

Wiesław Mikołaj Wróbel

ON US

truths, half-truths
and utter untruths

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FROM THE AUTHOR

This book is devoted to partially recognized but underappreciated knowledge, namely that we are held hostage to the genes that we inherited from our parents as well as a long line of ancestors.

Genes influence and largely determine our individual lives, our ups and downs, ambitions and capabilities, and along with coincidences, upbringing, education, and random events, sculpt our lives.

Genes also determine instinctual behaviour that has shaped and continues to shape the lives of entire communities, local, tribal as well as national ones and have had a major impact on the course of history, the development of culture and civilization.

THE TRUTH ABOUT MAN

Wiesław Mikołaj Wróbel is a neurologist, a traveller and a citizen involved in the daily life of his community. He has travelled across many lands and seas, and learned about wonderful works of people living and fulfilling themselves in various cultures and civilizations. Fascinated by the diversity nature, he has brought to Poland numerous specimens and created a small open-air museum of exotic flowers, shrubs, and trees. The experience and the knowledge he has gathered during his constant quests for better fulfillment of the tasks resulting from his medical profession as well as from his passion of working for the good of his local community have resulted in the monograph titled *Coś o nas – Prawdy, półprawdy i całkiem nieprawdy (On us – truths, half-truths, and utter untruths)* /Bydgoszcz 2005/.

The attitude that the author has employed for dealing with the vastness of human knowledge has been permeated with humbleness and respect. It is visible in using the word “something / *coś*” in the original title; “something”, and thus not “everything”, but a small fraction, a detail, a fragment. What has become the core of the author’s inquiries and reflections? As he puts it in “From the Author”, section opening the volume: “[t]his book is devoted to partially recognized but underappreciated knowledge, namely that we are held hostage to the genes that we inherited from our parents as well as a long line of ancestors.” The genes are the realms of human existence that are still being discovered today; they are constantly posing the subject of research for numerous scientists. The issue is fresh, but it keeps opening new unknown recesses of human nature. The author, being a physician, thanks to the obtained knowledge, enriched with his experience of many years of medical practice, can add plenty insight into this matter, thus providing extremely helpful advice and reflections. This remains, in my opinion, the greatest weight of this monograph and constitutes the reason why I strongly recommend this work to the readers; it clarifies and defines something highly important to each of us.

The author did not merely remain within the realm of medical science. He referred abundantly to the achievements and the reflections of contemporary biologists, chemists, sociologists, and psychologists. He presented surprising connections on various levels of human nature that apart from the intellectual and spiritual assets has its physical facet, which is the seat of numerous biological and mechanical processes. Depicting and describing those processes is the subject of the author's inquiries. It remains an particularly complex and demanding issue, and yet an extremely needed one. Solving and learning about the secrets hidden in human genes can contribute to constructing human existence with smaller amount of suffering. The author remains very optimistic: "Understanding the human genome, the location of each gene and the functions that it fulfils, will certainly open a number of programs in the field of medical genetics, which means the eradication of many genetically inherited diseases, improving the quality of life and its prolongation."

The author situated his reflection within a vast historical and philosophical panorama. He took up complex existential issues and attempted to find the answer to the question referring to the achievements and the solutions employed by bygone cultures and civilizations. He emphasized this way of reasoning by starting his work with the following questions: "Where did we come from? What was the origin of the human being? Who created him? Why does he live? What happens later, that is after death?" These questions have been posed by the human race since the beginning of its existence. The illustrations of the endeavors people have made have been visible in numerous historical and philosophical sources. The author referred to many of those sources, thus providing the readers with his own original point of view and frequently innovative concepts. I believe that this fragment of the author's reflections is particularly interesting and provides particularly stimulating perspective for the discussion on the subject.

Summing up, I strongly recommend W. M. Wróbel's monograph titled *On Us*, and encourage to reading this volume. It will not be time lost, since

- firstly, the book opens new realms of knowledge to the important issues of human genes;
- secondly, it presents original perspective on the directions in which human culture has developed, and
- thirdly, it presents contemporary original point of view on an individual and human fate.

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INTRODUCTION

Where did we come from? What was the origin of the human being? Who created him? Why does he live? What happens later, that is after death? These questions and dozens of similar ones have been formulated from the beginning of human existence, from the time when people found words for abstract concepts, since without verbal communication, expressing abstract thinking, men with their self-awareness, would not be able to give their insights and thoughts to other members of the human group. This truth was clearly articulated by Descartes and his famous *cogito, ergo sum* (I think therefore I am), which means that one of the features of human existence is that a person is able to think. The views of scholars, who recognize that self-awareness among some animals, especially apes (chimpanzees, bonobos, and gorillas) as they have the ability to recognize themselves in a mirror, have serious limitations, since the self-awareness of those animals ends there, and they are not familiar with terms: grandfather, grandmother, family history, etc.

Intellectual, social, and cultural development and the growth of civilization, especially at the time of the formation of the collective social life a few thousand years ago, highlighted the question on the origin of man and it began to appear more and more frequently.

Numerous comments appeared, both from anonymous philosophers and thinkers, whose names did not survive in history as well as from some eminent ones. They all sought to systematize these existential anxieties, thus creating more or less ordered philosophical or religious systems. In the world permeated with multiple, often conflicting concepts, resulting from a variety of geographical and natural conditions, created by thousands of different tribes and peoples, such systems were much needed.

The development of various societies and the formation of political and national organizations were followed by the unification of numerous concepts, ideas, philosophies, and gods.

This unification of beliefs and rituals perfectly fitted the tribal power elites, since it encouraged the lessening of the hostility between different tribes and formed the basis for the development of larger ethnic groups, called nations. The Ancient Egyptians found a perfect solution of this problem, namely creating a complementary and independent system of beliefs, born in the Nile valley; it was nowhere else to be found. At the beginning of the Old Kingdom, Horus remained the most important deity, and his cult was later replaced by the cult of Seth, that in turn was replaced by Osiris. Beginning with the fifth dynasty, Ra became the creator of gods and men, and a universal deity, and starting with the ninth dynasty he gave way to Amun.

The Sumerians, the initiators of the first culture of Mesopotamia and sophisticated at that, preached the cult of the three main gods: Anu, the god of the sky and the father and king of the gods; Enlil, the ruler of the world and the people; and Enki, the ruler of the waters. The cult of this triad had survived in Mesopotamia for millennia, until the end of antiquity, despite the fact that the civilization of the Sumerians in Mesopotamia was followed by the Semitic cultures, which had a huge impact on the religion of the ancient East. It resulted from constant surge of the Semitic peoples fleeing from the Arabian Desert during periods of overcrowding and natural disasters caused by short-term climate changes, in the form of periodic droughts and adverse living conditions.

