

Time: Towards a Consistent Theory

Fundamental Theories of Physics

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Time: Towards a Consistent Theory

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Contents

Synoptic table of contents	vi
Preface	xi
Introduction	1
<i>Part A: Preliminary paradoxes and puzzles</i>	
I Philosophical time	11
<i>Part B: The measurement of time</i>	
II Newton's time	33
IIIA The Michelson-Morley experiment	49
IIIB Einstein's time	59
<i>Part C: The arrow of time</i>	
IV Thermodynamic time	79
VA The electromagnetic field	102
VB Electromagnetic time	116
<i>Part D: The topology of time</i>	
VIA Bell and non-locality	139
VIB Quantum-mechanical time	161
VII Cosmological time	190
<i>Part E: Towards a consistent model of time</i>	
VIII Mundane time	215
Notes and References	233
Index	247

Synoptic Table of Contents

INTRODUCTION	1	
1 The structure of time	1	<i>Part B: The measurement of time</i>
1.1 Mundane time	1	
1.2 Superlinear time	2	
1.3 The paradox of mundane time	2	
1.4 The irrelevance of (quantum) indeterminism	3	
1.5 Temporal assumptions in the argument from chaos	4	
2 The physicist's point of view	4	
3 Objectives of the exposition	5	
4 Organization	5	
 <i>Part A: Preliminary paradoxes and puzzles</i> 		
I PHILOSOPHICAL TIME	11	
1 The definition of time	12	
1.1 The operational definition	12	
1.2 Is time objectively definable?	14	
1.3 Is a definition necessary?	14	
2 The myth of passage	15	
2.1 The A-series: the flow of time	15	
2.2 The B-series: the arrow of time	16	
2.3 McTaggart's paradox	18	
2.4 Resolution of McTaggart's paradox	20	
3 The sea fight tomorrow	20	
3.1 Fatalism and determinism	21	
3.2 Dumett's paradox	21	
4 Logic and 'free will'	22	
4.1 The Master Argument of Diodorus Cronus	22	
4.2 Lukasiewicz's three-valued logic	23	
4.3 The quasi truth-functional system	24	
5 Zeno's paradoxes of motion	26	
5.1 Achilles, dichotomy and the arrow	27	
5.2 Tasks and supertasks	28	
6 Conclusions	29	
Box items:		
1. Augustine 13		
2. McTaggart 17		
3. Śrī Harsa 19		
4. Zeno of Elea 27		
		II NEWTON'S TIME 33
		1 Introduction 33
		2 Newton's laws of motion 33
		2.1 Bodies 34
		2.2 Forces 35
		2.3 Sources of forces 35
		2.4 Inertial frames 36
		2.5 External forces 37
		2.6 Newton's laws as definitions 38
		2.7 Clocks 38
		3 Falsifiability and physical theories 39
		4 Laws of motion and law of gravitation 41
		5 Laplace's demon 43
		5.1 Time in classical mechanics 43
		5.2 The structure of time in classical mechanics 43
		5.3 The argument from complexity 44
		5.4 Laplace's demon 44
		5.5 Exorcism of Laplace's demon 46
		6 Conclusions 47
		Box items:
		1. Newton and action at a distance 36
		2. Karl Raimund Popper 40
		3. Pierre Simon de Laplace 45
		 IIIA THE MICHELSON-MORLEY EXPERIMENT 49
		1 Introduction 49
		2 The background of aether theories 50
		2.1 The blue sky or why aether was introduced 50
		2.2 The Dragon's head 51
		2.3 Stellar aberration and the finiteness of the speed of light 51
		2.4 The grove of trees 52
		2.5 The aether drag 52
		2.6 A delicate point 53
		2.7 The aether dragged 54
		3 Electrodynamics: theory and experiment 54
		3.1 Maxwell 54
		3.2 The experiment proper 55
		3.3 Miller's observations 56
		3.4 Aether, relativity and metaphysics 57
		3.5 The moral of the story 57

