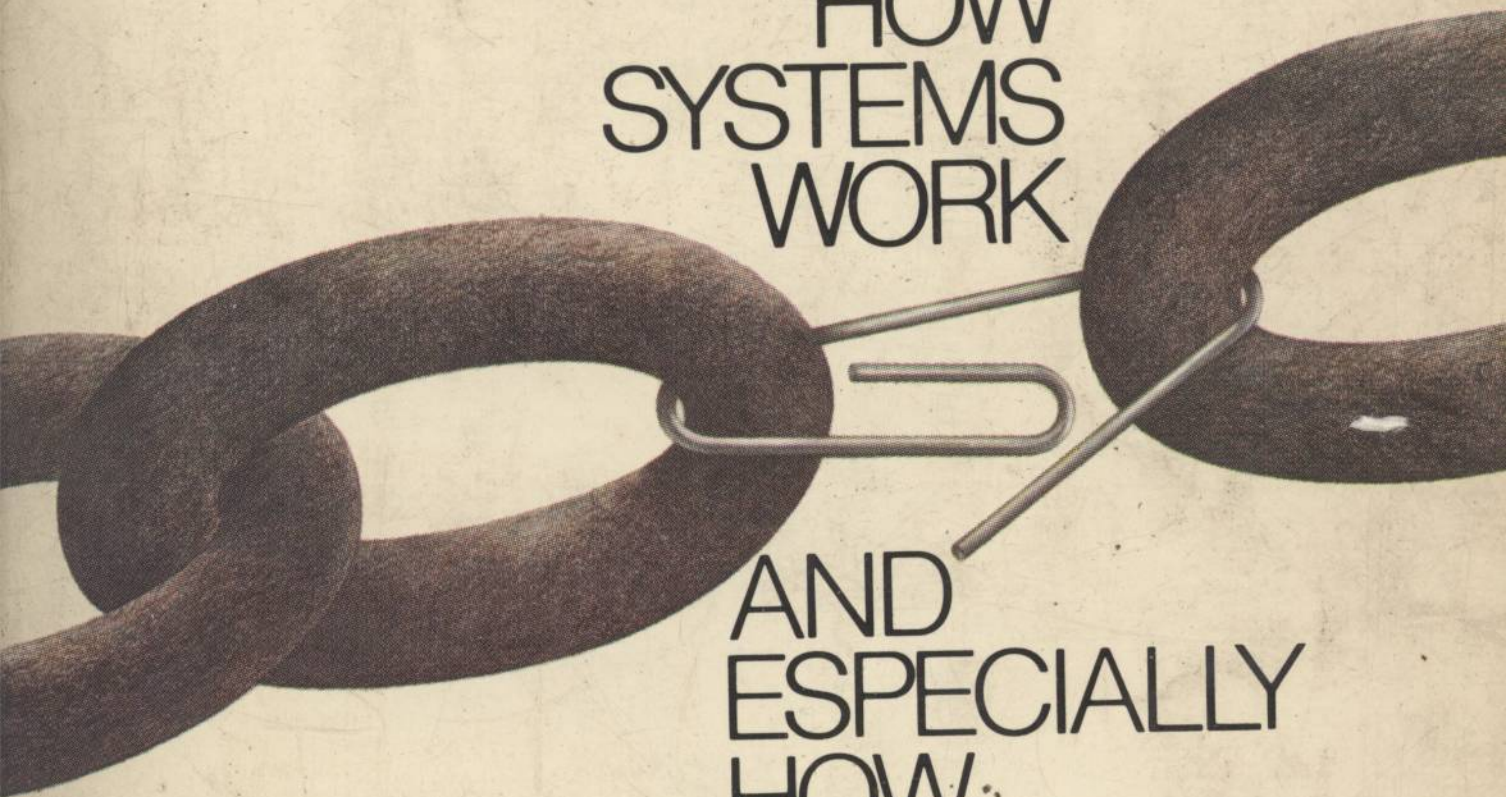


"Funny in the way that Parkinson's books and **The Peter Principle** were funny, but like them, too, it gains strength from an underlying profundity." — **Russell Baker**

# SYSTEMANTICS

HOW  
SYSTEMS  
WORK



AND  
ESPECIALLY  
HOW  
THEY  
FAIL

BY JOHN GALL

Drawings by R.O. Blechman

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BY ELEVEN  
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HOW SYSTEMS WORK  
AND ESPECIALLY  
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BY  
JOHN GALL

Illustrated by R. O. Blechman



A KANGAROO BOOK

PUBLISHED BY POCKET BOOKS NEW YORK





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## **PREFACE**

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### **HOW THIS TREATISE CAME TO BE WRITTEN**

The immediate motivation for undertaking this work was provided by the bizarre experience of a colleague of the author (let us call him Jones), a medical scientist specializing in the study of mental retardation. This field, until recently, was a very unfashionable one, and Jones considered himself fortunate to be employed as Research Associate at a small State Home for retarded children. In this humble, even despised, position he was too low on the Civil Service scale to merit the attention of administrators, and he was therefore left alone to tinker with ideas in his chosen field. He was happily pursuing his own research interests when, following presidential interest and national publicity, mental retardation suddenly became a fashionable subject. Jones received an urgent invitation to join an ambitious federally funded project for a systematic attack upon the "problem"\* of mental retardation.

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\* See "The 'Problem' Problem," Chapter XI.



