

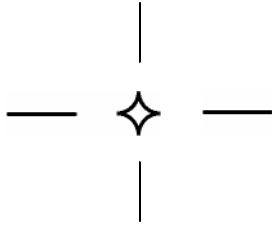
Also by Roger Ellman

THE PHILOSOPHIC PRINCIPLES OF RATIONAL BEING

*ANALYSIS AND UNDERSTANDING OF
REALITY, TRUTH, GOODNESS, JUSTICE, VIRTUE,
BEAUTY, HAPPINESS, LOVE, HUMAN NATURE,
SOCIETY, GOVERNMENT, EDUCATION, DETERMINISM,
FREE WILL, and DEATH*

GRAVITICS

THE PHYSICS OF THE BEHAVIOR AND CONTROL OF
GRAVITATION



THE ORIGIN AND ITS MEANING

*ON THE ORIGIN OF THE UNIVERSE
AND ITS MECHANICS,
THE MECHANISM AND ORIGIN OF
INTELLIGENCE,
AND THE IMPLICATIONS
FOR THE INDIVIDUAL AND SOCIETY*

ROGER ELLMAN

Cataloging Data

Ellman, Roger (1932-)
The Origin and Its Meaning, Second Edition

Overall - Five Parts, 582 pages
Philosophy, cosmology, physics, intelligence, sociology

Part I - Thesis introduction, 8 pages

Part II - The origin of the universe, 20 pages
Philosophy, cosmology

Part III - The resulting natural universe, 475 pages
Physics: physical laws, forces, fields, particles, atomic
physics, nuclear physics, radiation, gravitation, cosmology

Part IV - Artificial intelligence, 50 pages
Digital logic, universals, perception, concepts, thoughts,
thinking, memory, purposive behavior, consciousness

Part V - The social implications, 29 pages
Philosophy, sociology

THE ORIGIN AND ITS MEANING

Second Edition

Copyright (c) Roger Ellman 2004

All rights reserved. This book may not be reproduced nor transmitted in any form nor by any means, electronic, mechanical or other including but not limited to photocopying, recording or by any information storage or retrieval system without written permission from the author, except for the inclusion of brief quotations in a review.

Library of Congress Catalog Card Number: 96-090912

Published by: The-Origin Foundation, Inc.,
320 Gemma Circle
Santa Rosa, CA 95404, USA
707-537-0257
<http://www.The-Origin.org>

ISBN 0-9777782-0-7

PREFACE TO THE 2ND EDITION

Aside from incorporating all of the detected typographical errors and miscellaneous other minor adjustments previously supplied as *errata*, the reason for this second edition of *The Origin and Its Meaning* is twofold.

- 1 - The validation of the universal exponential decay in the form and with the constants and quantities as proposed in the original edition has occurred in actual observations, and
- 2 - Advances in astronomical equipment and techniques has facilitated probing far deeper into the universe (i.e. farther back in time) than at the time that the original edition was being prepared.

The validation of the universal exponential decay results from observations of the Pioneer 10 and 11 satellites, which exhibit what has come to be called the "Pioneer anomalous acceleration". The details can be found at the scientific / technical paper archive site on the Internet World Wide Web at the URL <http://www.arxiv.org> in the paper *physics/9906031* titled *A Comprehensive Resolution of the Pioneer 10 and 11 "Anomalous Acceleration" Problem Presented in the Comprehensive Report "Study of the Anomalous Acceleration of Pioneer 10 and 11" and the Relationship of that Issue to "Dark Matter", "Dark Energy", and the Cosmological Model.*

The advances in astronomical observations has penetrated the universe back to a redshift of $z = 1.0$, far beyond the value at the time of the original edition of *The Origin and Its Meaning* when reliable meaningful redshifts were up to $z = 3.5$ with a small number of poorly understood objects at redshifts in the range of $z = 4$ to 5 . The deeper observations include some indications that they may be penetration to the time of the formation of the earliest galaxies, some *2 to 3 billion years* after the "Big Bang" origin.

Those new data required a recalculation of the estimated age of the universe, which in the original edition was in the range of *17 1/2 to 18 billion years*, to the new value of about *29-30 billion years* [and perhaps moderately more with newer data yet to be obtained]. The new data made possible and made essential an additional section of the book, detail notes *DN 13 - The Cosmos Now and Its Expansion From The Origin To The Present.*

In addition, the existing Section 28 has been expanded by addition of "*The Philosophic Principles of Rational Being*", which treats the philosophical issues of reality, truth, good, justice, and virtue thereby laying a helpful basis for the objectives of Part V and of the overall book, the society of social love.

SUMMARY / PRECIS

This work addresses man's two great questions:

- Where did all existence come from; how did it come to be ?
- What is the purpose, the point, the meaning of it all ?

The starting point is the only beginning possible if one is to insist on beginning at the real beginning -- absolute nothing. It is the only "thing" or state that requires no explanation of its origin, of its being. It is naturally to be expected.

While such an empty and barren beginning would seem to preclude any development at all, it can be shown, and is shown, that the primal absolute nothing inevitably had to change; that is, it could not avoid becoming, changing into, something other than nothing. That change was the beginning of our universe.