4 Conclusions	57
Appendix: Einstein on the Michelson Morley experiment	58
IIIB EINSTEIN'S TIME	59
1 Introduction	59
2 Electrodynamics	60
2.1 Lorentz #1	60
2.2 Lorentz #2	61
3 Newton's laws again	62
3.1 Velocity-dependent forces	62
3.2 Homogeneity	63
3.3 Isotropy	63
3.4 Straight-line motion	63
3.5 Relative motion and force	64
3.6 Newton's time	64
4 Poincaré	64
4.1 Poincaré and the relativity principle	64
4.2 Poincaré and aether	65
4.3 Poincaré and mechanical explanations	66
4.4 Relative velocity and the Michelson-Morley experiment	66
4.5 Poincaré on Lorentz's theory	67
4.6 The new mechanics	68
4.7 Poincaré on time	69
5 Einstein	70
6 Time	70
7 Conclusions	71
Appendix: The historical record	72

Part C: The arrow of time

IV THERMODYNAMIC TIME	79
1 Introduction	79
1.1 Summary of earlier chapters	79
1.2 Relativity and existence: loss of time asymmetry	79
1.3 Physics and the direction of time	80
1.4 Time symmetry of physics	80
1.5 Is time symmetry reasonable?	80
2 The entropy law	81
2.1 The meaning of entropy	82
3 The Boltzmann H-theorem	83
3.1 The Ehrenfest model	86
4 The reversibility and recurrence paradoxes	87
4.1 Loschmidt's paradox	87

4.2 Poincaré recurrence theorem	87
4.2.1 <i>The recurrence theorem simplified</i>	88
4.2.2 <i>Consequences of the recurrence theorem</i>	88
4.2.3 <i>Relationship to mechanics: Liouville's theorem</i>	89
4.3 The recurrence paradox	89
4.4 Refutation of the paradoxes	90
4.5 Objections to the refutations	92
4.5.1 <i>Is the cosmos shuffled?</i>	92
4.5.2 <i>The meaning(lessness) of large recurrence times</i>	92
5 Resolution of the paradoxes	96
6 Conclusions	96
Appendix: Proof of Liouville's theorem	97
Box items:	
1. Pictures of entropy and evolution	84
2. Mixing and sorting: Maxwell's demon	90
3. Elements of ergodic theory	93
4. Rudolph Clausius	98
5. Ludwig Boltzmann	99

VA THE ELECTROMAGNETIC FIELD **102**

1 Introduction	102
2 Is the field necessary?	102
2.1 Force at a distance	103
2.2 Action by contact	103
2.3 The field	104
2.4 'Contact' and the structure of matter	105
2.5 The meaning of 'contact'	105
3 The electromagnetic arrow of time	106
3.1 Retarded and advanced solutions	106
3.2 Radiative damping and the arrow of time	107
3.3 Mixed potentials	107
3.4 The paradoxes of advanced action	108
4 The divergences of field theory	109
4.1 The Abraham-Lorentz model	109
4.2 Action at a distance	111
4.3 Dirac's approach	111
5 Preacceleration	113
6 Conclusions	115

VB ELECTROMAGNETIC TIME **116**

1 Introduction	116
2 The two-body problem of electrodynamics	117
2.1 Formulation	117
2.2 Some definitions	118

2.3 The recurrence paradox and the past-value problem	119
2.4 The reversibility paradox: time asymmetry of delay	120
2.5 Preacceleration: the Taylor-series approximation	122
2.6 The pond paradox: advanced equations	123
2.7 Indeterminism: mixed deviating arguments	124
2.8 The Wheeler-Feynman paradox	125
3 The absorber theory of radiation	126
3.1 Action at a distance	126
3.2 The Sommerfeld radiation condition	126
3.3 The Wheeler-Feynman theory	127
3.4 Hogarth's theory	129
3.5 Other theories	130
4 Empirical tests	131
5 Conclusions	132
Appendix: Derivation of the relativistic two-body equations of motion with a tilt in the arrow of time	133

