

## CONTENTS



*Preface* xi

*Acknowledgement* xiii

**Part One · Science and Society**

- 1 · Science and Human Experience 3
- 2 · Does Science Undermine our Values? 24
- 3 · Can Science Serve Mankind? 37
- 4 · Modern Science and Contemporary Discomfort:  
Metaphor and Reality 41
- 5 · Faith and Science 57
- 6 · Art and Science 59
- 7 · Fraud in Science 64
- 8 · Why Study Science? The Keys to the Cathedral 68
- 9 · Is Evolution a Theory? A Modest Proposal 70
- 10 · The Silence of the Second 73
- 11 · Introduction to *Copenhagen* 76
- 12 · The Unpaid Debt 79

**Part Two · Thought and Consciousness**

- 13 · Source and Limits of Human Intellect 87
- 14 · Neural Networks 109
- 15 · Thought and Mental Experience: The Turing Test 114
- 16 · Mind as Machine: Will We Rubbish Human Experience? 124
- 17 · Memories and Memory: A Physicist's Approach  
to the Brain 132
- 18 · On the Problem of Consciousness 148

Cambridge University Press

978-1-107-04317-6 - Science and Human Experience: Values, Culture, and the Mind

Leon N Cooper

Table of Contents

[More information](#)

x

CONTENTS

---

**Part Three · On the Nature and Limits of Science**

- 19 · What Is a Good Theory? 155
- 20 · Shall We Deconstruct Science? 158
- 21 · Visible and Invisible in Physical Theory 170
  - 22 · Experience and Order 177
- 23 · The Language of Physics: On the Role of Mathematics  
in Science 188
  - 24 · The Structure of Space 198
- 25 · Superconductivity and Other Insoluble Problems 218
- 26 · From Gravity and Light to Consciousness: Does Science  
Have Limits? 225