

QUANTUM WAVE OF LIFE EVOLUTION

Written by Dr Kiril Chukanov, June 2009, Calgary, Canada
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The living Observer (the whole of animate substance in the universe – which exists only on earth, see *GQM-I, II, III, IV*) “calibrates” nature with the help of his own standards. The evolution of the living Observer goes through qualitatively different quantum life periods. Their time period is governed by natural symmetries. The transition from one period to another or from one quanta time to the next one following it in the chain of times is accompanied by the increasing complexity of the Observer’s features which undergo qualitative changes. New kinds of plants and animal species make their appearance.

The organization of the universe of animate substance (Life) is governed mainly by the basic proportionality coefficient $K_{2,e,p} = 12.37$ and its derivatives:

$$T_i = \sqrt{\frac{R_i}{a_{0,p}}}; \quad \bar{T}_{19} = T_{obs} = 4.39 \text{ billion yrs.}!$$

$$\frac{R_i}{R_{i-1}} = K_{1,e,p}; \quad K_{1,e,p} = \sqrt[19]{A_{e,p}}; \quad A_{e,p} = \frac{e^2}{G \times m_e \times M_p};$$

$$K_{1,e,p} = 153; \quad A_{e,p} = 2.27 \times 10^{39};$$

$$\frac{T_i}{T_{i-1}} = \sqrt{\frac{R_i}{R_{i-1}}} = \sqrt{K_{1,e,p}} = K_{2,e,p} = 12.37!$$

$$K_{3,e,p} = \sqrt{K_{1,e,p}} = 3.92!; \quad K_{4,e,p} = \sqrt{3.92} = 1.875!$$

The quantum transformation of times in the chain of life evolution is also governed by the same proportionality coefficients. In order to build the life evolution chain besides the quantum proportionality coefficients, we have to know some reference points in this chain. Such reference points are some very important moments in the life evolution: some milestone events. The milestone events are located in the main quantum knots (maximums on the diagram of the *Quantum Wave of Life Evolution*). On the diagram of life evolution “*I*” means the intensity of manifestation of the main properties of the corresponding quantum animate object (number of sub-quantum species, amount of individual taxometric units, stability, activity,...etc). The first derivate $I = dI/dT$ is manifestation of the speed of the evolution of life. “*T*” is the time elapsed of evolution. The catastrophe moments (minimums on the curve “*I*” are located somewhere between two neighbor maximums (the moments of flowering). The values of these minimums (catastrophes) cannot be calculated precisely because they are not quantum knots on the diagram of life evolution. Their values are blurred; the minimums could be, with different probability, located at any point on the curve of evolution between two neighbor maximums. Formally they can be determined (with highest probability) as a medium between two maximums (however this estimation can be wrong in many cases).

Time started some 4.39 billion years ago. After the beginning of the Cycle of the Universe the earth was inhabited by primitive unicellular organisms (See Figure 1). Traces of prokaryote bacteria and blue-green seaweed were found in Greenland dating from 3.85 billion years ago, in Australia dating from 3.66 billion years ago, in South Africa, and other places on earth. About 2.1 billion years ago - the First Great Catastrophe – the first major mass extinction occurred. A considerable part of the prokaryotes and unicellular blue-green seaweed were replaced by the eukaryotes. These are the modern living cells; almost all living organisms of today are built of the eukaryote cells with exception of some bacteria and blue-green seaweed (relicts from the *Undetermined Beginning* of the world. The eukaryotes have chromosomes situated in a well-shaped nucleus, mitochondria, and chloroplasts. They contain membrane-bound organelles (fringe, for example) facilitating their motion. Eukaryotes have higher chances for quick evolution. The greatest quantities of these fossils were found in the layers of rock 1.25 billion years ago (the First Flowering – maximum on the diagram). About this time sexual reproduction evolves, increasing the rate of evolution; simple multi-cellular organisms evolve, mostly consisting of cells colonies of limited complexity.

Ist Period of Life: "Aquatic Cellular Organisms"

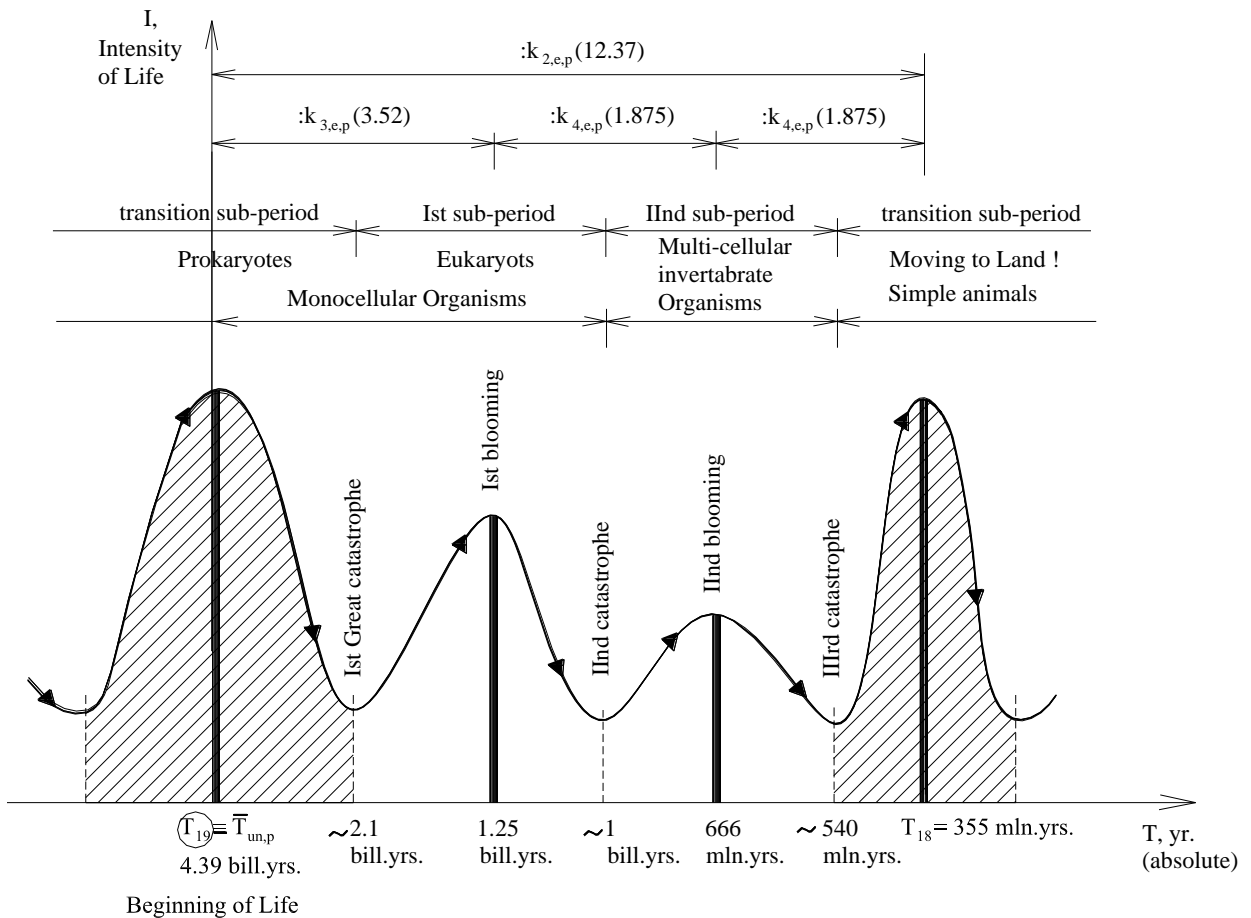


Fig. 1

A global glaciation (at the time of the Second Catastrophe - 0,85-0,95 billion years ago) reduced considerably diversity of life. Here unicellular organisms were replaced by multi-cellular invertebrate organisms. Multi-cellular invertebrate organisms are more progressive: the round worm (Spriggina), different kinds of jelly-fish, some kinds of corals, pseudo mollusks, etc. The second flowering (the maximum on the diagram) of the Ist Period of Life occurred about 700 million years ago. Paleontological investigations show that at periods of several millions of years, a great variety of animals and seaweeds exploded in the world's oceans; seaweeds, arthropods, brachiopods, fungi, corals, sea anemones, worms, starfish, trilobites, etc. From the point of view of modern science, it is very difficult to offer an explanation about this explosion of life. Some scientists believe that the explosion of life 700 million years ago is only

ostensible and that there had been a great variety of invertebrate species during Pre-Cambrian but that they left no traces. Later, they say, the chemical conditions in the Cambrian seas were much more favorable for the formation of solid skeletons and shells, which were consequently much better preserved. Geologists say that the increased oxygen content in the air (a result of the photosynthesis of the first animate organisms) led to the appearance of many new species.

The Third Catastrophe (around 540 million years ago) is connected with next Ice age. The true reasons, however, lie in the realization of the world global symmetries throughout quantum life evolution. Though with reduced number of species and specimen, representatives of the First Period of Life will persist until the end of the present cycle of the universe. Some of the “relict” species undergo some limited evolution, but they preserve their specificity. They are “atoms” of the First Period of Life!

The Third Catastrophe is the beginning of the **Phanerozoic Eon** – literally the “period of well-displayed life”. It marks the appearance in the fossil record of abundant, shell-forming and/or trace-making organisms. It is subdivided into three eras, the Paleozoic, Mesozoic and Cenozoic, which are divided by major mass extinctions.

The first known footprints on land date to 530 million years ago, indicating that early animal explorations may have predated the development of terrestrial plants.

The beginning of the Transition Period (after the Third Catastrophe) is indeed worth noticing. Plants and animals moved to land in large numbers. The first primitive plants move onto land, having evolved from green algae living along edges of lakes. They are accompanied by fungi, which may have aided the colonization of land through symbiosis. The first amphibians appeared: *Ichtyostegea*, almost a meter long; some kinds of fish could breathe on dry land; the first insects and spiders appeared. The tropical climate produced vast woods dominated by scaly trees, tree ferns, and first conifers, the land fauna was enriched by many new species, while aquatic fauna lost its dominant role in terms of species number.

At the time of the First flowering of the Second Period of Life (about 360 million years ago) the earth begins to be recognizable. See Figure 2. Insects roamed the land and would soon take to the skies; sharks swam the oceans as top predators, and vegetation covered the land, with seed-bearing plants and forests soon to flourish. Four-limbed tetrapods gradually gain adaptations which will help them occupy a terrestrial life-habit.