Preserved excavations in the Indus valley seem to confirm the claim that initially various deities, gods and goddesses, including probably the great Goddess – Mother were worshiped in the area. With time, the territory of India had been inhabited by the Aryan tribes who imposed their own beliefs that were being created and written down between 2500 BC and about 500 BC in Sanskrit,

in a great collection of sacred texts of Hinduism, the Vedas. This trend gave rise to the development of Vedism, Brahmanism, Jainism, which was founded by Mahavira, as well as Yoga and Tantric cults referring to Pre-Vedic cults of Mother Goddess and contemporary Hinduism, which incorporates all of the aforementioned cults, and hundreds of others which are not listed, including Left Hand Tantra, honouring Shiva and his consort, Shakti, in the form of collective sex for cult purposes. Tantrism is quite common in western India, and its elements were established even in Tibetan Buddhism and Mongolian Lamaism.

Buddha, born in 560 BC, had a very significant role in the development of philosophy in particular; his teachings are situated rather in the realm of philosophy than religion. As Buddha's teaching had been spreading among people, the need to create and develop a cult was intensifying. For many centuries Buddhism captured almost the whole of India, and only in the fifth and sixth centuries AD, had given field to revived Hinduism. Buddhism became deeply rooted in the whole of Southeast Asia, Sri Lanka, China, Japan, Korea, and among the peoples of Tibet and Mongolia. In China Buddhism had coexisted with the imperial cult of the ancestors; Confucianism, in its nature more of a philosophical, ethical, and state doctrine, than a religion; and Taoism, a purely religious doctrine, acknowledging two opposing elements of Yin and Yang, male and female, striving for harmony.

The examples of ancient Egypt, Mesopotamia, India, and China provide a purely perfunctory summary of the process of creating and developing a unified system of beliefs and rituals. As it was already indicated, organized philosophical and religious systems had originated in vastly diverse geographic, natural, and demographic conditions. Nevertheless, they were invariably created by the need to find the answer to the question: "Where did we come from and what is the purpose of our lives?", rooted in thousands of tribes and peoples.

ANTHROPOLOGY

The science of man, the origins, development, diversity of race, history dating back thousands and hundreds of thousands of years, is called anthropology. It is a field of science of highly syncretic nature that has numerous ties, both with ethnology, ethnography, as well as medicine, biology, and more recently, genetics.

It is commonly known that in evolutionary terms a human being is at the top of the mammal group. Although people are separated by millions of years of evolution from e.g. mice, which are subjected to thousands of laboratory experiments, people share most of their genes, ninety-nine per cent, with chimpanzees, which means that only one per cent of the genes differs humans from the most intelligent ape.

Hominidae

Numerous archaeologists are familiar with numerous fossil remains of primitive men found on all continents of the Old World. These are remains of humanoid apes, which were bipedal or moving like men on their two lower limbs (not to be confused with apes living today). Morphologically, they were very similar to modern humans, and are known as hominids. These included *Homo habilis* and *Homo robustus*.

The core for this discussion are the latest of humanoid species of apes in the developmental ladder, a hominid called *erectus* –upright man. He appeared as a result of the evolution of the previous forms about 1.8 million years ago. For about 1 – 1.2 million years he did not undergo any perceptible changes. These did not become noticeable until about 600 thousand years ago, and were

reflected in the slight improvements of tools, passive use of fire but still without the ability to start it.

At this time, that is about 600 thousand years ago, *Homo erectus* was separated from its subspecies, Pre-Neanderthal Man, the ancestor of Neanderthal man, who lived in Europe and Asia long before modern man. After studying nuclear DNA, modern geneticists, who knew the time the mutations appeared, calculated that this separation had taken place about 500 to 600 thousand years ago. Pre-Neanderthal People were then the subspecies of *Homo erectus*, and spread throughout Europe, western Asia, and northern Africa. The Hominid, called *Homo erectus* was the progenitor of man, but it is commonly agreed that it was not yet modern man, who according to some scholars appeared about 100 thousand years ago, and according to others 150 to 200 thousand years ago. According to the homocentric theory, the first man appeared in Africa. There he reproduced, and spread further to all continents. According to the polycentric theory, man appeared in two centres: Asia and Africa, as a consequence of the evolution and the development of the highest form of humanoid apes, called hominids. Hominids, *Homo erectus*, or the last species from which man has come from, is characterized by significant growth in cranial capacity, considerably larger than in modern living apes, chimpanzees or gorillas, but much smaller than in modern humans. From excavations we know that hominids lived on all continents of the Old World: in Europe, Africa, Asia, China and Java. Little is known about their existence, but we can assume that they lived in small family groups, up to several dozen members. They were familiar with simple tools, such as sticks and stones, similarly to modern chimpanzees; their actions, however, are much more primitive and merely occasional, in contrast to hominids, who were also able to make active use of fire.

GENETIC DRIFT

Hominids living for hundreds of thousands of years scattered at a large area certainly created local races or subspecies similar to each other as a result of genetic drift, bestowing individuals who had experienced beneficial mutations with larger survivorship in a specific natural environment. Genetic drift refers to both physical and mental features. Gene mutations changing a small detail in the anatomical structure, such as the face, the eye frame, the nose or the mouth, are likely to be of equal frequency in both humans and other mammals, including domestic animals raised by humans.

In the animal world we can witness numerous examples of this phenomenon. Those illustrations are related to a number of species that form the local breeds, differing only in one or few genes that allow for the survival in a new environment. A good case in point here may white polar bears living in the Far North, and many dark-coloured bears living from the temperate-climate zones to the high Himalayas and tropical Borneo (Kalimantan). Another example may be the Canidae family that is both wolves living in the north, the tundra and in India, and jackals living in the south, in hot or desert climate. Hares living in the north (mountain hares), in places where winters tend to be long and snowy, have dark fur in summer, and in winter their pelage turns white. The ancestors of mountain hares probably lived on the border of a climate zone with long and snowy winters. When winters were shorter and less snowy, the hare population migrated to the north. But each following snowy winter destroyed this expansion to the north, as dark coat made them conspicuous and an easy prey for predators. Only after a random mutation that caused paling fur for winter, the hare population could spread to new, large and cold areas of Eurasia. If the same mutation appeared further to the south, where the winters were short and with little snow, hares with white fur would quickly fall victim of predators. This process took hundreds of thousands of years and was the work of a random series of mutations, and what is even more important, did not have to take place

at all. And even if it happened, the conditions for development may not have been right. In the twentieth century, a great expansion of collared dove could be observed; for thousands of years this dove lived in the Middle East, the Mediterranean area, until the 1930s, when it took a great expansion to the north, reaching Poland in the 1940s, and Scandinavia in the 1950s. Undoubtedly, the condition that enabled the migration of collared dove to the north was some kind of mutation: either increased resistance to low temperatures in the form of denser plumage, or tolerance for other types of food. It is not known exactly, but the fact is that this mutation has enabled this species of pigeon to accomplish territorial expansion.