## PREFACE

Thinking that this new job, with its ample funds and facilities, would advance both his research efforts and his career, Jones joined. Within three months his own research had come to a halt, and within a year he was completely unable to speak or think intelligently in the field of mental retardation. He had, in fact, become *retarded* relative to his previous condition.

Looking about him to discover, if possible, what had happened, Jones found that a dozen other skilled professionals who made up the staff of the project had experienced the same catastrophe. That ambitious project, designed to advance solutions to the "problem," had, in fact, taken most of the available workers in the field and *neutralized* them.

What had gone wrong? Jones, knowing of the author's interest in systems operation, turned to him for advice, and the two of us, jointly, tried to analyze the problem. We first of all reviewed Parkinson's classic essay on Institutional Paralysis,\* hoping to find enlightenment there. Was the disease a fulminating case of Injelititis?\*\* Obviously not. The professional staff of the Institute were competent, dedicated, and hardworking. Futher-

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\* C. Northcote Parkinson. *Parkinson's Law and Other Studies in Administration*. Boston: Houghton Mifflin, 1957.

\*\* Ibid. Injelititis: Incompetence and jealousy interacting according to the formula  $I^3J^5$ .

## PREFACE

more, the administrators were experienced, energetic, and extremely logical in their approach to problems. The Institute was *failing in spite of the best efforts of every one of its members.*

Was it an example of the Peter Principle\* in which members had ascended the hierarchy until they had reached jobs for which they were not fitted? No. This was a new organization, and no one had been promoted very far. *Slowly it began to dawn on us that men do not yet understand the basic laws governing the behavior of complex organizations.* A great enterprise can flounder helplessly or even wither away before our very eyes as the result of malignant but as yet unnamed disorders, or in response to the operation of natural laws whose Newton has not yet been born to announce them to mankind.

Faced with this realization, and moved by the dramatic and touching crisis that had overtaken his colleague, the author resolved to redouble his researches into the causes of organizational ineptitude and systems malfunction, seeking deep beneath the surface for the hidden forces that cause the best-laid plans to "gang aft agely." Little did he suspect, at that moment, where those studies would lead. He had not yet experienced the blinding illumination of the

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\* Laurence J. Peter and Raymond Hull. *The Peter Principle*. New York: Bantam Books, 1970.



## PREFACE

OPERATIONAL FALLACY. The FUNDAMENTAL THEOREM OF SYSTEMANTICS lay well over the horizon. Even the relatively simple and easy-to-understand GENERALIZED UNCERTAINTY PRINCIPLE was not yet a gleam. Those and other deep-ranging and depressing generalizations were to come only much later, after exhaustive researches conducted under the least auspicious circumstances and in settings not calculated to bolster the faint of heart.

What follows is the fruit of those researches set forth as briefly and simply as possible, in a style that is deliberately austere and (the author may be permitted to hope) not without a certain elegance, derived from the essentially mathematical nature of the science itself. The reader must imagine for himself at what cost in blood, sweat, and tears—and in time spent in deep contemplation of contemporary systems—these simple statements have been wrung from the messy complexity of the real world. They are offered in the hope and faith that a *knowledge of the natural laws of complex systems* will enable mankind to avoid some of the more egregious errors of the past.

At the very least this little book may serve as a warning to those who read it, thus helping to counter the headlong rush into Systemism\*

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\* Systemism: n.1. The state of mindless belief in systems; the belief that systems can be made to function to achieve desired goals. 2. The state of being

## PREFACE

that characterizes our age. And who knows? Perhaps readers of this modest treatise will be stimulated to discover new Systems-insights of their own, that could lead to even higher achievements for the infant science of Systemantics.

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immersed in system; the state of being a Systems-person. (See Chapter VI: "Inside Systems.")





## **INTRODUCTION**

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### **PARADOX LOST AND FOUND. DIMENSIONS OF THE PROBLEM**

All around us we see a world of paradox: deep, ironic, and intractable. A world in which the hungry nations export food; the richest nations slip into demoralizing economic recessions; the strongest nations go to war against the smallest and weakest and are unable to win; a world in which revolutions against tyrannical systems themselves become tyrannies. In human affairs, celebrities receive still more publicity because they are "well known"; men rise to high positions because of their knowledge of affairs only to find themselves cut off from the sources of their knowledge; scientists opposed to the use of scientific knowledge in warfare find themselves advising the government on how to win wars by using scientific knowledge . . . the list is endless. Ours is a world of paradox.

Why is this? How does it come about that things turn out so differently from what common sense would expect?



## INTRODUCTION

The religious person may blame it on original sin. The historian may cite the force of trends such as population growth and industrialization. The sociologist offers reasons rooted in the peculiarities of human associations. Reformers blame it all on "the system" and propose new systems that would, they assert, guarantee a brave new world of justice, peace, and abundance. Everyone, it seems, has his own idea of what the problem is and how it can be corrected. But all agree on one point—that their own system would work very well if only it were universally adopted.

The point of view espoused in this essay is more radical and at the same time more pessimistic. Stated as succinctly as possible: the fundamental problem does not lie in any particular system but rather in *systems as such*. Salvation, if it is attainable at all, even partially, is to be sought in a deeper understanding of the ways of systems, not simply in a criticism of the errors of a particular system.

But although men build systems almost instinctively,\* they do not lightly turn their ingenuity to the study of How Systems Work. That branch of knowledge is not congenial to man, it goes against the grain. Goal-oriented man, the upright ape with the spear, is inter-

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\* Recent research has linked this impulse to nesting behavior in birds and to token-collecting in higher primates.