IInd Period of Life: "Primitive Land animals and plants"

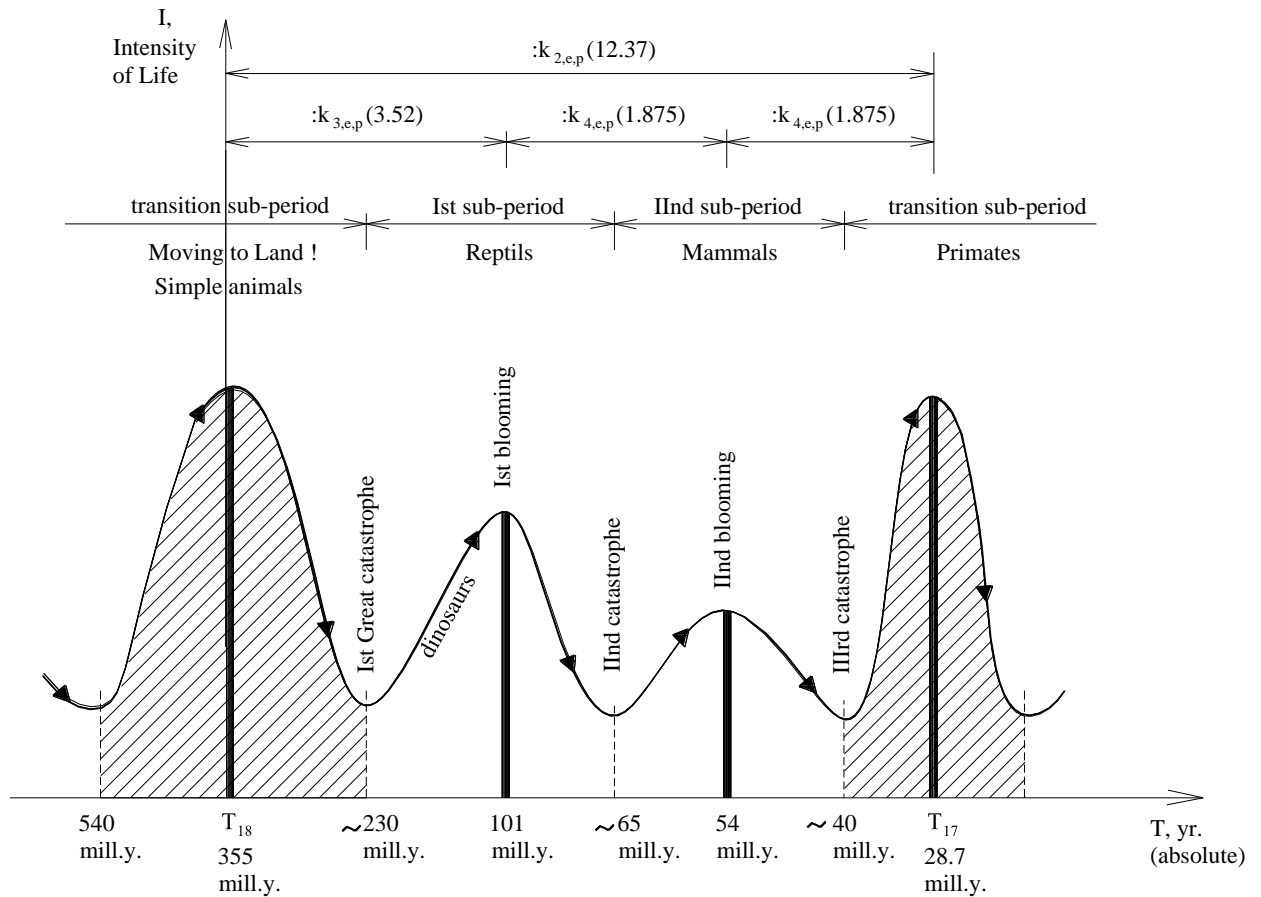


Fig. 2

The zone of the maximum (few hundreds millions of years: before and after the moment of the maximum) was zone of flourishing, stability, diversity. Then a brisk downfall occurred. About 230-250 million years ago occurred the First Catastrophe of the Second Period of Life.

The so-called "Permian-Triassic" mass-extinction eliminated over 95 % of species. Gone were the trilobites, the corals, with developed nerve, digestive, and muscular systems (bryozairs), and the brachiopods. Only two hundreds species out of approximately 30,000 survived. This "cleaning of the slate" may have led to an ensuing diversification.

Around the First Catastrophe the first reptiles appeared. Traces were found - at the beginning of the first sub-period (230-65 million years) - of *labyrinthodons* (animals with fang-like teeth) and *dimetrodons*,

characterized by a spinal ridge in the form of a fan. That was the age of the *techodons* (small reptiles) which moved with the help of their back limbs.

What explanations do scientists offer about the reasons for the First Catastrophe of the Second Period of Life? Explanations include the fall of meteors that poisoned the air, water, land; intensive bombardment by cosmic rays that were selectively fatal resulting from a supernova near our solar system; reduction of the mean temperature after intense volcanic activity; progressive disruption in the food chain as one sensitive species disappeared, to be followed by the geometrically progressive extinction of species that were dependent on it; etc. The most probable hypothesis of the mass extinction is considered the hypothesis offered by Fred Wagner – the *Pangaea Theory*. According to F. Wagner, 230 million years ago as a result of movement among the tectonic platforms around the planet, the land masses drifted together, creating a single giant continent *Pangaea* (Greek for all + earth). The most favorable environment for aquatic species like corals, amphibians and fish is the shallow coastal zones. As a result of *Pangaea*'s formation, the amount of this environment was severely reduced, causing the outright extinction of numerous species with the subsequent elimination of species dependent on them. Climatic changes developed as a result of quartering the planet into a single huge land mass and an equally huge ocean; they became severe, interrupting many food chains. Many paleontologists accept the *Pangaea Theory* but have mistaken cause for effect. The ultimate cause for the global mass extinction of life was the realization of world symmetries, no matter what the mechanism of nature happened to be. Another natural mechanism of the Great Effacement of Life could be the Great Ice Age during the early Permian period which began 275 million years ago.

The first sub-period (230-65 million years) is characterized by the reign of the biggest animals in the history of the earth – the dinosaurs. Their earliest representatives are found in the layers dating back as far as 203 million years ago. One of them, the *diploodont*, inhabited what is now America, during the *Cretaceous Period* and was twenty-five meters long. Some of dinosaurs were like tanks. *Ankylosaurs*, for example, were covered by an impenetrable armor, protecting them from the fangs and horns of their enemies. The dinosaurs-predators were real giant too: the *tyrannosaurs* (15 meters long); the *Ichthyosaurs* (about 10 meters long); the *Erchyosaurs* (about 6 meters), etc. The flying lizards also appeared at that period. The largest were the *Pteranodons*, whose wingspread was 8 meters.

The dinosaurs flourished 100 million years ago (at the maximum of the diagram of Life Evolution); the majority of fossilized skeletons and

species date back from this time. In compliance with the world symmetries the dinosaurs disappeared from the face of earth about 65 million years ago (at the moment of second catastrophe). This catastrophe (known as *Cretaceous-Tertiary Extinction*) eradicated half of animal species except the ancestors of modern birds. Within several million years, all dinosaurs, flying lizards, gigantic aquatic reptiles, and one-fourth of sea invertebrates, which had survived the first catastrophe, disappeared.

The hypotheses concerning this catastrophe are even more numerous and exotic. The mysterious gigantic catastrophe stirs the imagination of scientists to such a degree that even those who have nothing to do with paleontology feel obliged to present their ideas about these scientific issues. Among those hypotheses the best accepted is the hypothesis of American physicist Luis Alvarez and his son Walter Alvarez. They suggest that the fall of an enormous asteroid containing a high percentage of iridium caused formation of dust shield around the earth that prevented the sunlight to reach the plants. As a result the photosynthesis of plants was disrupted and animals lost significant part of their food. The dinosaurs, they hypothesize, were especially sensitive.

Toward the end of their reign, the dinosaurs handed the torch of evolution to the more progressive animals – the mammals. The manifestation of property intensity “*I*” of reptiles (number of species and number of individual) was growing smaller with the approach of the End of the World but it would never become zero. They became fewer in number and degenerate, losing their significance, but they continued to exist. Today, even though rather miserable in comparison to their predecessors, their representatives are the crocodiles and lizards. There might also be some small populations of dinosaurs today in a changed or degenerated form. Are not the legends of the dragons in Congo rain forests and the Loch Ness monster some authentic stories handed down from people who saw the last dinosaurs on the earth? Moreover, it is known that in some isolated tropical regions, representatives of fern trees are still found; they are contemporaries of the dinosaurs, sharing their destiny.

The dinosaurs left the earth to be inhabited by mammals. At the beginning these were small mammals: insect-eaters, rodents, saccade animals. Later the mammals developed into two main groups: the forerunners of the ungulates, or hoofed herbivores (*candylathres*) and the forerunners of the predators (*creodonts*). The mammals began their period of flourishing 54 million years ago; hundreds of species have come into and passed out of being. Among the extinct are many different species of

rodents, insect-eaters, ungulate mammals, and proboscis mammals. In the floral world, gymnosperms gave space to the angiospermous plants.

The transition period (approx 40 – 15 million years) was the period of primates. They handed the torch in the Observer's evolution. The long-soled primates are small predatory mammals, living in the trees. About 12-15 million years ago the earth climate became even more severe (much colder). This time coincides quit normally with the first catastrophe of the Third Period of Life which swept away more than 75% of the species of mammals. The discussions about this catastrophe are still going on in the scientific circles. The climate is once again presented as the greatest perpetrator of the catastrophe. Others say that the humanoids set out on mass destruction of the big mammals. Yet the true reason is quite different.

IIIrd Period of Life: "Humanoids"

