

## EVENTOLOGICAL PRINCIPLES AND EVENTOLOGICAL H-THEOREM

Oleg Vorobyov

Siberian Federal University, Institute of Mathematics  
Krasnoyarsk Institute for Trade and Economics; Russia  
vorob@akadem.ru, www.r-events.narod.ru

### Abstract

Eventology is a new area of philosophical and mathematical researches. Starting with the classical Kolmogorov's probability theory, we intend to develop an axiomatic basis for the formulation of eventological laws. These principles may be summarized in the following list: 1) *eventological space, space of outcomes of Being* is a space with possible states of Being as its elements; 2) *event* is a co-being of Mind; a unique way of existence for the reasonable subject; a subset of space of outcomes of Being, satisfying Kolmogorov's axiomatics; a co-being does not exist without a reasonable subject who is characterized by his own set of events; 3) *resolving co-being ability of Mind* is the limited ability of the reasonable subject to distinguish various outcomes of Being one from another; 4) *perspectivity of co-being in space-time* is an ability of the reasonable subject to perceive and realize co-being perspectively and retrospectively in space-time, allowing him to accumulate his own representation of probability and value of co-being; 5) *dual co-being* reflects two ways «to be with» for the reasonable subject; as eventological model *dual event* serves: *event-perception* ~ *event-activity*; 6) *probability of co-being* is a propensity of an event to happen for the reasonable subject; satisfying Kolmogorov's axiomatics probability measure; 7) *value of co-being* is a propensity of an event to have the importance for the reasonable subject; mathematically it is connected with the probability of an event by relations «value~probability».

As relations «value~probability» we consider two types: 1) «value~probability to perceive a co-being», the eventological analogue of Boltzmann's relation «entropy~probability»; 2) «value~probability to create a co-being» reflecting opposition of Mind and Matter that is the basic principle of eventology. Finally, we present *the eventological H-theorem*; an eventological generalization of Boltzmann's H-theorem; a mathematical substantiation of the eventological law uniting eventological analogue of the second law of thermodynamics: «increasing entropy in the closed thermodynamic non-alive system» with its eventological contrast: «decreasing entropy (increasing negentropy) in the open living system».

*Keywords:* eventology, probability, value of event, entropy, negentropy, co-being.

*Eventological principles* are the general and mathematical principles with which *eventology* (growing area of philosophical, mathematical, likelihood, statistical researches and practical activities) begins and which allocate *mathematical eventology* from classical Kolmogorov's probability theory; while have superfluous and preliminary character as the modern eventology is in many respects at a stage of becoming and development; are intended to form an axiomatic basis for the formulation of eventological laws.

### 1. The list of eventological principles

#### General principles:

- I. Eventological space.
- II. Event is a co-being of Mind.
  - 1) Co-being and Mind.

- 2) Eventological principle of uncertainty.
- 3) Perspectivity of co-being in space-time.
- 4) Duality of co-being.
- III. Probability of co-being.
- IV. Value of co-being.

**Mathematical principles:**

- V. Kolmogorov's axiomatics.
- VI. Eventological equivalence.
- VII. Eventological duplicity.
- VIII. Set co-being is an event-terrace.
- IX. Eventological «cross of perception and activity».
  - 1) Connection «value~probability» of perception of co-being.
  - 2) Connection «value~probability» of creations of co-being.
- X. Eventological H-theorem.

**2. The general eventological principles** essentially expand theoretical and applied opportunities of eventology, gives the general eventological point of view both on statement, and on the decision not only many known, but also a lot of new philosophical, mathematical, probabilistical, statistical and practical problems.

**I. Eventological space, space of outcomes of Being** [4] is a space which has possible states of Being as its elements; is considered set prior to the beginning of any eventological research; plays a role of uniform space of elementary outcomes for all eventological problems.

**II. Event is a co-being of Mind;** a unique way of existence for the reasonable subject; key concept of Eventology; a subset of space of outcomes of Being perceived and/or created by the reasonable subject, satisfying to Kolmogorov's axiomatics; that is inherent in probability and value, makes their concrete existence: without probability and value a co-being cannot exist; and also that has happened, happens or will happen in the certain point of space-time and, hence, could, can or can be the perceived and/or created by a reasonable subject; it is used in all without exception humanitarian, social, natural sciences and mathematics; one of the basic concepts of philosophy, physics and probability theory.

**II.1. Co-being and Mind:** *co-being* does not exist without a reasonable subject; Being without a reasonable subject exists, but *co-being* does not exist; the reasonable subject does not exist without *co-being*; without Being the reasonable subject exists, without *co-being* does not exist; *co-being* of the reasonable subject can be external, internal and mental; the reasonable subject is characterized *by his own set of events* [4] which happened with him during his own *co-being*.

