Contents

1	Science, Consciousness and Human Values	1
2	Human Knowledge as the Foundation of Science	11
3	Actions, Knowledge, and Information 3.1 The Anti-Newtonian Revolution. 3.2 The World of Actions. 3.3 Intentional Actions and Experienced Feedbacks 3.4 Cloudlike Forms. 3.5 Simple Harmonic Oscillators. 3.6 The Double-Slit Experiment.	17 17 19 23 25 25 26
4	Nerve Terminals and the Need to Use Quantum Theory 4.1 Nerve Terminals	29 30
5	Templates for Action	33
6	The Physical Effectiveness of Conscious Will and the Quantum Zeno Effect. 6.1 The Quantum Zeno Effect. 6.2 William James's Theory of Volition.	35 35 37
7	Support from Contemporary Psychology	41
8	Application to Neuropsychology	47
9	Roger Penrose's Theory and Quantum Decoherence.	51
10	Non-Orthodox Versions of Quantum Theory and the Need for Process 1	55 57



XII	Cantanta
$\Lambda \Pi$	Contents

	10.2 Bohm's Pilot-Wave Model	62 63
11	The Basis Problem in Many-Worlds Theories	
	and Quantum Physics	65
	in Many-Minds/Worlds Theories	70
12	Despised Dualism 12.1 Historical Background 12.2 A Flawed Argument 12.3 Squaring with Contemporary Neuroscience	79 79 81 81
13	Whiteheadian Quantum Ontology	85 90
	to Tomonaga-Schwinger RQFT	94
	13.3 Similarities Between Whitehead's Ontology and Ontologically Construed RQFT	95
	13.4 The Transition from 'Potentiality' to 'Actuality' in Quantum Mechanics	95
	of Relativity	95
	13.6 The Psychophysical Building Blocks of Reality	96
14	Interview	99
15	Consciousness and the Anthropic Questions	119
16	Impact of Quantum Mechanics on Human Values	139
17	v e	
18	Science-Based Discussion of Free Will 18.1 Physical Versus Mental 18.2 Classical Mechanics Versus Quantum Mechanics 18.3 The Need for a Radical Change	$\begin{array}{c} 153 \\ 154 \end{array}$

	Contents	ŒΠ
	18.4 The Fine Structure of the Quantum Jumps: The Two Choices	157
	18.5 Comparison of the Nature of the Mind-Matter	
	Connection in Classical and Quantum Mechanics	
	18.6 The Universe Prior to Emergence of Life	
A	Gazzaniga's The Ethical Brain	
В	Von Neumann: Knowledge, Information, and Entropy	167
C	Wigner's Friend and Consciousness in Quantum Theory	175
D	Orthodox Interpretation and the Mind-Brain Connection	179
\mathbf{E}	Locality in Physics	183
\mathbf{F}	Einstein Locality and Spooky Action at a Distance	187
\mathbf{G}	Nonlocality in the Quantum World	195
Re	ferences	201
Inc	lex	209