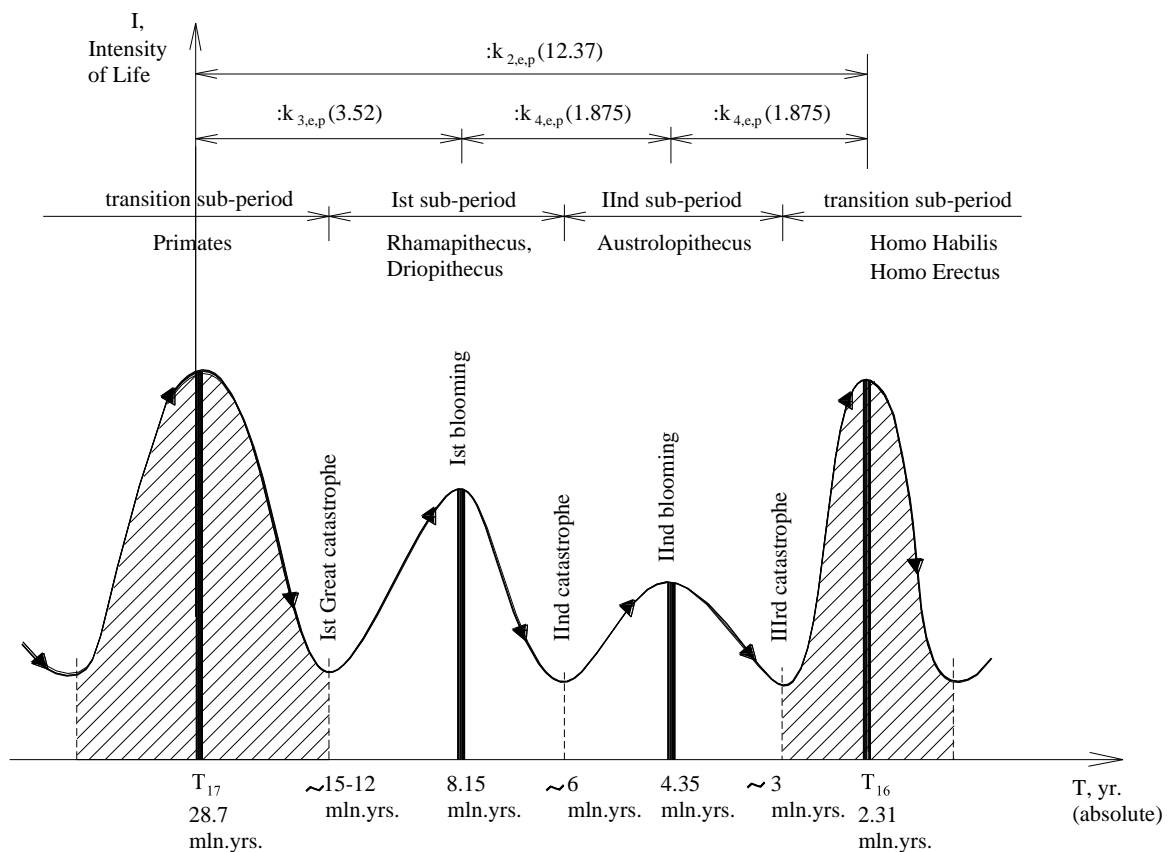


Fig. 3

The quick disappearance of forests made the greatest part of the *driopithecus* climb down in order to survive. They underwent an evolution on the land and became humanoids (as believed by scientists). The main representatives of the humanoids at the beginning of the first sub-period (15-12 million years – to about 6 million years) were the *Rhamapithecus*. Their traces date back as far as 14 million years ago. It is assumed that they walked erectly and used primitive tools. A later form of Humanoids is the *Australopithecus* (second sub-period); its oldest traces were found in Kenya, dating back as far as 7 million years ago. The *Australopithecus* walked upright and the measurement of the skull ($V = 576 \text{ cm}^3$) was bigger than that of the gorilla ($V = 497 \text{ cm}^3$), which had the biggest skull measurement among apes. They made use of primitive tools and fire. See Figure 3.

Rhamapithecus disappeared at the time of the third catastrophe (about 3 million years ago) in the stomachs (as believed) of *Homo Habillis* who appeared during that time. There was a great difference between the *Australopithecus* and *Homo Habillis* mostly because, for the first time in the history of human life, an animate being made its own tools. This is a characteristic of a conscious human being. The skull measurement of *Homo Habillis* is 800 cm^3 . *Homo Erectus* appeared in the second half of the transition period: about 1.7 million years ago. *Homo Habillis* already had many human features. Both *Homo Habillis* and *Homo Erectus* shared the destiny of their predecessor; at the time of the first (great) catastrophe of the Fourth Life Period they disappeared in the stomach of a new hunter – the *Pithecanthropus*. The *Sinanthropus* appeared a bit later – in the second sub-period. The most numerous traces of *Pithecanthropus* are found in sedimentary layers 650 thousand years old, the flowering of its evolution. An important phenomenon was the appearance of spoken language – a powerful tool on the road of progress. The *Pithecanthropus* and *Sinanthropus* started exchanging information with those of their kind using sound signals. The *Archanthropuses* disappeared somewhat suddenly at the time of the third catastrophe (about 260 thousand years ago). It seems that their successor in the evolution process brought about their total destruction. There were found traces indicating that the *Archanthropuses* were cannibals. See Figure 4.

The oldest traces of *Neanderthals* have been found in France near town of Nice. There, 280 thousand years ago, they build their homes. Their skull is much bigger in measurement ($V = 1200\text{-}1600 \text{ cm}^3$). There is one problem related to the *Neanderthals* which is still unsolved. If the skulls of the early *Neanderthals* (170 thousand years ago – their flowering) are examined carefully, one would see with amazement that they are closer to

ours and less to that of the late *Neanderthals* (60-70 thousand years ago). The brain of the late *Neanderthals* had undeveloped bill-like front parts, a sigh of degeneration. They were gradually losing their social features; their communities grew unstable. The *Neanderthal* was “doomed” to leave the stage of life at the time-span of the first great catastrophe of the Fifth Life Period. The executor of the verdict could have been the next one in the evolution – the *Cro-Magnon Man*, as it had happened with *Neanderthal’s* predecessors. The *Cro-Magnon Man*, however, was a reasonable man (*Homo Sapiens*) and he could not have allowed himself to eat his direct predecessors, the *Neanderthals*). Nature resorted to another execution, the degeneration and self-destruction of the late *Neanderthal*. Alas, the same could happen with us – the last human generations on earth!

IVth Period of Life: "Archantropus"

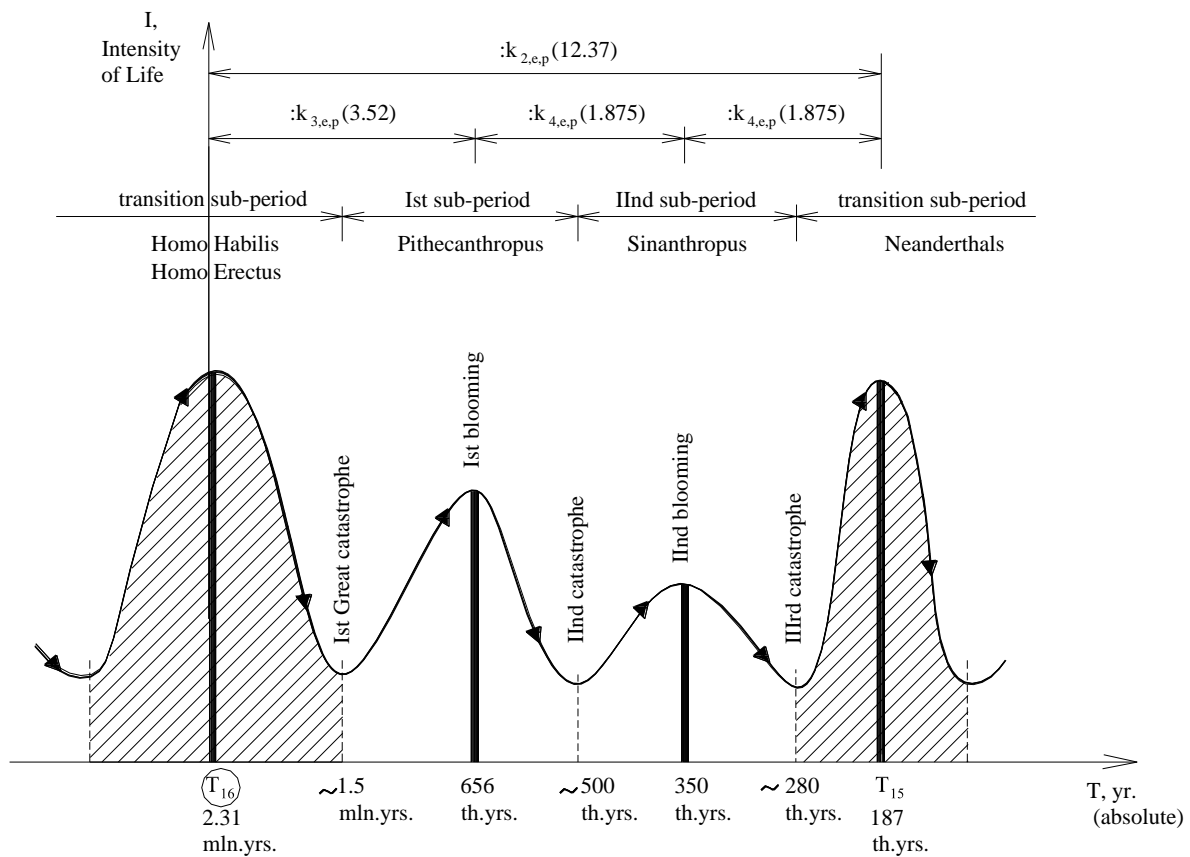


Fig. 4

The appearance of *Homo Sapiens* occurred sometimes in the first great catastrophe of the Fifth Life Period. Its representative was the *Cro-Magnon Man* (also called the *Shancellad* or *Grimaldy Man*) who is predecessor of all human races nowadays. This is the period in which the biological evolution was replaced by the social evolution. See Figure 5. The *Pre-Historical Man* is the transition link to the *Historical (Civilized) Man*. The first religious beliefs date from this transition period, supported by the fact that 20 thousand years ago man started to bury his dead relatives. The first forms of art were born. In 1908 archaeologists discovered in Chernigovska region (Russia) the remains of a stone-age village, the bones of a mammoth, and other bones, later discovered to be fragments of musical instruments. The first cave drawings also date from that transition period. The *Cro-Magnon Man*, unlike his predecessors, disappeared in a social way and not in biological way. He gave away his position in the evolution of life to the *Pre-Historical Man* 20 thousand years ago – at the time of the third catastrophe. The time of his flowering happened in the quantum knot (maximum) on the diagram of life evolution – about 14 thousand years ago. The first traces of farming and animal breeding were found in the layers 12 thousand years old.

From what I have stated so far, it becomes clear that evolution of life is not governed by the forces for blind chance – Darwin's natural selection, for example. The evolution of animate nature is governed by a strictly determined program reflecting world harmony. It is absolutely wrong to believe that external factors such as changes in environment determine the direction of evolution. The coincidence between the climate on earth, the structural changes on the earth surface (formation and separation of the continents, volcanic and tectonic activities), the sun's activity, and quantum knots (moments) on the diagram of the Wave of Life Evolution stress only one thing: the evolution of the animate matter (being) and changes in the environment which it inhabits are governed by one and the same program, reflecting the world symmetries.

What appears to be the true creator of social animate life is not the blind chaos of natural selection but the Observer's purposeful evolution, the gradual quantum concentration of its Soul-Energizer. The time in the course of which the Observer exists and develops itself is not simply a chain of consecutive stages independent from one another, but a dialectical unity of different quantum life periods which are images of the unique period – that of the Observer. Any given quantum time (from 10^{-23} s to $\bar{T}_{un,p} = 4.39$ billion years) contains any other quantum time; in that way, it determines the later and is determined by it. In a closed world as this one, where past, present,

and future events are in mutual correlation, there is not an initiating cause for the creation and existence of the world which would in the long run turn out to be its destruction. It is a self-determining world; it has no need of proto-substance. Past objective in the future, future objective in the past – is this not an infinite swirl of life, one infinite repetition of the evolution of animate substance? Here comes to light one of the Primary Substance's principle features: the infinite and transient dialectical unity. A model such as this one is found in the Hindu religious where the existence of the world is interpreted as one constant repetition of the same cycles. Brahma destroys and recreates the world every 8.5 billion years.

The Sixth Period of Life is the period of *Historical (Civilized) Man*. See Figure 5. The *Civilized Man* is the “elementary particle” of Social Human Life. The time-interval which the Human Civilization has at its disposal is a very short one – some 6-8 thousand years. The hypothesis that our civilization is in its early childhood and that we have million – billion years of development and spreading across the universe are vain hopes and fantasies.

Before trying to pin down the milestones on the curve of Evolution of Human Civilization, there are questions which demand an answer. What is human civilization? How it differs from other periods of life? What is the essence of Human Civilization?