Part D: The topology of time

VIA BELL AND NON-LOCALITY 139

1 The topology of time: a general introduction to Chapters VIA, VIB, VII	139
1.1 The language of time	140
1.1.1 <i>The U-calculus</i>	140
1.1.2 <i>The 'minimal' tense logic</i>	141
1.1.3 <i>The language of time: further considerations</i>	142
1.2 A new logic for physics	142
1.2.1 <i>Structured time and the tilt in the arrow of time</i>	142
1.3 Objectives	144
1.4 Non-locality	145
2 Background to Bell's inequalities	146
2.1 Basic experiments	146
2.1.1 <i>The two-slit diffraction experiment</i>	146
2.1.2 <i>Quantization of electron spin</i>	147
2.2 Interpretations	147
2.2.1 <i>Hidden variables</i>	147
2.2.2 <i>The Copenhagen interpretation</i>	148
2.3 Controversy: The EPR Paradox	148
2.4 Classical mechanics as a hidden variable theory	149
2.5 History: the no-hidden-variable theorems	149
2.5.1 <i>von Neumann's 'theorem'</i>	149
2.5.2 <i>Gleason's theorem and context dependence</i>	150
2.5.3 <i>Non-locality of Bohm's theory</i>	150

2.6 Metaphysics: locality and the voodoo principle	150
3 Bell's inequalities	152
3.1 Outline of inequalities	152
3.2 Bell's locality postulate	153
3.3 Experiments on Bell's inequalities	153
3.4 Spookiness: interactions between separated systems	154
3.5 Bell locality: interpretation of experiments	154
3.5.1 <i>The early objections</i>	154
3.5.2 <i>The argument of Barut and Meystre</i>	155
3.5.3 <i>The argument from efficiency</i>	155
4 Further confusion: other notions of locality	157
4.1 The Aharonov-Bohm effect	157
4.2 Locality in quantum field theory	157
4.3 Locality and Localizability	157
4.4 Summary	158
5 The debate over non-locality in classical mechanics	158
5.1 Francis Bacon and magic	158
5.2 Locality, chains of causes, and action by contact	159
5.3 Descartes and Newton	159
5.4 The field	159
5.5 Hyperbolicity: finite propagation speeds	159
6 Conclusions	160
Box items:	
1. Time in q.m.: some recognized new features	143
2. Schrödinger's cat	151
3. Schrödinger's cat and SQUIDs	152
4. The Aharonov-Bohm effect	156

VIB QUANTUM-MECHANICAL TIME 161

1 Introduction	161
2 The orthodox formalism of q.m.	162
3 From quantum logic to the formalism of q.m.	164
3.1 Non-commutativity and non-existence of joint distributions	164
3.2 Need for a change of logic: failure of the distributive law	165
3.3 Birkhoff-von Neumann approach and the orthodox formalism of q.m.	165
3.3.1 <i>The lattice of projections</i>	165
3.3.2 <i>Order relation and orthocomplement</i>	166
3.3.3 <i>Geometrical interpretation</i>	166