Getting back to hominids who were organized in small family groups scattered on the vast spaces of Africa, Europe, and Asia, during the period of one million years preceding the creation of man, numerous natural and climate disasters took place, from cooling of the climate to freezing of large areas on the one hand, to drought and desertification of large areas on the other hand.

Hominids, like all living creatures, had to adapt to this. An individual, who as a result of the mutation of a gene responsible for the length of the lower limbs, was born with long legs, longer than other members of the group, was able, with his long-legged offspring, to catch game quickly, and swiftly escape danger. The increased survival rate of the long-legged, even by 1% in each generation, meant that after a few thousand years, the entire population was long-legged, so a new local type appeared. The same process took place during the formation of other physical characteristics. A stocky body and a thick layer of fat under the skin ensured the survival of the individuals in cold climates, and in order to combat great predators considerable muscle strength and thick bone structure were necessary, as in Pre-Neanderthals, and then in Neanderthals. These mutations put individuals with new mutant genes in a slightly more advantageous position and gave them slight, 1 or 2 % better chance of survival than others, and finally accounted for a genetic drift, which, after a few hundred generations meant that

the population as a whole or the major part possessed this feature; it was a racial feature that allowed for optimal existence in a given area. Many of the physical differences of mutations had little effect on the increase of the survival rate, thus not creating genetic drift.

Secondary traits such as wavy, curly, or straight hair, hair colour, light skin pigmentation, or eye colour, so features having no direct impact on the survivorship of individuals had to appear in a very small family group, where the new mutant gene could be duplicated throughout many generations without contact with other family groups.

Many scholars have attributed light skin complexion among Indo-Europeans and Finno-Ugric peoples to the influence of northern climate, the lack of sunshine, and the need to supplement vitamin D deficiency, but apart from Indo-Europeans and Finno-Ugric peoples living in Eastern Europe, for many thousands of years Asia and Siberia as well as the North American Arctic regions have been inhabited by peoples with swarthy complexion, dark-eyed and dark-haired, e.g. Yakuts, Tungusic people, Chukchi peoples, or Inuit among whom neither a tendency for lightening of complexion nor health problems because of the dark complexion of the skin were noticed.

On the other hand, the peoples living in dry, sunny plains and hot, sunny deserts, where the sky was cloudless and the rain fell once a year or once every few years, did not tend to transform into the black-skinned as well. I mean Egyptians, Arabs living for many thousands of years in the Arabian Peninsula, Berber people, and especially Tuareg people living in the Sahara. The most likely theory is that the mutation triggering the dark complexion of the skin, which occurred in prehistoric man, allowed for settlement in dark tropical-forest jungle. The dark colour of the skin, confluent with black background of jungle floor, facilitated the survival and success during hunting. Individuals with fair skin, in turn, had no chance of survival in the jungle, they became an easy prey to predators, and transformed from hunters and gatherers into victims of

predatory animals. Dark complexion enabled human ancestors to colonize new areas of previously inaccessible land.

With the development of human civilization, the mastering of new hunting techniques, bow and arrow, or the skill to start fire, different peoples, not necessarily the dark-skinned ones, entered into the jungle. New skills enabled them to defend themselves against predators and created the possibility of using both the affluence of plant and animal life of rainforest areas.

GENETIC DRIFTS AS A RESULT OF PERIODIC CLIMATE AND NATURAL DISASTERS

Gene mutations are a frequent phenomenon. The most common mutations are lethal, leading to the foetus's death in the womb, and then mutations that cause genetically conditioned diseases. Some pathogenic mutations are repeated with a known frequency, e.g. once every five thousand births, or once every twenty thousand births. Mutated genes harmless to the body function bringing it neither damage nor good. Their existence in the population is random. Their survival or disappearance is a matter of sheer coincidence. The scale of mutations can be observed in our pets, especially dogs and cats, new breeds and varieties of which are being constantly created. Their breeders, after spotting some new gene, e.g. a new shade of the coat colouring, multiply it by inbreeding in close kinship. In nature, with random mating, this new gene would remain hidden or visible only in a very small, isolated, and closely related population. Gene mutations changing a small detail in the anatomical structure e.g. of one's face, framing of the eye, nose or mouth occur in humans as well.

If a new mutated gene is the dominant one when compared to its allele, then all the descendants of the first individual who have inherited the gene will have this new feature. If it is a recessive gene, i.e. inferior to its allele, in a large population of people with free and distant pairs of matching the parents it may

not be seen at all, while it is going to appear at high frequency among children of closely related parents. Simultaneously, such mutations, concerning only physical diversity of human ancestors, which are called the racial differences between people, appeared in very small family groups and were revealed there. Later, a random and extensive climate or ecological disaster must have taken place; it resulted in the death of large numbers of the considered family's countrymen. Under favourable circumstances, several thousand years had passed before the analysed family group, equipped with a new gene, populated the abandoned area. Taking into consideration hundreds of differences visible only within the physical diversity of humankind, including the construction of the skull, its length, height, width, size, the construction of the nose, the forehead, eye sockets, the eye frame, the width of the face, malar bones, the build of the lips, the chin, and the jaw construction, as well as the diversity of the teeth articulation, facial proportions, the build of upper and lower limbs, the chest construction, the luxuriance, distribution and colour of body hair, etc., not to mention the physiological diversity among races mirrored by the susceptibility or resistance to certain diseases, weather, stress, etc., one can say that every tiny feature of racial traits must have formed in the aforementioned series of natural catastrophes and disasters. It is also possible that a new single individual with a slightly different appearance, a result of mutation, was therefore an attractive partner favoured by others during the mating period, thus having a greater chance to have offspring. Zoologists know many animal species the females of which choose the males with specific physical characteristics to father their offspring, and are likely to predict which male will have the best chance of having offspring.

Therefore, the natural differentiation of human ancestors had to last not one hundred thousand years, but hundreds of thousands or perhaps more than one million years. In remote and isolated areas of Eurasia and Africa this diversification ran randomly in different directions. How else can we explain the

differences in the physical construction of breeds such as, e.g. Indo-European and Negroid Mbuti pygmies? This does not mean that man developed one million years ago, but it may mean that the differences were related to *hominid erectus*, or the progenitor of man.