Archeological excavations have discovered considerable progress at the end of the *Paleolithic Period*, when *Homo Sapiens* began his reign. The *Mesolithic* age witnessed the appearance of cattle breeding and farming; the *Neolithic* is the age of the first devices of polished stone, weaving and pottery. Yet even the most developed *Neolithic* communities inhabiting North Africa, the Near East, and the Middle East did not reach the level of one civilization. In the period circa VIIth – VIth millennium B.C., some relatively rich settlements, frequently surrounded by thick walls which indicated that they had something precious to protect, sprung up in Asia Minor, Syria, and Palestine. Yet these settlements were rare exceptions while some of the oldest cultures (Hierhenon in Palestine and Chatal Huuk in Asia Minor) did not develop as civilizations. Therefore the beginning of Human Civilization should have occurred later. Anyway, these first walled settlements can be considered as the oldest outposts of the Human Civilization.

Vth Period of Life: "Homo Sapiens"

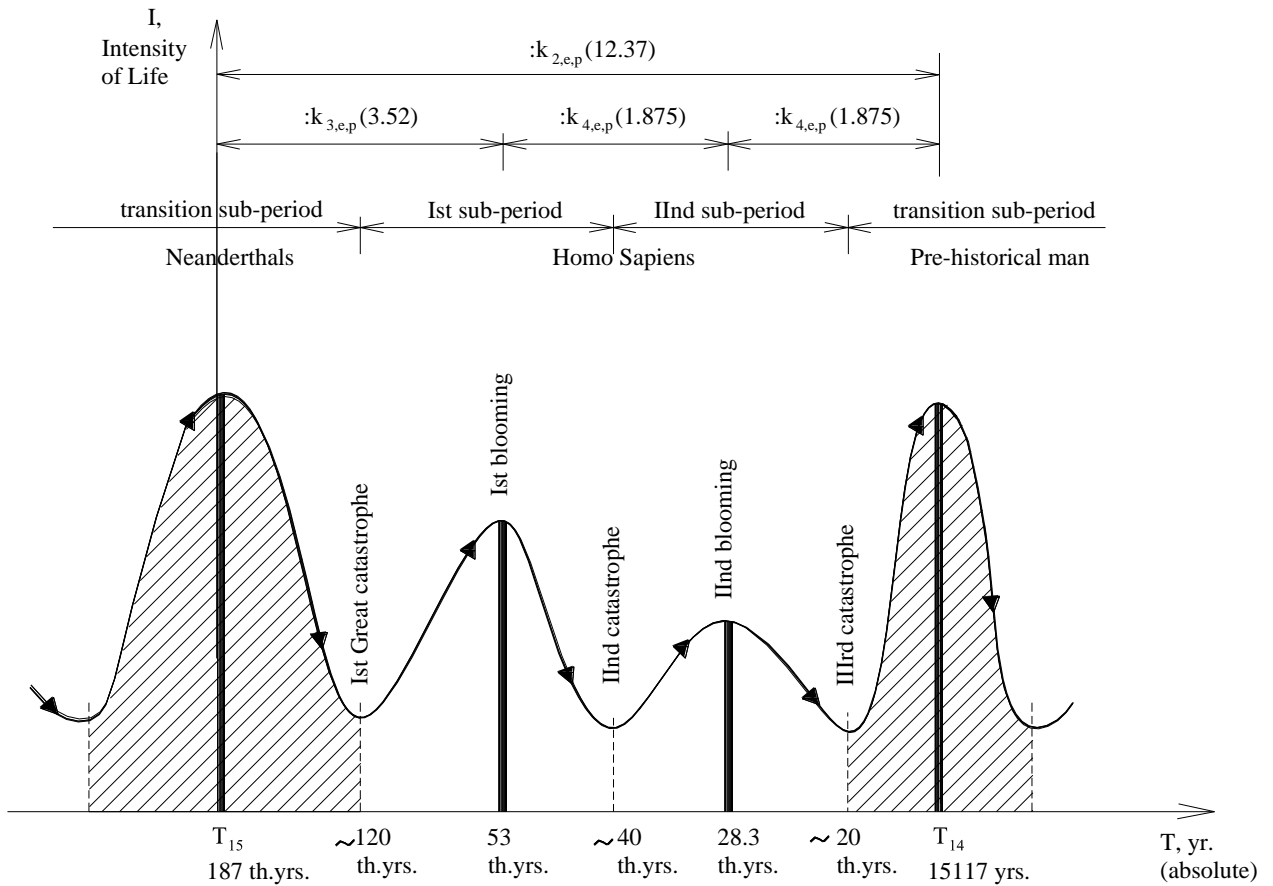


Fig. 5

It is natural to assume that the beginning of Human Civilization was related to some kind of qualitative jump (revolution) in the field of labor and culture. Most likely the moment of the reclamation of the fertile land along the three great rivers in Africa and Asia (Nile, Euphrates, and the Indus) by cattle breeders and tillers was the beginning of Human Civilization. This qualitative jump is also linked with the construction of an irrigation system which led to a rapid increase in labor productivity. Indeed, productivity and corresponding economic relations are at the very basis of the qualitative differences between the different periods of Human Civilization. These relations are social, a qualitatively new form of Primary Substance – Common Social Consciousness (*Soul Energizer*, see GQM-III, Chapter I) of the Human Kind. All six elements of the *Common Human Social Consciousness* (political, juridical, moral, esthetical, religion, and

science) are subjected to the economic relations of production and consumption.

The first traces of an irrigation system found date back as far as the end of the Fifth millennium B.C. This time coincides with the time-interval of the first great catastrophe of Sixth Period of Life. The increased labor productivity led to a decrease of the number of people involved in the production of food and the appearance of craftsmen: weavers, potters, shoemakers, ship-builders, etc. Society was differentiating, and the class of exploiters appeared. The qualitative changes in the manner of production affected the spiritual life of people. The religious temples became the center of spiritual life. These were rich economies and their management and trade required a writing system. Cuneiform writing appeared circa 3500 B.C. in Sumeria (Mesopotamia).

Still scientists are not clear as to which is the first compact civilization in the world: was it the Egyptian civilization or the Mesopotamian? The priority, however, is usually given to the one that inhabited the lands along Nile. Archeological excavations show that the natives led sedate lives already in the VI th millennium B.C. They raised cattle and farmed but were still afraid of subjecting the great river to their needs. It seems that at the beginning of the IV th millennium B.C., the population of Egypt constructed the first irrigation systems and received a tenfold increase in their crops. See Figure 6. Towards the middle of the IV th millennium B.C., the merging of the two states, the Upper and Lower Egypt, took place.

Proceeding from the information offered above, one could draw the following conclusion: the beginning of Human Civilization (Ancient Civilization) occurred circa 4000 B.C. ($dI/dT = 0$).

Each socioeconomic human formation is born within the range of the one preceding it, and then within its own boundaries it flourishes and fulfills its historical mission; after accomplishing its mission it becomes of no importance for the following historical evolution but continues to exist at a reduced intensity to the end of the world cycle.

The socioeconomic order (system) of *Pre-Civilization* existed within the boundaries of the transition period (20 th – 8 th millennium B.C.). The appearance of this socioeconomic order was connected with the appearance of articulate speech, which united people and transformed the human tribe into human society.

The evolution of each socioeconomic order is governed by the *Law of Trimodular Transformation of Intensity of Properties*. That means that

every Life Period is divided in three quantum sub-periods, one of them is sub-period of transition to the next Life Period.

Vith Period of Life: "Ancient Civilizations"

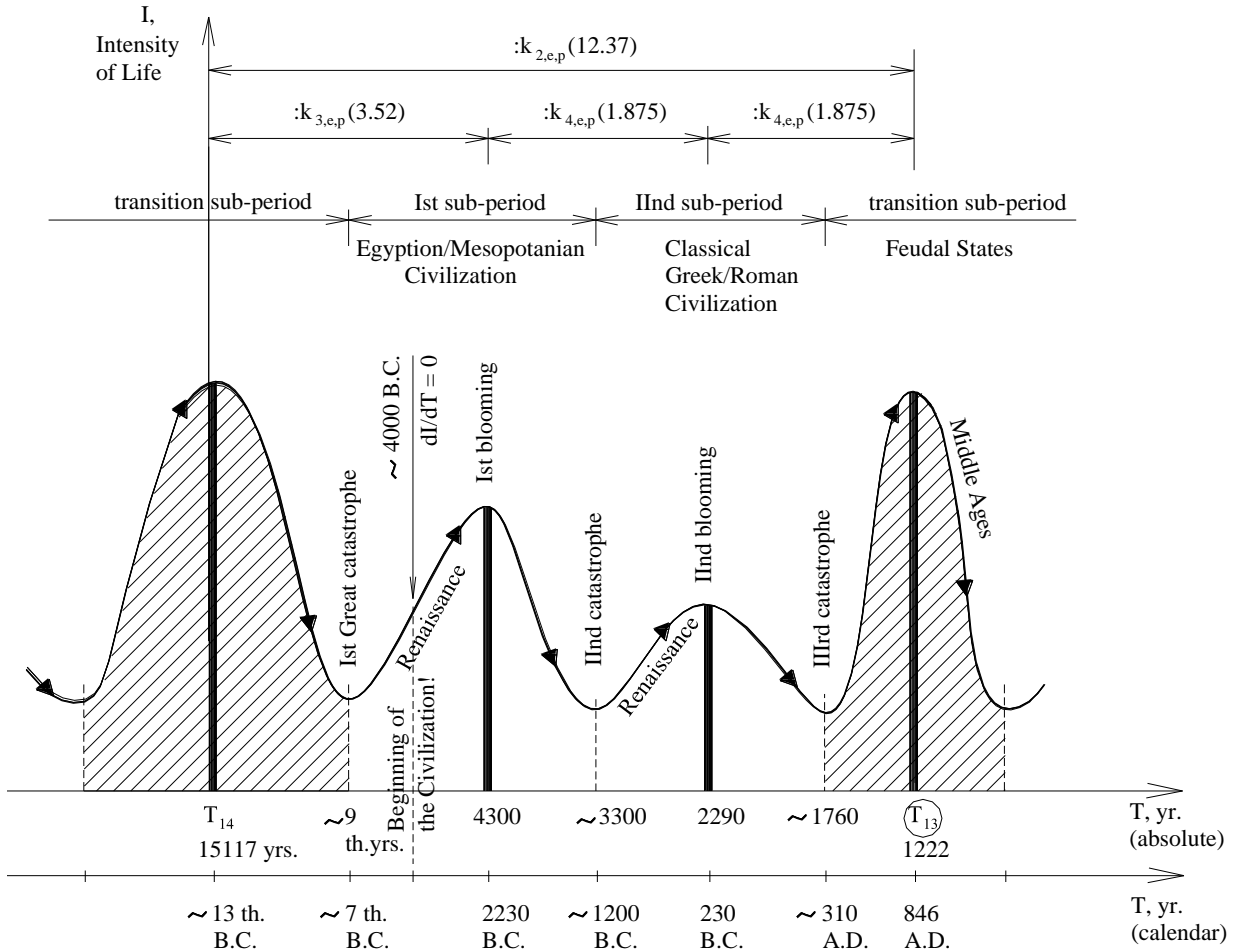


Fig. 6

The main features, determining the momentary state of evolution of the Class "Civilized Human Being", are manifested in the collective ethics, and morals of historical classes and historical social orders (systems), including their culture, art, religion, tools and methods of harnessing of the environment, for practical use, weapons, energy sources, etc. We call all this stuff of features "intensity of life - **I**". Individual human beings are only executors of the world symmetries. Even though free in their personal acts, in general they are obliged to satisfy the requirements of the world symmetries (the quantum wave of life evolution, for example): the common

and necessary are realized through the specific and arbitrary. The “technical means” used by the Unique Observer are the passions, needs, wishes, and personal interests of the individuals. Every social class or social order has its periods of progress and flowering when its concepts fit the momentary state of evolution of the Observer. These are the happiest and more efficient moments in history – periods of relative stability and victories. But the Observer develops and improves his features and performances in *Time* while concepts of the social classes and social orders are no longer in resonance with the current concept of the Observer (on the quantum wave of life evolution). The social class/order loses its stimulus for active life; it has reached its highest objectives, and its interest in life is abolished. A social class/social order such as this vegetates for some time, gradually degenerates and enters into conflict with the next (in the evolution) social class/order that has already become an embodiment of the Observer’s progressive concept; then the former social class/order is destroyed and replaced by the latter social class/order. The decline of a social class/social order is demonstrated in its inability to actively control the politics and economy, corruption reaches enormous proportions, and its culture and morals are no longer positive.