3.3.4	<i>Dynamical variables, random variables and self-adjoint operators</i>	166
3.4	The quantum logic approach	167
3.4.1	<i>The minimum requirements</i>	167
3.4.2	<i>Orthomodularity</i>	168
3.4.3	<i>Compatibility</i>	168
3.5	The Jauch-Piron approach	170
3.6	Defects in the quantum logic approach	172
4	The structured-time interpretation of q.m.	173
4.1	Motivation	173
4.2	Overview of the argument	173
4.3	From electrodynamics to structured time	174
4.3.1	<i>The analogy with CSP</i>	174
4.3.2	<i>Past and present contingents</i>	175
4.3.3	<i>The logic of structured time</i>	175
4.4	From structured time to quantum logic	175
4.4.1	<i>Statements</i>	175
4.4.2	<i>Truth-functional worlds</i>	176
4.4.3	<i>Quasi truth-functional worlds</i>	176
4.4.4	<i>Modalities</i>	176
4.4.5	<i>Irreducible contingents and admissible worlds</i>	177
4.4.6	<i>States</i>	177
4.4.7	<i>Quantum measurements, access relations, and selection functions</i>	177
4.4.8	<i>Incompatibility, joint measurements and repeated measurements</i>	178
4.4.9	<i>Measurability</i>	178
4.4.10	<i>'And', 'or', 'if', 'not'</i>	178
4.4.11	<i>Preliminary order relation</i>	179
4.4.12	<i>Orthogonality, compatibility and order relation</i>	179
4.4.13	<i>Main result</i>	180
4.4.14	<i>Example of failure of the distributive law</i>	181
4.4.15	<i>The Lattice structure</i>	181
4.4.16	<i>Admissibility</i>	182
4.4.17	<i>Example of a selection function</i>	182
4.5	Relation to other interpretations	182
4.5.1	<i>The many-worlds interpretation</i>	182
4.5.2	<i>The transactional interpretation</i>	183
4.5.3	<i>The modal interpretation</i>	183
4.5.4	<i>The Copenhagen interpretation</i>	183
5	Conclusions	183
Appendix:	Proof of the main theorem	184
Box items:		
1.	Collected definitions	169
VII	COSMOLOGICAL TIME	190
1	Introduction	190
1.1	Speculation in cosmology	191
1.2	Choice of a theory	191
1.3	The cosmological arrow of time	192
2	Darkness of the night sky: "Olbers' " paradox	193
2.1	Olbers' paradox	193
2.2	The absorption solution	193
2.3	The expansion solution	194
2.4	The finite age solution	194
2.5	Summary	195
3	Cosmological expansion and redshifts	196
3.1	Hubble's law	196
3.2	Other interpretations of the redshift	197
4	The Friedmann models	197
4.1	The cosmological principle	197
4.2	The FLRW line element	198
4.3	Identification with observable quantities	199
5	The cosmic microwave background	201
6	The beginning of time	202
6.1	The initial singularity	202
6.2	Singularities and black holes	202
6.3	Cosmological singularities	203
6.4	Interpretation of singularities: shocks	203
6.5	Shocks and hyperbolicity	204
7	The end of time: dark matter and rotation of galaxies	205
8	The age of the universe and closed timelike curves	206
9	Problems about time: a cosmological perspective	208
9.1	Is there a proper clock?	208
9.2	Related asymmetries?	209
9.3	Imperfect asymmetries?	210
9.4	Local asymmetries?	210
9.5	Is asymmetry adequate?	211
Part E: Towards a consistent model of time		
VIII	MUNDANE TIME	215
1	Introduction	215
2	Mundane time: linear past and branching future	216
2.1	Reformulation of the A-series	216
2.2	Ignorance, past and future	216
2.3	Epistemic and ontic contingents	217
3	Comparison with time in physics	218
3.1	The B-series from relativity	218

