

Also by Roger Ellman:

*** 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*

*** ON THE NATURE OF MATTER**

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

*** THE PHILOSOPHIC PRINCIPLES OF RATIONAL BEING**

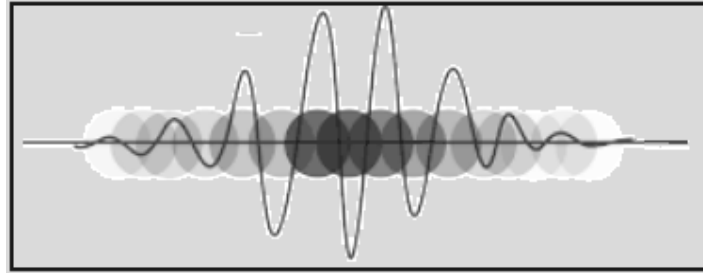
*ANALYSIS AND UNDERSTANDING OF
REALITY, TRUTH, GOODNESS, JUSTICE, VIRTUE, BEAUTY, HAPPINESS, LOVE,
HUMAN NATURE, SOCIETY, GOVERNMENT, EDUCATION, DETERMINISM,
FREE WILL, AND DEATH*

*** GRAVITICS**

THE PHYSICS OF THE BEHAVIOR AND CONTROL OF GRAVITATION

*** THE 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 - PARTICLE DILEMMA,

*WAS ESSENTIALLY DECIDED IN FAVOR OF THE PARTICLE
CONCEPT BY THE COMBINATION OF PLANCK'S TREATMENT OF
BLACK BODY RADIATION AND EINSTEIN'S TREATMENT OF THE
PHOTO -ELECTRIC EFFECT.*

*IT IS HERE SHOWN THAT THAT CHOICE WAS A MISTAKE.
THE WAVE NATURE OF PARTICLES AND LIGHT RESOLVES
EINSTEIN'S “SPOOKY” ENTANGLEMENT PROBLEM AND THE
“WEIRDNESS” OF
QUANTUM MECHANICS.*

ROGER ELLMAN

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of
Quantum Mechanics*

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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 *Resolution of the “Spooky” Problems of Quantum Mechanics*, 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.

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The Hungarian Academy of Sciences, Budapest

A Science Conference in Shang Hai, China

He is author of five books in addition to the present one: *Resolution of the “Spooky” Problems of Quantum Mechanics*”.

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

INTRODUCTION

In classical physics the principles of “realism” and “locality” are fundamental, in effect axioms.

Realism is the principle that all objects must objectively have a value of any of their measureable characteristics before any measurement is made and independent of any measurement made.

Locality states that an object is only directly influenced by its immediate surroundings. For an action at one location to have an influence at another non-contiguous location, something in the space between the locations must mediate the spatial separation.

Quantum Mechanics rejects those principles, especially in its phenomenon of “entanglement”.

Quantum entanglement is a quantum mechanical phenomenon in which the states of two or more objects have to be described with reference to each other, even though the individual objects may be spatially separated. This leads to correlations between observable physical properties of the systems.

As a result, measurements performed on one system seem to be instantaneously influencing other systems entangled with it in spite of their spatial separation.

The “spooky”, as Einstein called it, aspect of this is the violation of locality, the action at a distance with no intervening mediation of that separation. Einstein and others sought to show that there were other factors operating that did mediate the separation, but they were not successful. The problem remained, “How did one particle or system of particles communicate with another that is spatially separate?”

It is here shown that such a communication cannot exist and is impossible. Therefore the interpretation of the effect is mistaken or if not the effect would be *supernatural magic*. The situation is analyzed and the error demonstrated.

The logic of the presentation follows on the second next page.

LOGIC OF THE PRESENTATION

On the Resolution of the Problem of Realism

1. There is no cause nor mechanism for the following contended QM effects:
 - Not for superposition of states,
 - Nor for its particles existing only as a probability wave function,
 - Nor for particles' change from probability to specific existence
being initiated solely by an act of observation in some form, and
 - Nor for particles knowledge about conditions physically beyond their ken.
2. Analysis of the Double Slit Experiment shows that:
 - All of the quantum behavior observed is accounted for by classical physics;
 - Therefore, there is no need for the unsupported QM explanation.

On the Resolution of the Problem of Locality and Entanglement

1. For the QM effects there must be communication between the parties such that:
 - Every particle must continuously broadcast its quantum state,
 - Each entangled particle must have an identification to that effect, and
 - For each entangled pair there must be mechanism enforcing correlation.
2. Each particle does universally broadcast communication of its state but that lacks:
 - Identification of its being entangled, and
 - Correlation enforcement mechanism.
3. That communication lacking and a second with that first being impossible, either:
 - The entanglement and its effects do not exist, and are a misunderstanding, or
 - Entanglement is valid, an actual example of, by definition, *supernatural magic*.
 - That latter conclusion cannot be.

On Quantized Angular Momentum and the Stern-Gerlach Experiment

1. As the temperature increases in the quite hot silver vapor of the furnace the collimated beam of silver atoms becomes partially ionized, positive ions.

2. The electrons lost by the ionized silver atoms flowing in the collimated beam are temporarily acquired by other silver atoms which become negative ions.

3. Each rapidly moving ion in the beam is an individual electric current and per Ampere's Law generates a magnetic field and consequent magnetic dipole on each ion.

4. In brief the effect of as if the silver atoms have "spin" and quantized angular momentum is actually due to their loosely bound outermost electrons and their migration within the silver atom beam resulting in individual positive and negative silver ions' local Ampere's Law current and consequent magnetic dipoles. The quantization is singly ionized [one electron] positive and negative silver atoms.

- Thus here quantized angular momentum is not an inherent "natural property" of particles rather its apparently appearing is really a classical electric effect.

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