HOMINID HABILIS – an unfavourable mutation

Humans are omnivores, which means that they can eat both plant source and animal source foods. From a biological perspective, however, they are carnivores, a claim that can be supported by the fact that human the body does not produce certain indispensable amino acids necessary for life. Probably prehistoric man, the ancestor of modern man or *hominid erectus* was also carnivorous. This theory is supported by large amounts of animal bones accumulated in caves that for thousands of years were used as shelter. Anthropologists determine that prehistoric men went on animal source foods about two million years ago, and date the distinctive emergence of the prehistoric man, *Homo erectus*, back to about 1.8 million years ago.

Perhaps the population of the progenitor of *Homo erectus*, herbi- and frugivorous *Homo habilis*, the prehistoric man, who inhabited woodland, rich in fruit and plant source food, as is the case with the apes living today: chimpanzees, gorillas, and orang-utans, experienced the occurrence of an unfavourable mutation that prevented the subjects affected by it from the production of all the amino acids necessary for life in the body. Herbi- and frugivorous organisms produce all amino acids necessary for life, and man, and possibly hominid, *Homo erectus*, lacked these properties, probably because they were not able to synthesize the carbon chain and create several amino acids necessary for life, namely, phenylalanine, isoleucine, leucine, lysine, ethionine, tryptophan, and valine, called exogenous amino acids in humans, and a few of which can be found only in food from animal sources. In order to survive, those individuals had to supplement their diet with small animals, and then the

remains of carcasses left by large predators and the marrow from the pipe bones of killed animals.

HOMINID ERECTUS – a primogenitor of humans

A population of individuals affected by this defect had to learn how to hunt, which turned into a phenomenon comparable to the emergence of a new species of prehistoric man, *Homo erectus*, recorded around 1.8 million years ago, who could travel and stay in areas poor in vegetation and fruit, but rich in game that is, dry steppes, savannahs, mountains and cool areas, and finally succeeded in territorial expansion to all three continents. But before that happened, numerous races of *Homo erectus* appeared in Africa; they inhabited different parts of the continent and differed in their physique as a result of genetic drift dependent on local conditions and on genetic variations acquired by particular individuals from the species from which they emerged, namely *Homo habilis*. Africa is a vast and extensive continent surrounded by several huge bodies of water: the Atlantic Ocean in the west, the Indian Ocean in the east, the Mediterranean Sea in the north, and the Red Sea in the north-east. Consequently, it is like a bag, with only two exit routes in the north: in the west and in the east, and about eight hundred thousand to one million years ago, only two races of *Hominid erectus* who lived in the northern part of the continent left Africa. This took place due to voluntary migration or as a result of rapid climate changes. The representative of the “alpha” breed of *Hominid erectus* left to the east, via the Sinai and Palestine, and gradually populated the Middle East as well as southern and eastern Asia, and throughout hundreds of thousands of years created new differing races. He probably took a small part of the genetic material of other races in Africa with him.

The western route, through the Strait of Gibraltar or on dry land, because the strait had yet to emerge, a race or, as some prefer, a subspecies of *Hominid erectus*, pre-Neanderthal man, entered Europe. Despite cold tundra climate and

harsh conditions they settled in Europe, finding numerous herds of animals, which were the basis for their survival and existence. Other races of *Homo erectus* remained deep in African continent and continued their independent development. Discussing the exodus from Africa of only two or partially three races, we analyse the effect of territorial location of those races in Africa, which would confirm the findings of geneticists that the populations of Europe, Asia, America, and Australia are very close, taking into consideration the mitochondrial DNA, and the DNA of peoples from Africa has some fourteen different types of mitochondrial DNA. It is reflected in the history of colonization in the last few centuries. The colonization of North America was conducted mainly by the British and the French, South America was colonised mostly by the Spanish and the Portuguese, so Atlantic nations, and not, for example, by Hungarians and Romanians. The colonization of Siberia was accomplished by the Russians, who bordered with it, not the French or the English, for whom it was distant and inaccessible.

RACIAL DIFFERENCES AMONG HOMINIDS

During the period we are interested in, i.e. between three hundred and seven hundred thousand years ago, hominids inhabited the whole Old World: Africa, Asia, and Europe. Archaeological excavations reveal that they were divided into many races, differing in bone structure, construction and size of the skull, height, the length of limbs, and even diet, because some of them ate mostly meat, while others consumed mixed foods, both of animal and plant origin. The diet resulted in large part from the specific region where they were staying and the availability of different types of food, e.g. it was difficult to obtain large amounts of high-calorie plant food in cold climate.

It is impossible to determine the skin colour or hue of hair among hominids, and whether they were as hairy as some graphic artists present them: hairy ape-men with rather wild, unintelligent, and fairly hostile face expressions. They may

have had rare body hair, similar to modern humans. Unfortunately, this remains unknown, because archaeological sites simply do not provide such data.

Positive MUTATIONS, changing the fate of the species, are extremely rare, a random gift of nature.

GRAND RANDOM GENE MUTATION

This random gene mutation, or rather the mutation of a single gene sequence occurred about two hundred to three hundred thousand years ago among hominids called *Homo erectus*, it occurred in one individual, who luckily survived and left descendants. Fortunately for this gene mutation, the hominid group in which it appeared for a few or even about a dozen generations was not affected by any disaster, such as famine, drought, or some contagious disease. This new mutated gene caused multiple cascading growths of connections between the grey cells of the cerebral cortex in both hemispheres of the brain, as if instead of e.g. an electric counting machine an ultra-modern computer with the capacity of several gigabytes was inserted, so we would call this gene the HUMAN STRUCTURE OF THE BRAIN gene (HSB).

HUMANS

The first specimen with the HSB gene was the first man. He was not much different from other members of the hominid group, among whom he lived, he did not invent writing, or discover mathematics, and his knowledge was equal to the knowledge of other hominids. This can be compared to a modern computer, which has only a few basic data and information. This developed brain was passed to all the descendants of the first man who lived among the hominids, and modern humans inherited it from their parents, in a form probably unchanged since the days of the first man. We do not know whether it was, or is, a dominant or a recessive (retreating) gene or perhaps a gene with incomplete penetration. Regardless of what this gene (HSB) was, it took numerous

generations and tens of thousands of years before the mixed community consisting of mixed individuals, possessing human and hominid gene eliminated the latter one (HOM) gene, proper to hominid brain development.

THE DEVELOPMENT OF A PRIMITIVE HUMAN COMMUNITY

If in a small number of hominids living together there appeared few or more individuals with the HSB gene, or people, they quickly realized that they were the part of the group that understood each other better, in existing situations they drew similar conclusions, e.g. while hunting, gathering edible plants, observing natural phenomena, resolving their emotional problems appearing within a group as well as their own problems. At the same time, other members of the group, hominids, revealed considerable misunderstanding of these issues. The need to exchange thoughts more often had driven non-hominids to speak and to create new expressions and new words. A tendency to speak appeared, and this resulted in the development of a genetic drift of the development of articulators of speech.

