

## ATOMISM AND LOGIC

by

Jovan Djuric, retired UNM professor  
Balkanska 28, 11000 Belgrade, Serbia  
E-mail: [oliverdj@eunet.rs](mailto:oliverdj@eunet.rs)

### ABSTRACT

This rather short article indicates some obvious logical problems in the atomic physics, which are due to some obviously still unresolved problems in macrocosm. It is emphasized, that the rush into the research of microcosm towards the end of the 19<sup>th</sup> century, left the problem of the origin of the Earth's magnetic field unresolved, which is still the mystery after Pierre Currie in 1895 with his experiments of heating magnets crushed the ancient belief that the Earth is a permanent magnet. It is shown in this article that gravitation and magnetism represent the single unique entity.

### INTRODUCTION

Atomism in philosophy designates "The ancient theory of Democritus, Epicurus, and Lucretius, according to which simple, minute, indivisible, and indestructible particles are the basic components of the entire universe", which is the exact quotation from *The American Heritage Dictionary of the English Language*, Third Edition 1992 by Houghton Mifflin Company, Electronic Version 1994 by INSO Corporation, Reference [1]. This definition can be also found in the similar form in many college editions of the Webster's dictionaries of the American English.

It can be also found in the same source under the word *atom*, that the Greek word *atomos* means indivisible, and it is a compound of the Greek prefix *a*, which means *not*, and *tomos*, which means *cutting* from *temnein* meaning *to cut*. Thus, atomism as a theory to repeat once more, is essentially the hypothesis of the indivisibility and of the indestructibility of the minute, very, very small particles called atoms, which word is derived from the Greek word *atomos*, and that must be logically called the atomic hypothesis.

The atomic physics is a branch of physics which was established and developed at the turn of the 19<sup>th</sup> and the 20<sup>th</sup> century, i.e., more than 100 years ago, and it is essentially based on the belief or the conviction that atomism as the theory of knowledge is true, and that the atomic hypothesis is an absolute axiom, a self-evident principle, which is accepted as true without any proof or argument, i.e., a postulate.

### LOGICAL VIOLATION

It is an absolutely clear and evident fact that the atomic hypothesis is logically violated in modern physics, even from the very beginning of the atomic physics. Namely, numerous experimentally established facts show that various chemical elements form various compounds. To use the presently accepted nomenclature, the smallest part of a chemical element is called an atom, which in a chemical compound unites with another

atom of another chemical element. To form a compound those atoms cannot be absolutely indivisible, since the unification of an atom with another atom logically means that those atoms must lose something from themselves and obviously must receive something from the atoms with which they form the compound. **Thus, the inexorable logical conclusion is that the so-called atoms of the various chemical elements are not atoms by the very definition of the word atom on the basis of the atomic hypothesis as the absolute axiom.** It is an obvious violation of logic of the atomic hypothesis to call the smallest parts of the chemical elements the atoms. They are not true atoms and should not and must not be called the atoms.

### TRUE ATOMS

It appears to this author that the only 3 (three) particles, namely protons, electrons and neutrons can be logically called atoms. The first two of those three particles have indefinite life as experimentally observed, while the neutron appears to live freely about 1 hour. The first two particles, protons and electrons, are electrically charged and they possess their magnetic moments, which are logically acceptable from the present viewpoint, since the magnetic moments are produced only by the movements of the electrical charges according to the presently accepted view in physics. The neutrons present a problem for the present view of physics, since the neutrons are electrically neutral, uncharged, but they have the definite experimentally observed magnetic moment, which is according to the present view in physics strictly connected with the electrical charge.

This fact led to very strange and absolutely illogical attempts to explain it. It is not easy to find when the term *subatomic particle* was used for the first time, and who was and is responsible for that compound word *subatomic*. It is an obvious conjunction of the Latin prefix *sub*, which means *below* or *under*, and the Greek prefix *a*, which means *not*. The prefix *sub* implies negation, while the prefix *a* is definite negation. The conjunction of those two prefixes may logically mean anything one wants, most likely no meaning at all, but it allows purely formally to coin the word *subatomic*, which is definitely the violation and the abandonment of the atomic postulate, i.e., the abandonment of atomism, since the word *subatomic* implies that *atomic* does not mean *indivisible* as originally postulated by the atomic hypothesis. **This is a definite violation of logic, which leads to all kinds of logical absurdities.**

### ABSURDITY

As an example of the absurdity due to the *de facto* abandonment of logic and of the basic atomic hypothesis-postulate, probably from the very beginning of the atomic physics, the hypothetical subatomic particle *quark* should be mentioned. At first, only 3 (three) quarks were proposed and hypothesized with each having positive or negative  $1/3$  of quantum electrical charge, but numerous additional *quarks* with the adjectives *bottom*, *top*, *beauty*, *strange*, etc. were introduced to resolve various and obvious logical difficulties, with the absolutely absurd hypothetical particles called *gluons* to hold those electrically charged *quarks* together

The strangest absurdity is that Murray Gell-Mann, the physicist, Nobel Prize Laureate who proposed the hypothetical subatomic particle *quark* and received the Nobel prize for that, wrote to the Editor of *the Oxford English Dictionary* (v. under quark(1) *The American Heritage Dictionary of the English Language*, Third Edition 1992 by Houghton Mifflin Company, Electronic Version 1994 by INSO Corporation [1]) that the book *Finnegans Wake* by the Irish surrealist author *James Joyce* (1882-1941) with the scurrilous 13-line poem against King Mark, the cuckolded husband in the Tristan legend was the inspiration for the name *quark*. And the now dead surrealist author James Joyce is surprisingly mentioned in some most advanced physics textbooks, v. for example [2], p. 607 “Their name, quarks, something incomprehensible and mystical from one of the novels of the Irish writer J. Joyce, is due to just these properties.”!!! What an absurdity!!! **Physics is the science of reality, nothing incomprehensible and mystical!!!**

### LOGICAL SOLUTION

It must be pointed out at the end of this short article, that all logical problems in the present-day atomic physics, particularly those connected with the neutrons, which undoubtedly possess the experimentally measured magnetic moments, are absolutely removed by the fact, experimentally and theoretically discovered by this author in his unified field theory [3] and in the paper “*New Theory of the Earth’s Magnetic Field*” [4], that gravitation and magnetism represent a unified single entity, so that the magnetic moment is the mass moment with the suitable proportionality constant which depends on the units of measurements. In view of the inevitable presence of various gravitational fields, no particle of any kind can be absolutely spherically symmetrical. Due to the inevitable asymmetry, all particles of any kinds and forms, including by all means the neutrons, must possess the appropriate mass moments, i.e., magnetic moments, which are indeed observed experimentally. **This is simple logic and in agreement with all observed facts without any need for hypothetical subatomic particles.**

It is quite clear from what was stated so far in this article, that all logical problems in the present-day atomic physics stem from the fact, that some macroscopic problems remained unresolved, and are still unresolved, while the humanity rushed at the end of the 19<sup>th</sup> century into microscopic research, but the visibility is extremely difficult in microcosm. Namely, in 1895 Pierre Currie with his experiments with heated magnets crushed the ancient belief that the Earth is a permanent magnet, and the origin of the Earth’s magnetic field is still an unresolved mystery, since the dynamo theory is obviously inadequate, while the gravitational theory of the origin of the Earth’s magnetic field of this author, identifying gravitation and magnetism as a single entity (v. [4]), is dogmatically rejected without any scientific argument and opinion by all leading scientific journals. **But the progress in understanding nature in microcosm cannot be obtained without resolving first of all some obvious macroscopic problems in physics.**

## REFERENCES

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