











Also by Roger Ellman:

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***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*

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***ON THE NATURE OF MATTER***

*THE ORIGIN OF THE UNIVERSE CREATED MATTER  
FUNDAMENTALLY WAVE IN NATURE, NOT PARTICULATE*

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***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*

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***GRAVITICS***

*THE PHYSICS OF THE BEHAVIOR AND CONTROL OF GRAVITATION*

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***THE TROUBLE WITH THE HUBBLE LAW***

*AN ALTERNATIVE TREATMENT OF REDSHIFTS IS EVIDENCED BY  
FOUR INDEPENDENT OBSERVED COSMOLOGICAL EFFECTS.*

**RESOLUTION OF THE "SPOOKY" PROBLEMS  
OF QUANTUM MECHANICS**

*THE WAVE NATURE OF PARTICLES AND LIGHT RESOLVES  
EINSTEIN'S "SPOOKY" ENTANGLEMENT PROBLEM AND THE  
"WEIRDNESS" OF QUANTUM MECHANICS*

**HOW TO TRAVEL TO AND EXPLORE MARS OR  
ALPHA CENTAURI B**

*USE OF FUEL IS IMPRACTICAL FOR SPACE EXPLORATION. THE ONLY  
FUEL-FREE ACCELERATION FOR SPACE EXPLORATION IS BY  
CONTROLLED GRAVITATION, AND THAT IS THE ONLY MEANS FOR A  
FLYING VEHICLE TO EXPLORE A DISTANT PLANET AND THE ONLY  
MEANS OF TRAVEL TO IT.*

**PRIME OBJECTIVE TIME, PRIME OBJECTIVE SPACE**

*EINSTEIN INSISTED ON TWO UNIVERSAL PRINCIPLES:*

*1 – DENIAL OF A PRIME FRAME OF REFERENCE*

*2 - AND LIKEWISE DENIAL OF PRIMARY TIME*

*Neither of those denying principles is correct.*

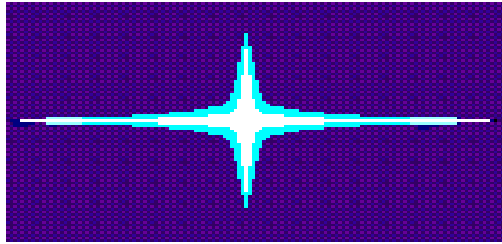
*It is here shown that there is a prime frame of reference, objective space.  
And, it is here shown that there is one grand overall flow of time, objective time.  
Correcting those denials removes their adverse affects on Science and on Society*

**THOUGHTS IN REFLECTIONS ON LIFE**

**POETRY AND SCULPTURE**







***HOW THE BRAIN  
PRODUCES  
THE MIND  
AND CONSCIOUSNESS***

Can the Brain comprehend itself?  
Is it possible for the Brain to figure itself out ?  
Is it possible for the Brain to understand itself,  
to explain consciousness ?  
Yes.

***ROGER ELLMAN***

Cataloging Data

Ellman, Roger (1932- )

*How the Brain Produces the Mind and Consciousness*

It is the “software” how the neural components logically interact that produces what we experience in our minds

HOW THE BRAIN PRODUCES THE MIND AND CONSCIOUSNESS

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## ABOUT THE AUTHOR

The-Origin Foundation, Inc. is a non-profit organization founded to foster independent scientific, mathematical, and philosophical research.

The author of the present work, Roger Ellman is the General Director of the foundation.

Roger Ellman has published over fifty professional papers on topics ranging from physics, cosmology, and astrophysics to artificial intelligence and mathematics.

He has presented some of his papers to conferences of / at:

The American Physical Society [APS], .  
The American Society for the Advancement of Science,  
Cambridge University, United Kingdom  
The Library of Alexandria, Egypt  
The Russian Academy of Natural Sciences, St Petersburg  
The Hungarian Academy of Sciences, Budapest  
A Science Conference in Shang Hai, China

He is author of nine books in addition to the present “How the Brain Produces the Mind and Consciousness”.

His education includes graduate studies at Stanford University after graduating from West Point, the United States Military Academy.





## *PREFACE*

Cognition is best understood by examining a model of a cognitive system. Such a model is presented here.

Most discussions of the mind or brain focus on the "hardware", the neural structure and its biological / electrochemical functioning. But, it is the "software", how the neural components logically interact, that produces the results that we experience in our minds.

The objective is conscious intelligence – how we see, think, remember, know ourselves, learn, plan create. To describe and explain those sophisticated functions it is necessary to start with simple first steps, building blocks, and gradually erect the total structure. The reader is urged to be patient with the review of fundamentals in the earlier portions of this book, which review prepares the basis for the development.

The development begins with universals and mechanisms for recognizing or identifying them. It then proceeds through perception, learning, and the processing of universals to mental concepts, thoughts, thinking and memory. Then purposive behavior and its related goals, motivation and consciousness are developed. Finally the implications for the issue of free will is addressed.

For the purposes of this investigation of the mental processes no attempt is intended to relate those processes to various specific regions of the brain in which they may take place. Rather the intent here is to fully develop the concept of the processes that must take place in an intelligent system such as the brain regardless of the specifics of biological structure.