Individuals possessing a greater range of words, with larger clarity of speech were preferred in partner selection. Probably, as early as in the phase of coexistence between populations of hominids and humans silly and clever words were created, because such differences were already distinctive and were becoming more and more visible with each generation. It may be possible that the sexologists' theory on the need to change their partner genetically encoded in modern women may result from the need to find a donor with the best genes for their children. Perhaps in the period of the mixed populations and evident differences between the two partners, i.e. a well-performing people with the HSB gene, and hominids with the HOM gene, a genetic drift appeared that favoured women who changed partners in order to give birth to children who would be more resourceful and better equipped such physical and mental health that would satisfy their mothers. Perhaps the gene responsible for that is the one

producing alfaethylamine, present in both genders and discovered in the brains of people who are in the state falling in love. This enzyme remains in the brain from 8 weeks to 4 years, so up to the period that is needed in order to raise a child until she or he moves, walks, and eats on his or her own. The human gene was transferred from the original group to the neighbouring groups of hominids by means of exchanging partners, and since it was a positive mutation, it ensured higher survival rate. This way, in every new group the process started from the scratch, that is, with new generations the amount of HUMAN STRUCTURE OF THE BRAIN gene (HSB) increased.

There is a high probability that the race of hominids, in which this first human gene appeared, managed to significantly expand territorially in all directions, changing the racial nature of large areas. The gene reached remote areas of the Old World in small quantities, and began its march to a local population of hominids, that had not changed its racial nature; it refers mainly to so-called “progenitor” races, such as Mbuti Pygmies, Bushmen, Hottentots, the Andamanese, the original peoples of India, called Indian aborigines, and Veddas, the aborigines of Ceylon (Sri Lanka). Veddas, who are not tall, with very dark skin complexion and dolichocephalic skull, having relatively basic culture and living from gathering; till this day they hunt with bows and spears.

COMPARING THE COMPUTER TO THE HUMAN BRAIN

arises as something obvious. A computer itself, without any software, and with no data entered in it, is of little worth. Further, we know that a normal, healthy born child raised without any human contact, will not learn human behaviour, will not learn to talk, walk, will not be able to understand anything about the world around it. Such a child will grow to be a severe moron; on the other hand, there are numerous examples proving that members of contemporary primitive tribes, subject to early childhood education, graduate from school and even earn university degrees.

THE GREAT MIGRATION OF THE HUMAN GENE

As stated earlier, the HSB gene appeared in one man, accumulated in a small family group, and due to a lucky coincidence had not been eliminated at the beginning of its existence, when the human population consisted of a dozen or so people, indistinguishable in the environment of hominids. It is not known in which race of hominids that gene emerged. Perhaps it materialized in one race living in the border areas inhabited by another race of hominids, and reached the second, where it found better conditions for rapid multiplication. Certainly the race, in which the man had multiplied, made great territorial expansion, but not before they had made one pivotal discovery, namely the ability to light a fire in any place and at any time.

The ability to light a fire in any unfamiliar place, especially at the time of their own choice, protected any wandering group of people against animals known or unknown to them at the time. A seat at the fire was a safe haven. Learning how to start a fire can be compared to the art of building a large boat for an island tribe, an act that opened up the possibility of hiking and exploring the area near the home island as well as distant islands and lands, or to the ability to tame an animal, to mount a horse or a camel, which enabled a population of some isolated desert or steppe oasis to break out into the wide world.

Discovering and mastering the skills connected with kindling fire was the first victory of humanity over a dangerous and hostile world of animals. A victory gave the sense of security and truly protected people against predators, especially hunting in groups. Additionally, it effectively protected well against cold and frost. Hominids, who were ignorant of skills needed for lighting a fire, or merely able to keep it, which was not always successful due to the weather conditions and the need for migration in search of food, did not always succeed, functioned on an animal level of security.

At any time, a hominid camp could be attacked and decimated by large predators. Hominids were a part of the ecosystem, there could be neither more nor less of them in the area, but only as many as nature could feed; they constantly competed with animals in the area. Consequently, hominids spread on all three continents of the Old World for at least one million years. This barrier was finally broken by man, who colonized all continents, including Americas and Australia within merely 150.000 years.

The knowledge of how to kindle fire and the life of the people by the fire as a safe place that protected from wild animals and the night chill, involved another trend of human genetic development that distinguished him from all other mammals, namely:

DEPILATION OR HUMAN BODY DEHAIRATION

The lack of extensive body hair is typical to all human races, regardless of whether their ancestors had lived under the hot tropical sun or in cold areas of the northern hemisphere. Although they live in the tropics, anthropoid apes, closest to humans, are covered with thick pelage all over their bodies, with the exception of their “faces”, hands, and feet. Similarly, no bodily hair loss can be observed in many groups of animals, such as bears: arctic white bears and tropical sloth bears, canids or wolves and jackals, which inhabit areas from the Arctic to the hot climate regions; and felids: the lynxes in the taiga to big cats in Africa, Asia or South America. Today we cannot confirm whether the oldest hominids and then man were hairy, as archaeological and anthropological research based merely on skeletal remains in the absence of soft tissue is not able to provide the answer to this question.

On the other hand, we know that in many species of animals bred by people the individuals with mutations resulting in no coating or extremely reduced pelage appear, such as hairless dogs and cats, but in the wild, there are no hairless apes,

hairless wolves, cats or bears. There is no tendency for any hair loss, so there is no external factor that would be responsible for causing it.

It seems that the factor that could cause the genetic drift of hair loss in human species could be fire. Staying in one safe spot a fire created on day-to-day basis, exposed individuals who were heavily coated, especially children, to burns, illnesses, and even death. Flammability of hair had become a cause of a genetic drift of preference for individuals with barely haired torsos, the increased survival rate of whom in each generation, even by a few parts per thousand, after a few hundred, or even thousands, of generations resulted in dehairing of human body, regardless of whether one lived in the frozen north, or the hot south. We can say that hair loss had affected the whole human race, due to fire, causing the genetic drift towards mildly haired body coexisted with people who were using fire.

Human hair was the outcome of the influence of many genes; one gene was responsible for head hair, other was responsible for facial hair, and yet other was responsible for the hair on the torso and the limbs, and still other was responsible for pubic and underarm hair.

The frequency with which those genes have mutated can be verified by the number of canine and feline breeds designed by people, including hairless dogs and cats. Those dogs are descended directly from wolves, but it is hard to imagine that a Dachshund or a Yorkshire Terrier would follow a pack of wolves in pursue of a deer.

