

# Trends in General Systems Theory

---

EDITED BY

**GEORGE J. KLIR**

*School of Advanced Technology  
State University of New York at Binghamton*

X

Technische Hochschule Darmstadt  
Fachbereich Mechanik  
Bibliothek

Inv.-Nr.

BM 156

WILEY-INTERSCIENCE, a Division of John Wiley & Sons, Inc.  
New York · London · Sydney · Toronto

# Contents

---

PREVIEW THE POLYPHONIC GENERAL SYSTEMS THEORY, *George J. Klir*, 1

**Part I Historical and General Aspects 19**

1. The History and Status of General Systems Theory, *Ludwig Von Bertalanffy*, 21
2. The Uses of Mathematical Isomorphism in General Systems Theory, *Anatol Rapoport*, 42
3. Systems and Their Informational Measures, *W. Ross Ashby*, 78
4. A Computer Approach to General Systems Theory, *Gerald M. Weinberg*, 98

**Part II Contemporary Systems Problems: The Social Context 143**

5. The Hierarchical Basis for General Living Systems *John H. Milsum*, 145
6. A System Approach to Epistemology, *Walter Buckley*, 188

**Part III Formal Theories of General Systems: A Description of Some Inductive and Deductive Approaches 203**

7. On an Approach to General Systems Theory, *Robert A. Orchard*, 205
8. A Mathematical Theory of General Systems, *Mihajlo D. Mesarovic*, 251
9. A Wattled Theory of Systems, *A. Wayne Wymore*, 270

<b>Part IV</b>	<b>Various Aspects of Formal Systems Theories</b>	<b>301</b>
10.	Topological Concepts in the Mathematical Theory of General Systems, <i>Joseph V. Cornacchio</i> ,	303
11.	Relative Explanations of Systems, <i>Lars Löfgren</i> ,	340
	Appendices to Chapter 11: I. Effective Computability,	369
	II. Formal Systems,	395
12.	Mathematics and Systems Theory, <i>Preston C. Hammer</i> ,	408
<b>Epilogue</b>	The Past's Future: Estimating Trends by Systems Theory, <i>C. West Churchman</i> ,	434
<b>Appendix</b>	A Guide to the Literature,	444
<b>Index</b>		447