During the transition sub-period (from 20 thousand to 9 thousand years ago) the *Pre-Civilized Man* was still a gatherer of natural food (plants and seeds) and a hunter. Around the time of the first great catastrophe of the Fifth Life Period (9 thousands years ago) appeared farming and cattle breeding.

The first sub-period of the Fifth Life Period (9 -3.3 thousand years ago) is the time when first walled towns began to appear in Mesopotamia. They were constructed with a temple in their center. The existence of farming and the domestication of cattle, the discovery of iron and copper around 6000 B.C., and artificial irrigation provided the facilities for the production of an extra provisions and it, in turn, led to the appearance of the first “ancient civilizations”: Egyptian and Mesopotamian. At the maximum of the first sub-period (approx 4000 B.C.) writing system (hieroglyphics) and paper (3860 B.C.) were invented. The great pyramids in Giza were built (3000 B.C. – 2500 B.C.). Sumerians, and later Egyptians, started to develop mathematics, astronomy, economics, medicine, law, and politics.

The first sub-period (7000 B.C. – to about 1100 B.C.) was the era of the first slave-holding states, the boundaries of which were established on the basis of economy-political needs of the region (Egypt, Lower Mesopotamia, The Hetite state, Mycenae, Middle Assyria, Aheyan state, etc.). This sub-period finished at the time of the second catastrophe when

many old civilizations such as the Old Kingdom in Egypt, the first Minoan, and first Indian civilizations disappeared. Whole nations disappeared totally from the face of the earth.

After the first flourishing of science, there was a long period of intellectual hibernation.

The second sub-period is mainly connected with ancient Greek city-states (Athens, Sparta, etc.) which flourished around the third century B.C. ; Roman empire; the Carthaginian North-African empire (8th – 2nd century B.C.), Assyria, Persia (which flourished under Cyrus the Great, 590-529 B.C., and Darius, 521 -486 B.C.), China under the Chou dynasty, and India. The flowering of the second sub-period is mostly marked by the rise to power of Alexander the Great (333 B.C.) who created the largest known empire in human civilization to that point.

The long period of hibernation (in science) was followed by scientific awakening in Greece after the second catastrophe (approx 1100 B.C.). The climb up on the curve of Life Evolution is accompanied by increasing of the Intensity of features or increasing of the progress in the evolution of the dominating (in this period) class “alive being”. The first great scientists of this *Renaissance* were Thales and Anaximander of Miletus (a Ionian town), 600-550 B.C. Ancient Greece produced many great scientists as Pythagoras (mathematics, 582-507 B.C.), Anaxagoras (experimentalist and astronomer, 500-428 B.C.), Empedocles (philosopher, 495-435 B.C.), Hippocrates (physician, 460-377 B.C.), Democritus (philosopher, 460-370 B.C.), Diogenes (philosopher, 412-323 B.C.), Plato (philosopher, 427-347 B.C.), Aristotle (philosopher, 384-322 B.C.), Euclid (mathematician, 300 B.C.), Archimedes (inventor, 287-212 B.C.), and many others. The decline of Greek science started after second flowering of the period, around 260 B.C., which is indicated by relatively absence of important scientists after this time.

During the climb up on the diagram (curve) of the civilized human evolution science became a universal phenomena – it flourished on different continents (having no exchange of information between them).

Unlike the traditional slave-holding states, the Macedonian (under Alexander the Great) empire consisted of territories of different economies, geographies, cultures, and ethnic populations. In the second half of this sub-period raised the Roman Empire which perished at the time of its flowering in the 5th century A.D. In 395 A.D. the Roman Empire was divided into Western and Eastern empires (at the third catastrophe of Sixth Life Period). The eastern empire (Byzantium) was at its height during the reign of Emperor Justinian (550 A.D.).

The transition sub-period (400 A.D. – 1300 A.D. approx) witnessed the disappearance of the classic civilizations and creation of the first feudal states of closed type. Every feudal state in Europe was governed by king; all the land was property of the king and the noblemen. After Charlemagne's death (814 A.D.) the Frankish empire disintegrated and was replaced by feudal states. The dynasty of Capetings governed France during 987-1328 A.D. That transition sub-period was associated also with the Muslim conquests which facilitated the establishment of feudal rule. West European feudal states began holy wars (crusades) against Islam (11th – 13th century A.D.). Other powerful feudal empires were created: the Ottoman Empire, The Mongolian Empire, the Pueblo civilizations in America, etc. See Figure 7.

VIIIth Period of Life: "Pre-Modern Civilizations"

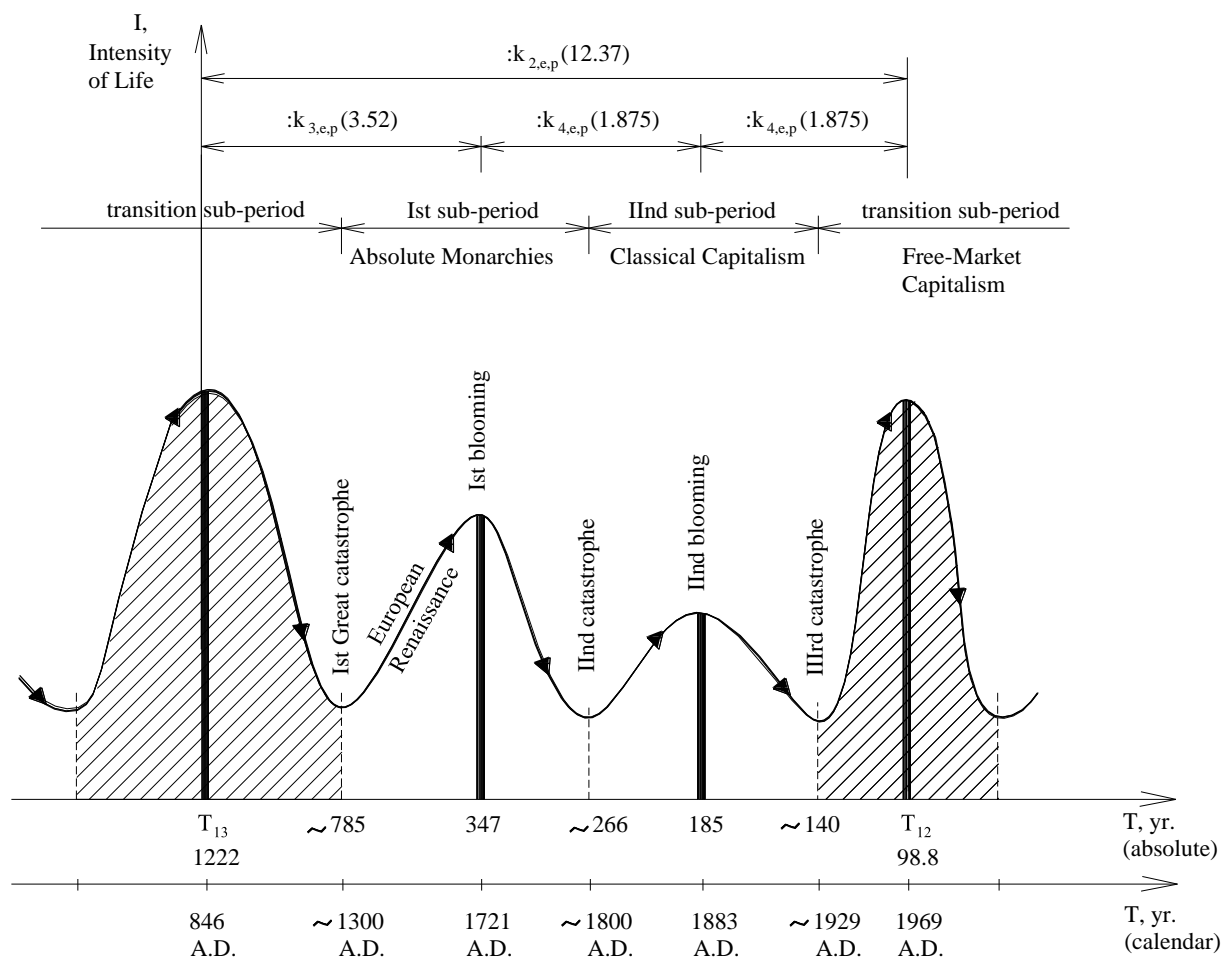


Fig. 7

The climb up on the diagram (curve) of Civilized Human Evolution (after the third catastrophe, approx 300 A.D.) was accompanied by renaissance of the science not only in Europe but also on other continents. Mayan civilization developed mathematics and astronomy (350 A.D.). China was another center of scientific renaissance: Chinese people invented the first calculator, paper, gunpowder (760 A.D.); the Tang dynasty was the era of great masters of poetry and painting, and advances in medicine (600 A.D.). In India the golden age of science and culture occurred during the Gupta dynasty (320-500 A.D.).

The Middle Ages (846-1300 A.D. approx) are the second half (climbing down on the curve of Life Evolution) of the transition sub-period between the fall of the Roman Empire and the beginning of the European Renaissance. This is an epoch of relative stagnation in the evolution of science, culture, and technology. Educational and cultural activities were totally abandoned. Greek science, literature, sculpture, and architecture were forgotten. The unique civilizing force of the Middle Ages was the Catholic Church. There were some achievements in architecture, notably the great cathedrals.

The first great catastrophe of the Seventh Life Period occurred at the end of 14th century and the beginning of 15th century. See Figure 7. The “black death” or bubonic plague reduced the population in Europe. Every third European died from this cruel disease. In Europe and Asia, the bubonic plague killed 75 million people in only three years. Europe was devastated continuously also by wars: the Hundred Years War (1337-1453 A.D.) and the Muslim invasion in Europe in particular. At the same time, the Mongolian emperor Genghis Khan devastated Asia and North-East Europe (13th century). The Mongolian tradition of conquest was continued by Tamerlane in the 14th century.