THE RAPID SPREAD OF THE HUMAN GENE

If hominids, just like many other herd animals, including many species of monkeys, had to compete, for example, for leadership in the group, then the “alpha” individual that gained the position by beating his predecessor, gained access to the exclusive food and the right to procreate with all the females in the

group; as the more intelligent one, he undoubtedly gained the position easier. In this case, an individual with the HSB gene, who was the leader of the group, passed the gene on to a number of his descendants, together with still sparse memes of knowledge, such as the ability to start a fire. Additionally spreading of the HSB gene, the human gene, this way would have been many times faster.

As has been said before, humanoids, or bipedal anthropoids, over one million eight hundred and one thousand years spread out on all three continents of the Old World, Africa, Europe, and Asia; during that time they had produced a number of local races and perhaps subspecies, which not always gave fertile offspring with their contemporaries.

We know from history that when two hordes (or tribes) had met and came to fight for rich hunting areas, the defeated horde was killed off, only young females were spared and taken away by the winners. It is likely that the same behaviour characterized early man from 150.000 years ago. Therefore, if the offspring of these women, who belonged to a different subspecies of hominid, was sterile, as it sometimes happens among related animal species, the genes of the hominid population perished forever, and when the offspring were fertile, then the winners' population enriched their genotype, and even changed their racial nature.

An increased survival rate of individuals resulting from the safety that living in the vicinity of fire guaranteed, greater intelligence, the ability to predict weather hazards that was also the consequence of the improved methods of hunting, more effective finding and collecting of plant source food, producing better tools, or more careful care of children, resulted in the increase of the population in a given area, sometimes up to the capacity limit of that particular environment. Then, just like in the present day, any weather disaster, such as drought and the lack of food forced the migration of the whole population or a large portion of the people inhabiting a given area, to new areas, richer in food,

thus resulting in contact with new groups of hominids, which contributed to the further transfer of the gene.

In this respect the primeval peoples differed little from human beings of today. It is known that in the era of European colonialism immigrants from Europe entered in close contact with the indigenous women, even though they came from primitive tribes, and are very different in appearance and the colour of the skin; the natural result of these contacts was a generation of half-breeds.

A primitive tribe of people inhabiting Isla Grande de Tierra del Fuego, a place at the end of the world, so named after numerous fires lit by Indians inhabiting it became completely extinct. They knew no garments, though they lived in a cool, humid, and rainy climate, they did not build houses, ate the fruits of the sea, and defended themselves against the cold by burning large bonfires. The people perished, their culture fell, but their genes, through a few acculturated, Spanish-speaking descendants and half-breeds remained in the communities of southern Chileans and Argentinians living in Isla Grande de Tierra del Fuego. We can speculate: what would have happened if a few white settlers had arrived to Isla Grande de Tierra Del Fuego and had established their animal farms next to the Yaghan Indians living nearby? Then probably, along with the Yaghans and the half-breeds a new society would have been created that would have abandoned their primitive bonfire culture, but would have maintained the continuity of identity and racial customs and beliefs. Although the settlers undeniably would have passed only small amount of their genes to the Yaghans, but they probably would have equipped them with a huge amount of memes, or units of knowledge.

The human gene (HSB) reached the subspecies of *Homo erectus* as well; they were pra-Neanderthals who, as it is known, about five hundred to six hundred thousand years ago split from *Homo erectus*. There is the time convergence between the appearances of the first humans (*Homo sapiens*) in the Middle East about two hundred to one hundred twenty thousand years ago, and the

transformation of the pre-Neanderthal man into the Neanderthal man that took place about one hundred fifty to one hundred thousand years ago. In any case, the Neanderthal man exited in Europe as early as one hundred thousand years ago, and became extinct about thirty thousand years ago.

WE CAN SAY THAT THE HSB HUMAN GENE (human construction of brain) IS RESPONSIBLE FOR THE COLONIZATION THE WORLD. IT AFFECTED ALL OF THE HOMINID SPECIES, OR PERHAPS EVEN HOMINID SUBSPECIES LIVING IN AFRICA, EUROPE, AND ASIA.

THIS MEANS THAT MAN – REPRODUCED AND MULTIPLIED WITHIN HOMINID SPECIES.

AND ALL GREAT HUMAN RACES ARE A CONTINUATION OF *HOMO ERECTUS* RACES.

THEREFORE, AN INDIRECT LINK BETWEEN APES AND MAN THAT IS SO MUCH SOUGHT AFTER DOES NOT EXIST.

Contemporary research on the human genome has proved that about 6% of Europeans, or Eurasians to be precise, possess between 1 and 4% of the Neanderthal genes. In Asia, in the Denisova Cave, the Altai Mountains, the remains of the hominid called *Homo Denisova*, were discovered. The genotype of this hominid did not match the genotype of modern man or the genotype of Neanderthals, but it turned out that 10% of Melanesians were equipped with between 1 and 6% of *Homo Denisova* genes. What turned out to be even more surprising finding was the discovery of the Y chromosome that defined the male gender of Albert Perry, an Afro-American that passed away in South Carolina in 2013. The gene discovered in his DNA was 150 thousand years older than the Y gene present in modern people.²

² Max Planck Institute of Molecular Cell Biology and Genetics

The examination of the human genotypes in Cameroon has revealed that in one of Cameroonian villages, the same from which Albert Perry's ancestors came from, there lives a group of males with a similar Y chromosome. It confirms the claim that modern people interbred with other lines of *Homo sapiens* or *Homo habilis*.³

When the population reached its critical point, and the group of humans outnumbered the group of hominids, the latter ones were pushed to the fringe of social life as the less developed ones, and finally disappeared.

If we were to assume that the human race was created and further reproduced on its own, treating hominids as an alien animal species, the question arises why hominids did not survive to the present day, or at least to the early historic times, since so many species, including four species of great apes: Borneo orang-utans, gorillas, chimpanzees, and bonobos in Africa did.