3.2	Limitations of the arrow simile	218	5.2.4	<i>Laplace's demon</i>	226
3.3	Branching of time and the failure of physical laws	218	5.3	Epistemically broken time: the argument from chaos	226
4	Need for consistency	219	5.3.1	<i>Predictability and contingents</i>	226
4.1	The problem of consistency	219	5.3.2	<i>Reversibility of chaos</i>	226
4.2	Building a consistent model of experience	219	5.3.3	<i>Unpredictability of the past</i>	227
4.2.1	<i>The two-time theory</i>	219	6	Consistency through tilting time	227
4.2.2	<i>Mundane time and assumptions about time in physics</i>	219	6.1	Tilting time and consistency within physics	227
4.3	Mundane experience as hallucination: the problem of intentional choice	221	6.2	Preliminary consistency with mundane time	228
4.3.1	<i>The flat earth and parallax</i>	221	6.3	Remaining problems of consistency	228
4.3.2	<i>The problem of intentional choice</i>	221	6.4	The problem of intentionality	228
4.4	The complete problem of consistency	222	6.4.1	<i>Temporal assumptions underlying epistemically broken time</i>	228
4.5	Do physical laws somehow fail for human beings?	222	6.4.2	<i>Explanation from final causes</i>	228
5	Consistency through broken time	222	6.4.3	<i>Intention or 'purpose' as future data</i>	229
5.1	Ontically broken time: quantum indeterminism	223	6.4.4	<i>Intentionality with mundane time</i>	229
5.1.1	<i>Chance vs. choice</i>	223	6.4.5	<i>Differences between the two notions</i>	229
5.1.2	<i>Occasionalism</i>	223	6.5	The problem of macrophysical choice	230
5.1.3	<i>The transition to macrophysics</i>	224	6.5.1	<i>Advanced interactions as perturbations</i>	230
5.1.4	<i>Quantum 'choice' and measurement</i>	224	6.5.2	<i>Deep history dependence</i>	230
5.1.5	<i>Summary of quantum indeterminism and mundane time</i>	224	6.5.3	<i>Anticipatory phenomena (choice) and Maxwell's demon</i>	230
5.2	Epistemically broken time: the argument from complexity	225	6.5.4	<i>Ampliatory self-organization</i>	230
5.2.1	<i>The complexity of macrophysical systems</i>	225	6.6	The problem of past contingents: structured time vs. past linearity	231
5.2.2	<i>Thermodynamics and stochastic evolution</i>	225	7	Conclusions	231
5.2.3	<i>Comparison with quantum indeterminism</i>	225		Notes and References	233

Preface

TIME is indubitably a matter of life and death! But it is a subject on which misconceptions are widely prevalent, even amongst physicists. This prompted me to write a series of expository papers, *On Time*, which appeared in the pedagogical journal *Physics Education* (India) as follows.

- I Philosophical time, 7(3), 204-217, 1990.
- II Newton's time, 8(1), 15-25, 1991.
- IIIA The Michelson-Morley experiment, 8(3), 193-200, 1991.
- IIIB Einstein's time, 8(4), 293-305, 1992.
- IV Thermodynamic time, 9(1), 44-62, 1992.
- VA The Electromagnetic field, 9(2), 119-128, 1992.
- VB Electromagnetic time, 9(3), 251-265, 1992.
- VIA Bell and non-locality, 10(1), 55-73, 1993.
- VIB Quantum-mechanical time, 10(2), 143-161, 1993.
- VII Cosmological time (to appear).

I am grateful to Professor A.W. Joshi, Assistant Editor of that journal, for inviting me to write this series and for his constant enthusiasm which has been a source of support. I am also grateful to the Editors for permission to reproduce the papers in a slightly modified form in this book.

While writing this series of papers, it was hardly possible to avoid the infusion of some new ideas and a fresh way of looking at old controversies. I am grateful to the Indian Institute of Advanced Study, Shimla, for a Fellowship which made it possible to complete the core of the series and shape it into a book. Apart from the Fellowship which provided the time, the tranquil and beautiful setting of the Institute was a definite source of inspiration. I am grateful to the authorities of the Institute, particularly to Professor S. Gopal, Chairman of the Governing Body, and Professor Mrinal Miri, Director, for readily agreeing to my proposal to have the book published outside so that it might reach a wider audience.

In the surcharged atmosphere of an organization like C-DAC, invested with the mission of developing a supercomputer, from scratch, within three years, it would hardly have been possible to commence (and later complete) this book (even between delayed flights), but for the enlightened management of Dr. Vijay P. Bhatkar.

I am grateful to Professor Jagdish Mehra for the general encouragement that he provided.

In addition, there are a large number of people to whom my debt must remain unacknowledged. These include the readers of *Physics Education*, and the anonymous referees who provided useful feedback.

Unfortunately, there is no one whom I can thank for careful preparation of the typescript, so there is no one to whom I can indirectly pass on even part of the blame for any errors that remain!

I dedicate this book to Tomu and Jaya for the sudden disruption in their lives that the writing of this book entailed.