From that beginning, and the unavoidable nature and characteristics of that change, the universe of today can be and is derived. All of known, valid, established 20th Century physics is derived from that Origin instead of being merely codified empirical results. Using the new information about the universe and the new understanding of it, 20th Century physics' several dilemmas and unresolved problems are completely solved, including: the wave / particle problem, the atomic nuclear structure, gravitation, and the unity of matter, field and forces (Grand Unified Theory).

The success of that derivation validates and verifies the correctness of the posited Origin and the sole postulate upon which the development is based: the impossibility of infinity (which, of course, also requires that conservation be maintained).

It is thus shown that the universe is accounted for and explained solely by purely material, natural causes, events and actions without the need for any god, entity, or other non-material cause, principle or source.

This seemingly barren origin, precluding the existence of any creator-originator, any guiding intelligence or rational source of morality and ethical principles, would seem to condemn us to the jungle of wild beasts, unrestrained competition, and rapacious pursuit of self interest and personal survival at any and all others' expense. The world has indeed been that way most of its existence and is still largely so.

But the material universe evolves intelligence and it can be shown, and is shown, that intelligence achieves its greatest development, its optimum success, via cooperation, sharing and social love, not through rapacious, monolithically self interested competition.

So. From the material origin of the universe, occurring inevitably from the original primal nothing, is obtained the natural law of intelligent society, the "golden rule" of love and cooperation as a derived, essential law of reality. The Origin of all also causes and determines the purpose, the end, of all. And that is the rational society of social love.

CONTENTS

<i>Prologue</i>	vii
<i>Part I - Introduction</i>	1
1 Overall Thesis and Objective	2
2 (Prefatory Remarks)	6
3 On Testing and Proving a Hypothesis	7
<i>Part II - On the Origin of the Universe</i>	9
4 The Problem of Origin	10
5 The Hypothesis (1) - The Origin of Diversity	13
6 The Hypothesis (2) - The Origin of Matter and Energy	17
7 Time, Space and Nothing	21
8 Comparison of Theories	23
<i>Part III - On the Mechanics of the Universe</i>	29
9 The Problem of Physics	30
10 The Probable Beginning	49
<u>A Model for the Universe</u>	
11 (1) - Electric Field and Charge	62
12 (2) - Mass and Matter.....	70
13 (3) - Motion and Relativity	91
14 (4) - Magnetic and Electromagnetic Field	118
15 (5) - Quanta and the Atom	159
16 (6) - The Neutron, Newton's Laws.....	232
17 (7) - The Atomic Nucleus - The Nuclear Species	293
18 (8) - Radioactivity	330
19 (9) - Gravitation	342
20 (10) - The "Cosmic Egg"	391
■ ■ ■	
21 The Probable End.....	414
<i>Part IV - On the Mechanism of Intelligence and its Origin</i>	504
22 The Problem of Intelligence	505
23 Universals and Perception - (1)	507
24 Universals and Perception - (2)	525
25 Concepts, Thoughts, Thinking and Memory	534
26 Purposive Behavior: Goals, Motivation and Consciousness.....	540
27 Free Will and Predestination, Artificial Intelligence and Conclusion	549

<i>Part V - Implications for the Individual and Society</i>	554
28 The Philosophic Principles of Rational Being and the Original Thesis: Love	555
29 The Individual and Social Nature of Man and His Creation, Society	565
30 The Evolution to Civilization	575
<i>Epilogue 1</i>	viii
<i>Epilogue 2</i>	x

Detail Notes:

1 Differential Calculus, Derivatives	54
2 Analysis: All Derivatives Finite, Selecting U(t)	57
3 The Units of Charge and of Coulomb's Law	87
4 Derivation of Mass, Energy in Rest, Kinetic Form	111
5 Integral Calculus (Mathematics of Summing Infinitesimals)	114
6 Integration Details for Magnetic Field Derivations	139
7 Maxwell's Equations	156
8 Analysis of Some Minor Effects on Orbital Electron Motion	224
9 Orbital Electron Energy Analysis	229
10 Analysis of Coulomb Focusing Details	381
11 Calculation of the Cosn(x) Limitation	411
12 Solving the 2nd Order Linear Differential Equation with Constant Coefficients	437
13 The Cosmos Now and Its Expansion From The Origin To The Present	472

Appendices:

See list at	583
-------------------	-----

PROLOGUE

*The Universe,
the totality of reality with its
galaxies
stars
planets
substances
things
all interacting in harmony,
its being as itself, as it is,
is magnificent in
its natural beauty
simplicity
symmetry
and purity;*

*But it is nothing compared to Life,
which came from it.*

*And Life
achieves its culmination,
is nothing without,*

*Love:
person to fellow person
of comradeship and friendship
emotional
romantic
sexual
and especially
the touching of souls
in unison
in empathy
in harmony.*

*The greatest society
of rational beings
is that of social love;*

*And the greatest good,
the greatest thing in all existence,
without which everything else is meaningless,*

Is the love of one person for another.