The main productive force of the transition sub-period was peasants who tilled the soil and raised cattle. They were the private property of noblemen. Towards the end of this sub-period, the craftsmen (free people) became the main productive force in addition to the peasants. Craftsmen had already made use of better work devices.

The first sub-period of the Seventh Life Period (approx 1300 A.D. – 1800 A.D.) marked the formation of powerful feudal empires: Spanish, Portuguese, Mongolian (under Tamerlane and Babur), English, French, Russian, Inca, Aztecs, Ottoman, etc. Those were absolute feudal monarchies, with the monarch holding all power.

The decline of the absolute feudal monarchies started before the first flowering of the first sub-period. They were gradually destroyed by the

victories of the first anti-feudal uprisings in Netherlands (1609 A.D.), England (1649 A.D.), China (1644 A.D.), etc. In Russia Peter the Great abolished old feudal rules and created a modern country (1700-1721 A.D.).

The evolution of the first sub-period was dominated by the creation of parliamentary monarchies and republics. Machine production appeared at the time of the flowering (1715 A.D.), marking the start of the Industrial Revolution in Europe. Feudal relations were replaced by the capitalist system of production and distribution. During the time of the second catastrophe (approx 1800 A.D.) many uprisings and revolutions broke out. The Declaration of Independence was signed in the United States of America (1776 A.D.); the French people conquered the Bastille (1789 A.D.) and beheaded their king; parliamentary reform in England imposed limitations on the monarch's authority; the anti-feudal revolutions of 1848-1849 A.D. established capitalism in France, Germany, and the Austrian empire; serfdom in Russia was abolished (1861 A.D.); the 1849 A.D. uprising against British colonialism in India signaled limitations of colonial empires; the peasants in China revolted (1850 A.D.); the Turkish feudal empire disintegrated.

At the beginning of the 14th century, an enormous interest in science, culture, and technology erupted in Europe. This moment is the time after the first great catastrophe of the Seventh Period of Life. See Figure 8. The Renaissance started in Italy. This epoch created great painters, philosophers, scientists, and inventors. Some great achievements and names of this epoch are: Giotto (painter, 1266-1337), Leonardo da Vinci (painter and inventor, 1452-1519), Rafael (painter, 1483-1520), Michelangelo (painter and sculptor, 1475-1564), Dante Alighieri (poet, 1265-1321), G. Boccaccio (writer, 1313-1375), Brachmante Donato (architect, 1444-1524), N. Donatello (sculpture, architect, 1386-1466), N. Copernicus (Catholic monk who created a sun-centered model of the solar system, 1475-1543), Erasmus (philosopher, 1466- 1536), Galileo Galilee (mathematician and physicist, 1564-1642), Christopher Columbus (discovered America, 1451-1506), F. Magellan (navigator, 1480-1521), and many others. The flowering of this sub-period is probably connected with the creation of of Newtonian mechanics (1687), I. Kepler (astronomer, 1571-1630), P. Fermat (mathematician, 1601-1665), R. Descartes (mathematician, 1596-1656), C. Huygens (physicist, 1629-1695), W. Harvey (he discovered the circulation of blood. 1628), etc.

The second sub-period of the Seventh Life Period is “reserved” for classical capitalism in England, France, Germany, USA, Russia, etc. This sub-period was ended around 1929 A.D. (the third catastrophe of the

Seventh Period of Life). The third catastrophe was connected mostly with the Great Depression. In the zone of the third catastrophe many other disasters happened: WWI, anti-capitalist revolutions, WWII, first nuclear bomb exploded, Spanish influenza, deadly outburst of tuberculosis, mass starvation (Soviet Union), etc. Again there was a considerable reduction of the human population due to wars, revolutions, deadly diseases, starvation, etc.

The end of the World War II - the major social catastrophe - marked the beginning of intense global changes in human society. The transition period (1929 A.D. – to about 2010 A.D.) is a period *Classical Industrial Society* (Free Market capitalism and socialist /communist dictatorship republics). This transition sub-period is characterized by incredible acceleration of the progress of the Human Civilization.

The United States rose to world prominence as a modern industrial democracy.

The time of “climb up” on the evolution curve (approx 1929-1968) was marked by successful anti-colonial revolutions which destroyed old colonial empires: Britannic, French, Portuguese, Belgian, Nederlandian,..., others. This “climb up” on the evolution curve was time of important discoveries in the physics, chemistry, biology, medicine, and technology. At the zone of the maximum (circa 1969) great achievements in science and technology were realized: harnessing of nuclear energy for peaceful applications, first cosmic flights (in particular the Apollo Project – 1969), construction of powerful elementary particles accelerators (many new elementary particles were discovered), Standard Model, computers, Big Bang model, J. Bell’s theorem, etc.

At the turning point ($dT/dI = 0$) on the curve of life evolution (circa 1978) started gradual destruction of the classic industrial society. This moment is connected with Soviet unsuccessful invasion of Afghanistan. The disintegration of the *Classic Industrial Society* started in its weakest part – the Soviet block – after the death of soviet dictator L. Brezhnev in 1982. The disintegration of the Soviet block was completed by anti-communist revolutions in Eastern Europe between 1989 and 1994. Severe recession in the USA (1981-1982) shrank economy by 2.7%, severe economical crisis in the East European former socialist countries (circa 1996), wars between former Yugoslavian republics, last communist regime in Europe (in Serbia) was eliminated after NATO’s “aerial war” against Yugoslavia (1999), US and NATO wars against Afghanistan and Iraq, “velvet” revolutions in Georgia and Ukraine, terrorist attack against USA (September 11, 2001), present severe global recession (2008-2009) present “crisis” in Iran (June

2009), are among others, the omens of the forthcoming destruction of the *Classic Industrial Society*.

In his “Centuries” the great French prophet Nostradamus predicted the advent of this Great First Catastrophe of the Ninth Period of Life:

*“In the year 1999, and seven months,
From the sky will come the great King of Terror.
He will bring to life the great King of Mogols.
Before war and after war reigns happily.”*

*“Evil breeds with haste of vermin.
His cursed brood rules the 200th decade.
The Lamb in battle dress confronts.
The Dark one with his unholy legions
to herald the third millennium.”*

The “aerial war” against Yugoslavia (1999) and terrorist airplane attack against the USA (2001) fit well the Nostradamus’s prophecy. The *Lamb* symbolizes the evil side of the *Classic Industrial Social Order* (the Anti-Christ). The King of Mogols could be Osama Bin Laden whose residence is now where was, long time ago, the location of the capital of the Mongol Empire – Kabul (Afghanistan).

Western Civilization (Free Market System) is in decline now, and one of consequences of this degradation is the present sever recession. Manufacturing sector is contracting very fast, the unemployment rate is already 10% (in the USA), partial or full nationalization of big banks and other financial institutions are another omens for upcoming great social changes.

The happy times of the most recent U.S. presidents (Ronald Reagan, George Bush-father, and Bill Clinton) are over. The current U.S. president Barack Obama will face (already faces) very difficult times. Obama’s presidency will be a *Time of Great Changes!!!* Existing financial/economical institutions will be reformed (or destroyed) in cardinal way. U.S. Constitution will be reformed to fit the New Social Order. The Free Market Social Order will be eliminated!!! The Big Capital will lose its indisputable power over regular Americans. New main source of energy (Quantum Free Energy) will eliminate the monopoly of the Big Oil and the Big Electrical (coal, oil, gas, nuclear)! The Free Market Social Order will be replaced by New Social Order – the *Modern Civilization*.

˘ The days of the Free Market Economy (the current capitalist social order), the days of exploitation of the regular human beings and undeveloped countries, the days of brutality of the rich classes and rich countries, the days of humiliation and social/economical injustice, are numbered!!!

The first catastrophe of the Eight Period of Life is a Great Catastrophe – like the one which happened at the 14th century A.D. New plague (maybe the Swine Flu) will reduce considerably the human population. Some deadly danger for Western Civilization could be expected from East (China, some Islam countries,...?).

The moment of transition from *Classical Industrial Social Order* to the *Modern Civilization* will occur in the period 2010-2022 A.D. The moment of transition (at the great first catastrophe) to the new world social order is catastrophe only for the Free Market Social Order, and not catastrophe for the whole our civilization. Life, in cardinally changed form, will continue after this catastrophe.

Now there exists very wrong confidence (shared mostly by conservators) in stability and eternity of the Free Market Social Order. Evolution in the human society is considered only as an evolution in scientific and technological plan. However, nothing is stable, nothing is eternal. The entire world and the USA in particular, are now on the threshold of a new world social order. Within few years from now our entire civilization will be transformed into a totally different civilization. The evolution of the human civilization is not an accidental process, depending on the pure chance or on the capacities and wishes of the world's top political and economical leaders. Rather, it is a quantum chain of social, scientific, and technological events governed by the unchanging quantum laws of the universe. Big Money, Big Oil, super-power governments, Islamic extremism (or any other religious extremism), or persistent political conservatism, cannot stop the process of destruction of the current Free Market social order.

The destruction of the last human civilization - the *Modern Civilization* – will occur circa 2056 (the third catastrophe) and will be completed circa **2068 – the End of the World!** The great I. Newton predicted 2060 A.D. as the end of the world! The year **2068** (or around this year) represents not only end of the human civilization; it is also **End of the Universe!** The accelerated destruction of the human kind can be expected to start circa 2063 A.D. There will be nothing left after 2068 (approx). Our world (planets, stars, galaxies, the entire universe) and Life in it will

disappear in the *Indefinite End* (“black hole”) of the universe. For sure there will be no celebration of the New 2100 year!