IF we assume that the human species were created one hundred to one hundred and fifty thousand years ago, as many scholars believe, and that during that period through various mutations had developed on their own races as numerous and differing as fair-haired and red-haired Europeans with blue eyes, very short pygmies, Bushmen with steatopygia, i.e. the accumulation of fat on the buttocks and very elongated heads, the Hottentots with their skin wrinkled due to lack of connective tissue in the skin, end-on-end hair on their heads, and hottentot apron in women, that is, the inner labia of up to 20 cm long, not to mention the differences between major black races of Africa, and the yellow ones in Asia. This raises the question why American Indians, who came to America through the Bering Strait between twenty and thirty thousand years ago, and whose ancestors for tens of thousands of years had previously lived in east Asia and north-eastern Siberia, did not develop any mutations in human appearance. Despite the fact that all climatic zones are present in the Americas, from icy

³ Laboratorium Family Tree DNA. Research of dr Michael Hammer from Arizona University in Tucson

Arctic, to the tundra, temperate zone to the tropical climate, and there are also deserts and high mountains, there are no known Indian tribes that would be lightly pigmented and blue-eyed or darkly pigmented with woolly hair. American Indians lived for millennia in small family populations that were isolated. If we assume that the process of random, uncontrolled mutations in the construction of a man that had a chance to appear, takes place quickly, we would have a number of new human races in America that would have occurred in the period of twenty to thirty thousand years. However, this did not happen. In order to achieve racial diversity of humanity even the period between one hundred fifty and two hundred thousand years long seems too short. American Indians represent a racial type corresponding to the four old Chinese races. Approximately 50% of Indians are carriers of Diego antigen system in their blood, a feature commonly found among Asians in the Far East, and absent among Europeans and black races in Africa.

Some geneticists, drawing on the tests of mitochondrial DNA, which have remained unchanged or almost unchanged for thousands of generations, state that all humans descended from one “mother Eve”. However, it seems that mother Eve was the mother of HOMINID, *HOMO ERECTUS*, and from biological point of view, MAN as well.

The question of who at the lottery of life had been fortunate enough to win the HUMAN GENE, whether it was a woman or a man will probably remain unanswered forever.

NEANDERTHALS

Homo neanderthalensis, Neanderthal man was named after the Neanderthal river in Germany, in the valley where the first human bones that were not the bones of modern humans were found. Neanderthals lived in Europe before modern humans, between one hundred thousand and thirty thousand years ago. Contemporary man appeared in Europe about forty thousand years ago, so both

types of people lived together for about ten thousand years. The first modern humans in Europe became known as Cro-Magnons, after Cro-Magnon cave in France, where their remains were discovered for the first time. Tools which they used as well as wall paintings suggest higher development of civilization in comparison to Neanderthals. Ubiquitous and restless, Cro-Magnons used bows, spears, and traps to hunt and catch fish. Neanderthals for generations inhabited the same caves and did not stray too far from their permanent residences, and used their strong bodies and powerful muscles in close combat with prey, as evidenced by numerous traces of fractures and bone defects. It is highly probable that these two subspecies of humans, *Homo sapiens* and *Homo neanderthalensis*, crossed one another's paths during the ten thousand years when they lived in Europe together. Modern man had entered Europe forty thousand years ago and had spread from the south-east to the west, and Neanderthals retreated to the west, and became extinct in Spain thirty thousand years ago. Some scholars, assuming mixing of the two populations, Neanderthals and Cro-Magnons, notice the similarity in morphology of the mandible. In most Neanderthals the opening of mandibular nerve canal was covered with a large bony lamina, in the form of a small bridge. It occurred in about 44% of the Cro-Magnons of late Paleolithic Age, and later in the Paleolithic and Mesolithic Ages, in the early Europeans, this feature appeared less and less frequently; now it has fallen below 6%.

Perhaps the prominent noses of many Europeans constitute another feature inherited from Neanderthals, since the characteristic prominent nose is also commonly found in bone material of late Europeans.

Construction of the occiput

Neanderthal skulls were characterized by the occipital protuberance. Similar tuberosity, although somewhat less pronounced, occurred in the early Europeans from the time when the Neanderthal population in Europe had already been extinct. The evidence of contacts between the two subspecies of humans can be

found in excavations in Spain as well as in Palestine and Asia, these are the bones of intermediate forms between the two subspecies. Perhaps genes and racial type of Neanderthals had been transferred to us, the people of Europe, via a few individuals of mixed origin, and blurred in successive waves of modern people coming to Europe from the East, *Homo sapiens*. Thus the question arises whether strongmen by birth occurring sporadically in Europe, with strong spines, thick bones, strong muscles and strong articular ligaments are the result of the encounter of wandering and dispersed Neanderthal genes.

IS THE RH NEGATIVE GENE THE LEGACY OF THE NEANDERTHALS?

As a result of Cro-Magnons and Neanderthals' relations, a Cro-Magnon woman with Rh gene could give birth to many healthy children, Rh gene negative, and the mitochondrial DNA was like that of Cro-Magnons, or *Homo sapiens*. When Neanderthal women gave birth to children with Cro-Magnon men, such children were also Rh gene negative, but because of the serological conflict between the mother and the foetus, all subsequent pregnancies as a rule ended in miscarriage. Studies to date have shown no Neanderthal mitochondrial DNA in modern Europeans. Perhaps it is a matter of time and the extent of the research.

The question is why this is the case; if Rh negative blood subgroup had been passed on to us by Neanderthals and is found in between over a dozen up to thirty per cent of Europeans, then what happened to other Neanderthals' genes? Probably they dispersed among numerous peoples coming to Europe. All people in the world can be divided into those who possess Rh blood group factor, so they are Rh positive, and those who do not have this factor in the blood, and are Rh negative. Since every individual obtains half of the genes from the mother and half from the father, then when both parents give their child the Rh gene, she or he is marked as Rh + (positive), as serological tests confirm the presence of Rhesus factor in the blood. Such person is called homozygous for the Rh gene

(DD). Similarly, if two parents have given a gene (an allele) that does not cause the formation of the Rh factor in the body, then their child is also homozygous, because she or he has two identical alleles of a gene that does not produce the factor, and she or he is marked as Rh - (dd). However, if one parent will transfer the Rh + gene to the child and the other will transfer the Rh - gene, which is a gene that does not produce the factor, the gene is mute, the child will be marked Rh + as well, but she or he will be heterozygous (Dd).

In modern Europe there seems to be a balance between the Rh + gene and the Rh - gene; it results from culture, customs and religious behaviour. A woman who is Rh positive (DD) or homozygous, with her husband, also Rh positive (DD) or homozygous, gives birth to children that are also Rh positive (DD), the carriers of double Rh gene received from their father and mother. Similarly, if both parents are Rh negative (dd), i.e. have a double gene Rh negative (dd), then all children are Rh negative (dd), and have one gene from the father, the one from the mother. When the mother is Rh positive, but is heterozygous, that is has two genes: Rh positive and Rh negative (Dd), then, statistically speaking, all children born with a father who is Rh positive (DD), will be Rh positive, but half of them will carry Rh negative gene. If the father of the children was a man who would be heterozygous, just like the mother, statistically, one quarter of children would be homozygous Rh positive (DD), half of the children would be heterozygous Rh positive and Rh negative (Dd), and one fourth will be homozygous Rh negative (dd). If the father of these children was a man of Rh negative (dd), homozygous, then half the children would be Rh positive heterozygotes (Dd), and half homozygous, Rh negative.