**II.2. Eventological principle of uncertainty – boundedness of resolving eventfull ability of Mind** [4] is a boundedness of ability of the reasonable subject to distinguish various outcomes of Being one from another only when they belong to his various own fragments of splitting of the space of outcomes of Being (to his various own *events-terraces* [4]), which generated by his own set of events; it is bounded by his own *events-terraces* which the reasonable subject only can perceive and with which only can operate to distinguish one outcome of Being from another; the outcomes of Being getting in same event-terrace are perceived by the reasonable subject as identical; therefore the reasonable subject perceives each own event-terrace as own elementary *co-being*, a subset of identical for him outcomes of Being.

**II.3. Perspectivity of co-being in space-time** [4] is an ability of the reasonable subject to perceive and to create his *co-being* perspectively and retrospectively in space-time; the ability

to perceive and to create as an one-act coincidence of events which happened, happen and will happen in various points of space-time; the ability allowing the reasonable subject to accumulate his mention about probability and value of co-being.

**II.4. Duality of co-being** [4] is a basis of polarity of Mind and Being; establishes two interpenetrating beginnings of co-being: «to be perceived» and «to be created» by the reasonable subject; reflects two ways «to be with» for the reasonable subject: «to be with as a receiver» (perception) and «to be with as a source» (activity); as an eventological model of duality of co-being a *dual event* [4] (a pair of an event-perception and an event-activity) serves.

**III. Probability of co-being** [4] is a one of essential properties of co-being of the reasonable subject; propensity of a co-being to happen for the reasonable subject; that is inherent in co-being, makes its concrete existence: without probability a co-being cannot exist; characterizes a degree of an opportunity of Mind «to be with» – to perceive and/or to create a coming the given co-being as a result of the outcome of Being; reflects the basic relation between Mind and Being; underlies the eventological laws describing the nature of objective and subjective uncertainty; satisfying to Kolmogorov's axiomatics probability measure on algebra of events of the eventological space; axiomatically coincides with Kolmogorov's probability of event, but differs from it by a philosophical interpretation; it is connected with the value of co-being by two mathematical relations value~probability.

**IV. Value of co-being** [4] is a one of essential properties of co-being of the reasonable subject; propensity of a co-being to have the importance, to be important for the reasonable subject; that is inherent in co-being, makes its concrete existence: without a value the co-being cannot exist; characterizes a degree of value for Mind «to be with» – to perceive and/or to create the co-being as the outcome of Being; opens a value of the dual co-being in concepts of a value of perception and a value of creation of co-being by the reasonable subject; reflects two opposite basic relations of Mind and Being; underlies the eventological laws describing the nature of objective and subjective uncertainty; it is connected with Kolmogorov's probability by two mathematical relations value~probability.

**3. Mathematical eventological principles** allow mathematical eventology to be allocated as an independent direction of probability theory and at the same time emphasize, that the given direction does not fall outside the Kolmogorov's axiomatics.

**V. Kolmogorov's axiomatics** [2] is a theoretical basis of mathematical eventology: any eventological system can mathematically be described within the eventological space, the uniform for all eventological problems probability space formed by the space of outcomes of Being, by the algebra of its events and by Kolmogorov's probability defined on this algebra.

**VI. Equivalence of concepts of a set of events and an eventological distribution** [4].

**VII. The duplicity of concepts of a set of random events and a random set of events** [4]; consists that the same *eventological distribution* serves as a probability distribution of two different mathematical objects: *a set of random events* and *a random set of events*; thus an event-terrace is interpreted by a double way too.

**VIII. A set co-being is an event-terrace.** A set co-being (from the point of view of the reasonable subject) «happens as», «collapses in» a one of events-terraces, in a one of fragments of splitting of the space of outcomes of Being generated by the given set of events. The eventological relation «happens as», «collapses in» [6], connecting *a set of events* with a one of events-terraces generated by it, is equivalent to the relation «equals» which is defined between *a random set of events* and a one of its values, a subset of the coming events.

**IX. Eventological «cross of perception and activity»** is defined by two relations «value~probability», a one of which concerns to a *perception of co-being* and another concerns to a *creation of co-being by the reasonable subject*.

**IX.1. Connection «value~probability» of a perception of co-being** [4], eventological analogue of the Boltzmann's relation «entropy~probability» (one of bases of the statistical mechanics) [1].

**IX.2. Connection «value~probability» of a creations of co-being** [4], reflecting an opposition of Mind and Matter, makes the basic principle of eventology which are not having analogues in natural sciences.

**X. The eventological H-theorem** [5] is a mathematical statement eventologically generalizing the Boltzmann's H-theorem from the statistical mechanics; serves as a mathematical substantiation of the *eventological law of co-being*, uniting eventological analogue of the second law of thermodynamics: «increasing an entropy in the closed thermodynamic non-alive system» with its eventological contrast: «decreasing an entropy (increasing a *negentropy* [3]) in the open living system» not having physical analogues.

#### References

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