VIIIth Period of Life: "Modern Civilizations"

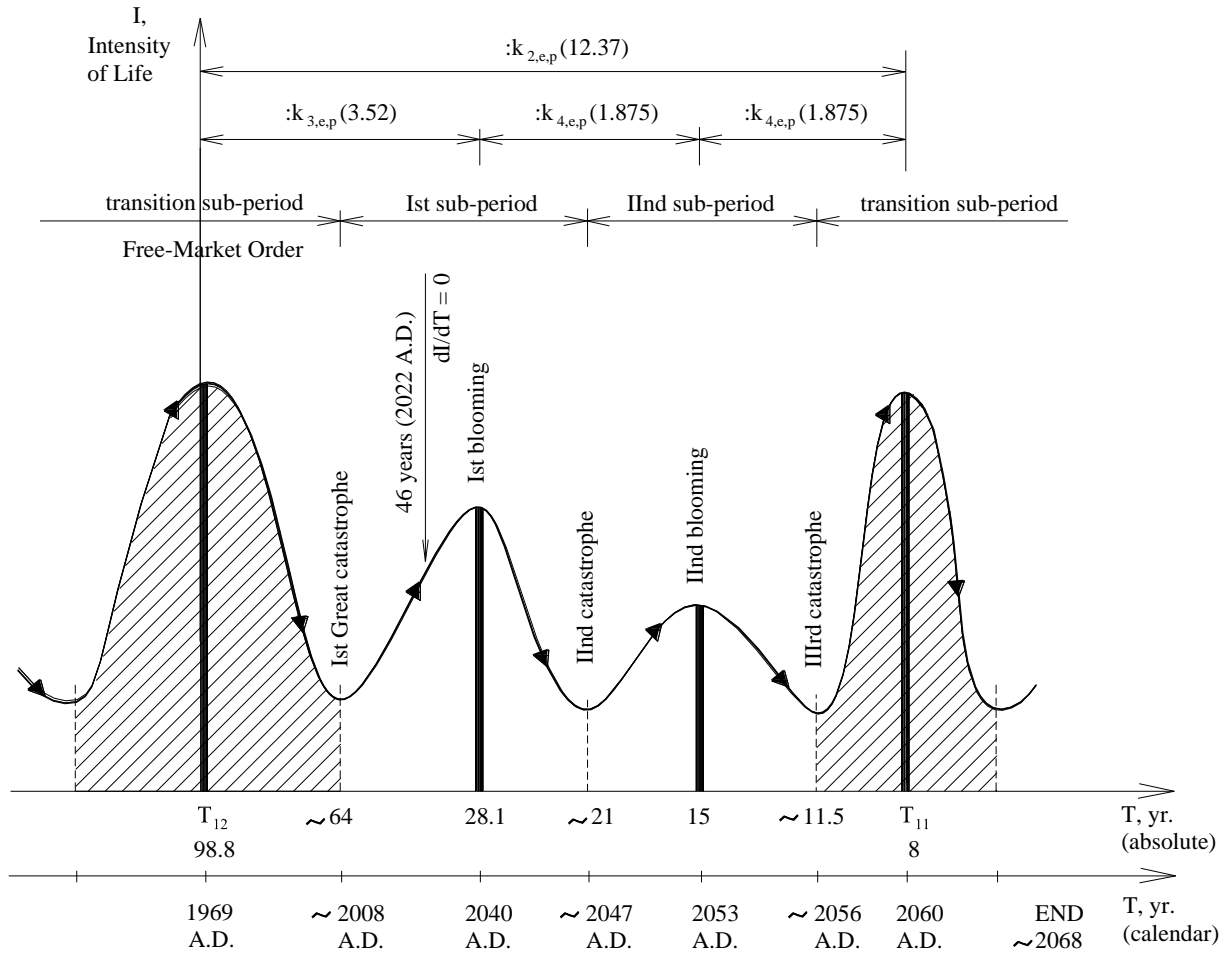


Fig. 8

The demographic data about the human population on earth ensures a hyperbolic law:

$$N_{people} = \frac{c}{t_0 - t};$$

Where,

C, t_0 - constants,

t - time in years A.D.

Based on two reliable milestones on this curve/graph (1000 A.D. – 380 million people; 2000 A.D. – 6 billion people), we have:

$$N(t) = \frac{4.08 \times 10^{11}}{2068 - t} \text{ people}$$

The above formula is not mine; it's scientists/demographers deducted it. Year **2068 A.D.** is a special year – **the End of the World!** This year is out of reach because human population cannot become infinity in number! Several years before this ominous milestone year human population will start to deteriorate!

How this final Armageddon will happen? I don't know how. Jesus Christ told his disciples: *Nobody, even though the Son of God, knows the exact time of the Last Day of the World. Only God knows this day!*

Maybe you can receive some more detailed information about the final days of the world from the Saint Jean's *Revelation* (known in some countries as *Armageddon*). Most likely some very deadly disease or some other biological catastrophe (general sterility of men and women toward the End of the World) will exterminate the last humans on earth. Scientists warn: A “deadly dozen” diseases (avian flu, tick-borne babesia, cholera, Ebola, parasites, plague, Lyme disease, red tides of algal blooms, Rift Valley fever, sleeping sickness, tuberculosis, and yellow fever) are likely to spread in large global scale because of climate changes. The Darwin's mechanism (if true) of natural evolution of species and quantum wave of life's evolution will start to work very actively in behave of bacteria and viruses when approaching the End of The World. The genetic mutation of bacteria and viruses (they will become very resistant to antibiotics and other drugs) combined with weakening human immune system will take the life of billions people. Natural disasters (which intensity and amplitude will increase dramatically towards the End of the World) and severe changes of the climate could make planet earth impossible to sustain life on it. Cosmic disasters can add their contribution to the total extinction of the Life on earth. One of the omens (which we are observing already nowadays) of the upcoming End of the World is the fast decline of mammal species: one in two mammal species on earth are in decline and at least one in four is at high risk of disappearance forever, according to a recent scientific survey. It is known from biology that for every given species animals there exists some

critical number of individuals for stable and continuous existence. If the population of species drops below this critical number, then the species can disappear totally and very fast. A typical example of total fast extinction is the extinction of the North American Passenger Pigeon. Once the most abundant bird in North-American forests, in innumerable hordes, this species disappeared at the end of 19th century (and early 20th), leaving no trace. Human species could disappear in such a way.

Like late *Neanderthal*, the last generation human beings can undergo some biological degeneration of their bodies, and because of that, they will lose their social features: their communities (families, organizations, businesses, towns, countries) can grow very unstable and not sustainable for social life.

It's so scary to think and write about that. Alas, our kids and grand-kids will have no kids of their own. We are the last human generations on earth and the last representatives of the Animate Nature!

The present end of the world is the beginning of the next cycle (circle) of the universe. The beginning of life is death, the beginning of death is life; all a great circle-cycle of the Observer shaped by the Quantum Wave of Life Evolution; all a great circle-cycle of Life shaped with the good times (climbing up on the curve of evolution) and bad times (climbing down on this curve). As there is good and evil in the God's plan of evolution, there is also good and evil in the souls of human beings. The good and the evil are the two inseparable sides of the medal "Human Life".

The present cycle of the World is absolutely the same as all other cycles. It is the same in all its details. There is no other world (parallel universe or paradise) which is refuge for our souls after physical death of our material body. Everything happens on earth. Here, for the first time in our life, we see the face of our loving mothers, here we grow up, we love, we enjoy life, we marry, we give birth to our kids, we see the light of our sun, and we die.

People, don't suffer too much for your beloved dead relatives, don't cry for your bygone happy youth, and don't be afraid of your death and the near death of the world. Even so limited in time (some 80-90 years), our personal life is eternal. In the frame of our quantum time-life, the personal consciousness (the soul) of every human being never starts from zero and never finishes at zero. We perceive ourselves only as alive human beings, not as a biological embryonic cell or destroyed to the state of atoms and molecules dead human flesh. The personal life-cycle is repeated – in the same details – infinite times, without determined beginning and end. In

every life-cycle (absolutely identical to each other) we meet over, and over, our parents, our friends, our kids, and the same world around us. Between these endless life-cycles there exists nothing, there exists no time at all, there exists no death. The individual life-cycles are closed loop quantum time-bubbles within which we are confined forever. We are located continuously and eternally somewhere on the closed “time-line” of our personal quantum “time-cycle”, between the undetermined (just for us) birth and undetermined death. The same is valid for all quantum cycles of Life including the Cycle of the Universe/World.

Quantum Wave of Man’s Evolution

Man’s individual life also is shaped by the *Quantum Wave of Life Evolution*. See Figure 9. However, in the case of man’s evolution the direction of evolution is inverted. I explained already what is the underlying cause for this “strange” conversion of time (GQM-III).

Transition sub-period (5.5 – 12 years) is the time of “childhood”. The age 5-6 years is the last catastrophe of the “early childhood”. At this age a qualitative change occurs in the child’s development – he/she is already “civilized” human being, goes to kindergarten, and learns to write and read. The age 8 years is the flowering of this transition sub-period – the child goes to elementary school. The 12th year is dangerous age because of puberty – health and behavior problems develop.

First sub-period (12-21 years) is the “teenager age” – time of accumulation of experience and knowledge. It’s a hard period for parents.

Second sub-period is the “adult” period. At the time of the second catastrophe (the beginning of the “adult” period) people are graduated from high school – they have enough knowledge and experience to start independent (from their parents) life. Some people at this age leave their parents home, marry, and start to work. The age 28-years is the time of flowering – people are graduated from colleges, have a good jobs, have a good skills, majority of them are married, first kids arrive. At this age people are definitely physically built (they don’t grow in height anymore), they are

in perfect health and strength, they are sexy and desirable by the opposite sex.

IIIrd Period of Human Life

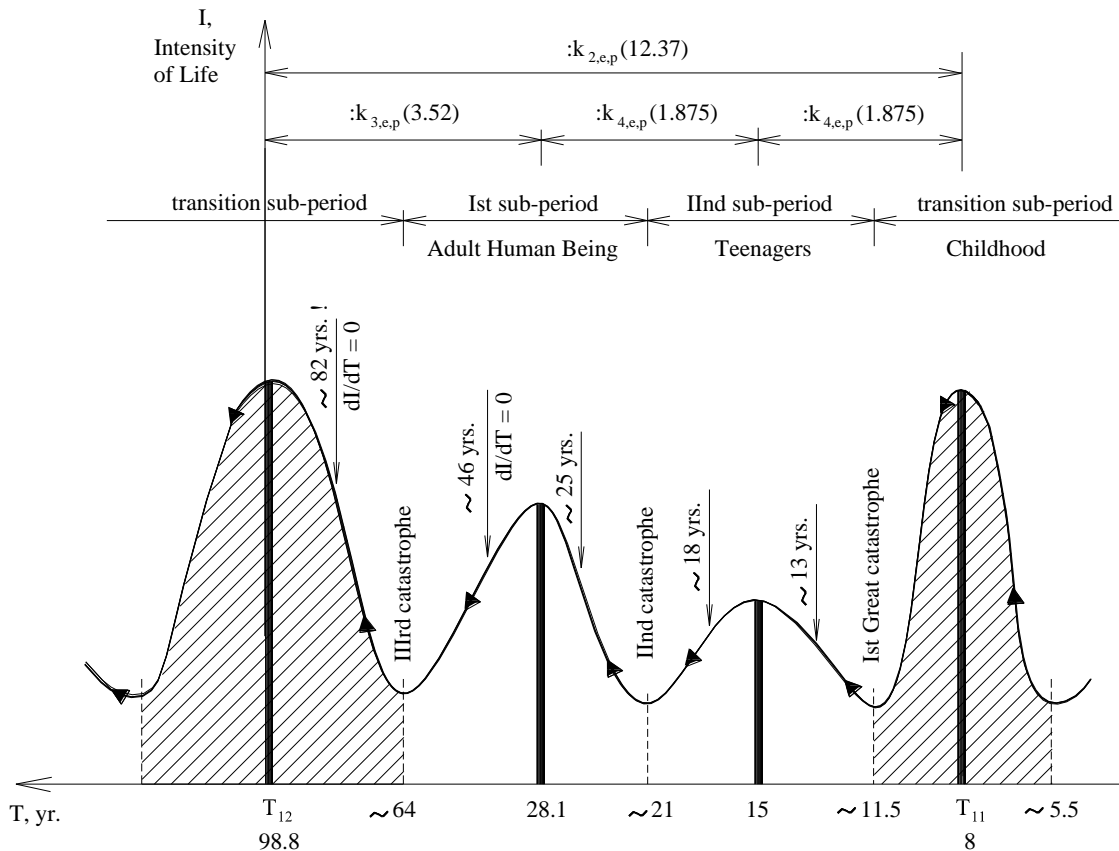


Fig. 9

After this last flowering in the human life a downfall on the curve of evolution starts. In the zone of the maximum the things are O.K. – people are still healthy, strong enough, still attractive, they accumulated good experience, and they are very productive.

