



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*

2nd Edition

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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

Appendices, 7 pages

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Edition 2.1

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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 $z = 10$, 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 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 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, 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.

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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.