Heinz von Foerster

Understanding Understanding

Essays on Cybernetics and Cognition

With 122 Illustrations

Springer

Contents

1. On Self-Organizing Systems and Their Environments 1

2. Computation in Neural Nets 21

3. What Is Memory that It May Have Hindsight and Foresight as well? 101

4. Molecular Ethology, An Immodest Proposal for Semantic Clarification 133

5. Thoughts and Notes on Cognition 169

6. Responsibilities of Competence 191

7. Perception of the Future and the Future of Perception 199

8. On Constructing a Reality 211

9. Cybernetics of Epistemology 229

10. Notes on an Epistemology for Living Things 247

11. Objects: Tokens for (Eigen-)Behaviors 261

12. Disorder/Order: Discovery or Invention? 273

13. Cybernetics of Cybernetics 283

14. Ethics and Second-Order Cybernetics 287

15. For Niklas Luhmann: "How Recursive is Communication?" 305

16. Introduction to Natural Magic 325

17. Publications 339

Index 351