After age 64-65 (approx) – the third catastrophe – serious problems with health start. At this age people are retired. The turning point on the curve of evolution ($dI/dT = 0$) - about 81-83 years old – is the time when most people die. This age is the average longevity of human life. The number of people surviving this age is small.

The probability of living more than 99 years (the maximum on the curve) is very small.

The turning points on the previous two life periods are: 9 months (women give birth to their babies at the 9th month of pregnancy; and 10 years (?).

In this publication I don't comment the early human childhood (Figures 10,11).

IIInd Period of Human Life: "Early Childhood"

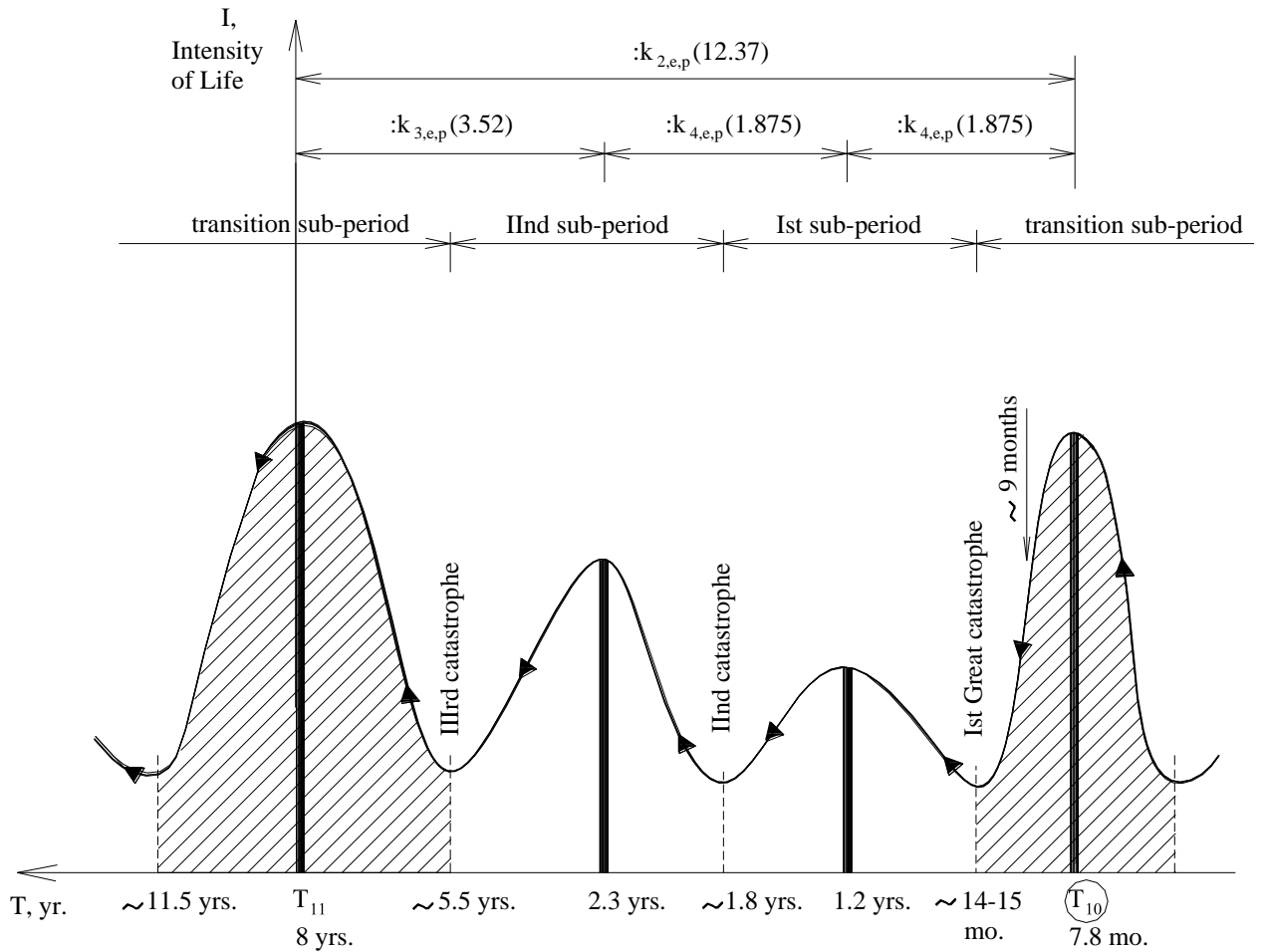


Fig. 10

The first (great) catastrophe in the evolution is the most important one: at the zone of this first catastrophe the old (the previous in the evolution) quantum life period (and its corresponding "quantum animate

class”) is transformed into new life period and class. For the human being these great catastrophes occur at:

- 28 days (the moon month)
- 1 (one) year
- 11.5 years (the sun’s cycle)

Ist Period of Human Life: "Baby's Period"

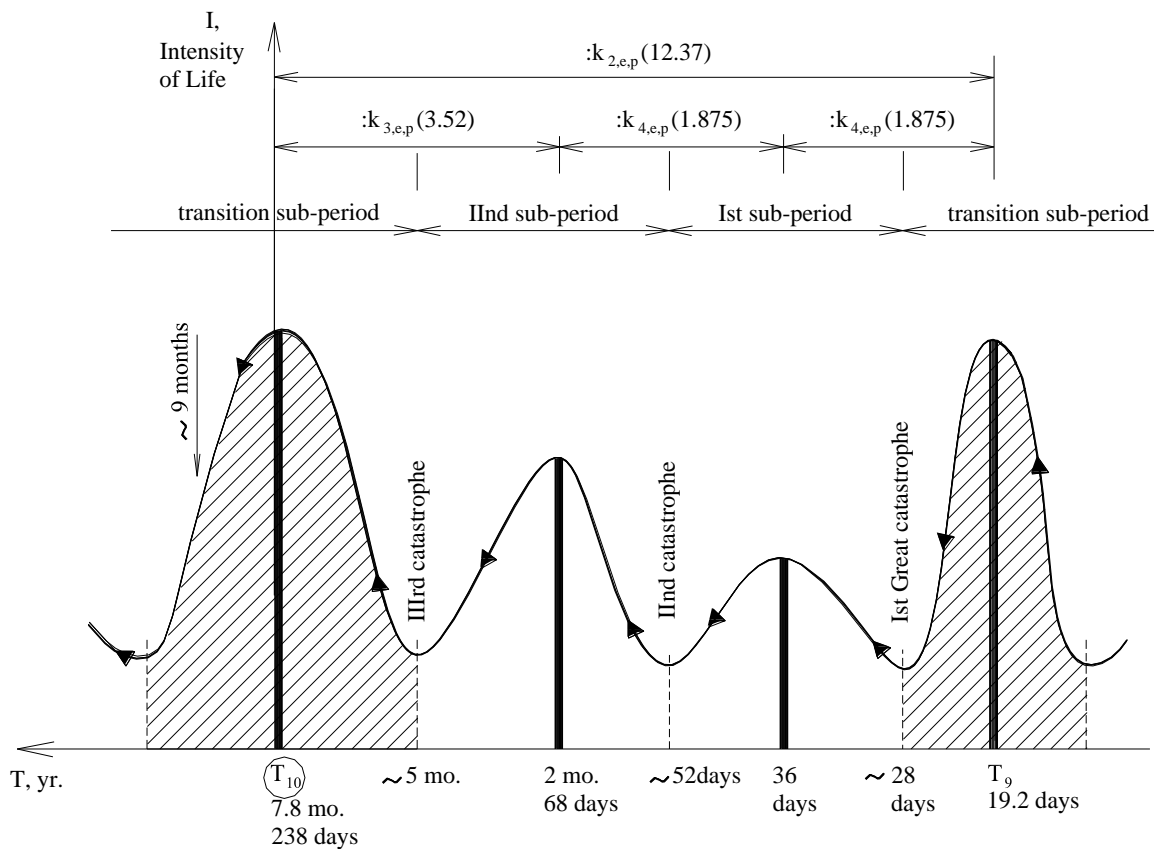


Fig. 11

All these quantum time-cycles play important role in human being’s biological and social life!

The current calendar is not natural and perfect: months are composed of different number of days (28, 29, 30, 31), days of the week (Monday, Tuesday, ...and Sunday) fall on different dates, etc. The “moon” calendar

looks much more natural and easy to use it. I propose the following scheme of a new calendar:

- 1 (one) year is composed by 13 months each 28 days. Every month is composed by 4 weeks of seven days each (Monday, Tuesday,...). Every month starts on Monday and finishes on Sunday. Every year starts on Monday and finishes on Sunday. Every day of the week falls on the same dates: Monday (1, 8, 15, 22), Tuesday (2, 9, 16, 23), etc. That's easy to remember.
- One year is composed by 52 weeks:
 $52 \times 7 \text{ days} = 364 \text{ days}$.
- The first day of the year is a leap day (no Monday, no Tuesday,...). It can be called "New Year Day". Every four years (Olympics years) we'll have two "New Year" days. People will have 2 days off at the end of the year (Saturday and Sunday) + one (or two) "New Year" day.
- There will be 4 (four) quarters (in the year) each composed by 13 weeks (again this number!).
- Etc.

Human nature (evolution of body, social life, behavior) is governed by the Quantum Wave of Life Evolution and by some other fundamental principles valid for all material (inanimate or animate) objects in the universe. One of those principles is: *The individual and the class (the common quantum image of the human beings) share a fundamental unity!* The class of all human beings shares similar evolution over time, similar behavior, similar perceptions of the environment, similar forms and proportions in their bodies, etc. The relations (exchange of bio- and soul-energizer; any other information) between the individual and the class are instantaneous (not limited by the speed of light and without any intermediary material carriers). The individual varies from this general pattern of unity in particular details. The principles of unity governing the class provide the structure. Each individual, with his or her particularities, provides the composition within that unity.

All human beings must remember that, in addition to being individuals, they are image-manifestations of the "all-human class", meaning that their souls (our souls) are individual manifestations of the Holy Spirit (God). To humiliate, beat, kill, rob, ..., means inflicting violence on

oneself. We must know that every human being on earth is our close relative, a holy twin!

As we know already, beside the “common human class – the human species” there exist also lower quantum levels of human communities: parents, family, business/organization, city/town, country. Parents are the closest (to the individual human being) quantum level: people acquire with the biggest probability features (physical and behavior) of their parents. It happens that a person born after death of his father has the same manners of behavior as his dead father had. Genes are not responsible for the transfer of elements of human behavior from parents (or grandparents) to the kids.

It is clear now, that no medical gimmicks or any other device could make man live past the quantum limits, much less immortal. The problem is not in the chemistry (or biology) inside the human body. The problem lays outside the human body – the problem is in the quantum nature of humans!