

## Preface

The main goal of this small book is to acquaint the reader with the theoretical and experimental results of the outstanding time researcher Nikolai Kozyrev. A careful and thoughtful study of his works leads the reader to the idea that Time is not only a method for measuring the speed of various processes in three-dimensional space, and not a fourth coordinate that has expanded our three-dimensional spatial world to four-dimensional space-time, but something comprehensive. We perceive time as a constant stream flowing from the “past” to the “future”. Quotation marks are placed here to emphasize the fundamental difference between these concepts and the present. It is at the moment of the present that we feel the fullness of our existence in the material world, while the “past” is a region of memories of past events, and the “future” is a region of assumptions about the nature of upcoming events. It turns out that only the moment of the present is real: it is at this moment that the future transforms into the past. It can be said that each person is a “time machine” that processes the space of the future into the space of the past. We perceive every moment of the present as reality, i.e. the complex of sensations corresponding to our stay at this moment in the material world, which we feel both directly with our material body and consciousness. The past and future are perceived by us only by consciousness, therefore these states of consciousness can be attributed to the non-material world. It turns out that man is a creature living simultaneously in two worlds - energy and material. In the waking state, a person mainly (with few exceptions) perceives only material influences, but remembers his past and plans for the future. In a state of sleep, a person does not feel his body, and his consciousness is immersed in the energy world. Dreams are precisely the responses of consciousness to the events of the energy world, which is a set of currents of time that form various material bodies and phenomena. A person always sees dreams, just does not always remember them: after all, awakening is associated with a change in the mode of consciousness from the state of a sleeping person to the state of awake. It is at the moment of transition to a state of sleep that for some people the connection with the events of the energy world is lost, for others it is restored in the form of a remembered dream.

So, we are immersed in the endless ocean of the energy world, manifested in the form of material bodies and phenomena. But which of the scientists is studying the depths of this ocean? Dreams specialists mainly claim that dreams are based on a person’s past memory — near or far. For specialists in relativistic (based on a four-dimensional space-time platform) physics, time is the fourth coordinate, which differs from three spatial ones in that the “duration” of an infinitesimal interval along the time line is imaginary, in contrast to a real purely spatial interval. From considerations of “evidence” based on personal experience, it is generally accepted that time flows in one (direct) direction — from the past to the future. Although the mathematical apparatus of general relativity does not prohibit the reverse passage of time (from the future to the past), such a possibility is not considered in modern science. In this case, scientists refer to the “arrow of time” Reichenbach, always directed from the past to the future. Meanwhile, Reichenbach, speaking of one-pointedness, had in mind the world development process (energy distribution). In his book “The Direction of Time” (Moscow, Foreign Literature, 1962, p. 35), he wrote: “Overtime has no direction, but only order, however it itself contains individual sections that have a direction, although these directions vary from site to site”. As a mathematical illustration of the “arrow of time” in modern science, a rectilinear light cone in Minkowski space is considered, the lower half of which is *the cone of the past*, the upper half is *the cone of the future*. Here time flows evenly, and the past automatically passes into the future through the point  $t = 0$ , which indicates *the present*. However, the real space of the present is permeated by gravity, which changes the tempo of the observed time: after all, all the structures in space rotate around their centers, which in turn are involved in an infinite carousel of rotations relative to the centers of different-scale structures, making contributions to the course of the observed time by their rotations (vortex states). meaning the present. Unfortunately, in the generally accepted cosmological models based on the Friedmann models, the time for the observer flows uniformly, gravity and rotation are absent, but the 3-space is deformed (expands or contracts). In fact, the basis of modern cosmology is a deformed three-dimensional space in which time flows uniformly everywhere. But along with cosmology there is relativistic astrophysics, the subject of study of which are stars, including those that have such strong gravitational fields that they can turn to collapse, i.e. turn into black holes. Similar objects are described by the well-known Schwarzschild metric, in which there exists a limit radius  $r_g = 2GM/c^2$ ,  $G$  is the gravitational constant,  $M$  is the mass of the star,  $c$  is the speed of light. Time in the Schwarzschild space-time flows unevenly: it slows down as it approaches the center of the gravitating object and stops for the external observer at a distance  $r = r_g$  from the center. It follows that the stars and other gravitating objects live according to different laws than the Universe: the time in it flows evenly, unlike the times of the objects that inhabit it — stars, galaxies,

quasars, ...

A strange picture is obtained: objects of different sizes in the Universe have gravitational fields, and the Universe itself simply expands either uniformly or accelerated depending on observational data. And it becomes completely incomprehensible how in the infinitely expanding non-gravitational space of the Universe there are gravitational fields constructed on the principle of nesting smaller bodies in large gravitational fields. Gravity fields work clearly like a good watch, which we can observe with the example of the solar system. This can only be explained by the fact that the gravitational fields of bodies of different sizes are embedded in each other like a “nesting doll”. The clarity of the work of gravitational forces in different gravitating systems indicates that there should be a “Main nesting doll” — the gravitational field of the Universe, which controls the entire system of gravitating bodies arranged according to the fractal principle. And since gravity works clearly, we can conclude that the signals from the “Main nesting doll” propagate instantly: otherwise the whole system of gravitating bodies would crumble like a “house of cards”. But it is the very adoption of the possibility of long-range action — the instantaneous distribution of energy (information) - that is a stumbling block in modern physics.

The scientific justification for the rejection of the idea of long-range action is the assertion that in the material world particles and fields cannot propagate at a speed exceeding the light speed. But why should one confine oneself only to material interactions? Can anyone say with absolute certainty that in the World “... there is nothing but a moving mother?” (Friedrich Engels). If it is possible to experimentally establish the fact of the instantaneous transfer of energy (information), this will be a significant contribution to the theoretical justification for the existence of long-range action. It was Kozyrev who made a convincing demonstration of the fact of the observer’s instant connection with other stars, their clusters, and even with another galaxy. The results of his observations of stars can be considered as a manifestation of the energy (intangible) world in the material world. But these observations did not appear from scratch: Kozyrev simply confirmed with their help his concept of Time as a comprehensive non-material substance that creates the material world with all its manifestations.