In the last version, when the mother is Rh negative (homozygous), and the father Rh positive (DD), homozygous, the foetus receives the Rh gene from the father, which causes serological conflict the mother and the foetus. This leads to the birth of one child who is Rh positive (Dd), heterozygous, and the Rh gene carrier. Subsequent pregnancies end in miscarriages, as a result of the

serological conflict between the mother and the foetus, who is the carrier of the Rh gene that she or he received from the father. Such marriages tend to have one child.

The above, idealistic, scheme presents constant and balanced percentage of Rh positive and Rh negative genes. Modern European populations do not reveal any influence of Rh positive and Rh negative genes on human existence in terms of the quality of life, health, or morbidity and mortality rates. Therefore, they do not form a genetic drift increasing or decreasing the amount of any of these genes in the population.

But it was not always this way. In prehistoric times, women of hunter-gatherer peoples moving over large areas of Europe that were Rh negative and had no children who could walk away from her partners-husbands. Furthermore, they could be abandoned or sent away by those partners/husbands, thus being able to enter into relationships with other male partners. Another possibility is that procreation in general was rather chaotic and quite spontaneous. Then each woman who was Rh negative, apart from one RH positive (Dd), heterozygous, child could give birth to many children who were exclusively Rh negative. This way the number of Rh negative individuals increased with each generation. This custom genetic drift survived the influx of the Mediterranean peoples, from the south-east as well as the great migration of peoples.

The Rh negative blood subgroup is so interesting as it occurs in all European nations, for example, among the English, the French, the Danes at about 15%, the Germans, the Dutch, Italians at about 14%, Norwegians, Latvians, Russians 13%, and about 17% of Poles. The lowest percentage in Europe, about 4% of the state's population, inhabits Sardinia, Italy; the ancestors of the inhabitants came from North Africa. The highest percentage of RH negative gene, 30% of the population, is found among the Basques, a small nation living in Spain, in the eastern Cantabrian Mountains.

Among other races and on other continents this gene does not appear at all or is present only in trace amounts.

A few per cent of the Rh negative gene present among black population in Africa can indicate some old relations with the Europeans in historic times, namely five thousand years ago or even earlier. It can also demonstrate contacts with Neanderthals, or even pre-Neanderthals, who parted *Homo erectus* as a subspecies about 500 thousand years ago, and lived in North Africa. Similarly, a few per cent of the Rh negative gene occurs in Asian nations, between 0 and 1% of the Chinese people, which may indicate human beings entering into relations with this subspecies, since it appeared in Asia and the Middle East, though the principal mate is considered Neanderthal identified in Europe. The trace presence of the Rh negative gene among the Chinese can also be associated with Tocharians, an Indo-European fair- and red-haired people, who were the only ones that went east and settled on the fringes of the Karakum Desert, and for next 2000 years had been in contact with the Chinese peoples. By contrast, the Japanese, and New Zealand Maoris, as well as the Aborigines of Australia have zero percentage of the gene.

At a time when Cro-Magnons and Neanderthals met, i.e. 30 to 40 thousand years ago, Europe, had been a cold and tundra continent. Its northern part and the Alps were covered by ice sheets. Probably climatic conditions did not encourage large groups of *Homo sapiens* to settle in Europe at that time. Thus, Cro-Magnons and Neanderthals may have been destined extremely long-term, 10-thousand-year, proximity during which Cro-Magnons, standing on a higher level of civilization, partially absorbed and partially pushed Neanderthals to less favourable conditions of life, in which they gradually became extinct. Perhaps a population that was created could be the equivalent of French Metis in Canada, the descendants of the first trappers and explorers of wild, unknown, and vast forests with dangerous, bitter climates, who learned about the land through contact with a few and scattered tribes of Native American Indians, and took

Native American women as their wives; it could also correspond to the Brazilian caboclos/cabocos, the descendants of Portuguese explorers of the interior and Indian women. Modern man entered Europe from the east; the ones who reached the furthest to the west, that is the area of France, were Cro-Magnons with low and wide skulls, prominent malar bones, sunken eye sockets, and a fairly robust figures; their bodies bore certain distinct differences from those discovered at the seats further to the east, namely, at the seats of the Czech-Moravian remains of Stone Age people, who were of more slender built and had narrow and elongated skulls.

It is difficult to determine today whether early Europeans of Lower Paleolithic Age were a population of European metises, who blazed tough tundra trails for further expansion of modern humans.

It could be that larger groups of Cro-Magnons immediately started towards Europe, and they had difficulty adapting to the climate that in comparison to the condition in the Middle East was cold.

In the Neolithic Age, that is the period that began around 8300 years BC, after the end of the last glacial period, the climate of Europe slightly warmed and became similar to that of today.

At that time new peoples of North Africa started to pour into Spain, France, and Britain. Central and eastern Europe became inhabited by peoples of Laplandish type. The peoples of Asia from the southeast started their expansion to the coast and the islands of the Mediterranean Sea, and later a great wave of migration of Aryan peoples, namely the Indo-Europeans from the steppes at the border of Europe and Asia started. In historic times the European continent had witnessed invasions of Indo-Iranian Scythians, Sarmatians, as well as Turkish-Mongolian peoples. All of those peoples, overlapping one another, absorbed the original Paleolithic inhabitants of Europe, entirely blurring potential Neanderthal genes.

LANGUAGE

Man is a social being, which means that he is born among other people, is brought up and educated among them, he develops and lives among other individuals similar to him. This coexistence had become the source of the creation and the development of a special means of communication, namely language. Naturally, in addition to language, there are various other means of communication, such as light signals in traffic, car trumpets, whistles in sports, special military or sailing alarm systems, etc. None of these secondary and ancillary modes of communicating can be compared with such a unique tool as language. It fulfils an important uniquely human life function, namely it enables people to express verbally and communicate to other people their observations, feelings, and thoughts. All mental processes take place inside a human being, in the brain centre. In the history of humankind, language was a type of driving force that helped people to identify themselves and distinguish from the animal world, join into groups, lead an effective fight against the forces of nature, and consequently achieve the level of culture, science, and technology that we can observe today.

The path from the original source of language to fully formed national and tribe languages, the number of which is currently estimated at three thousand, was extremely complex and very prolonged. The formation of language dates back to about two hundred thousand years ago. This unimaginable distance illustrates the extent of the evolution particular languages existing today had undergone.

People now use numerous languages belonging to various so-called linguistic leagues, e.g. a group of Sino-Tibetan, Uralic, Altaic, Hamito-Semitic, or Indo-European languages, just to mention few of them.

Although particular languages within the league may vary and sometimes be mutually incomprehensible, in terms of their basic words they all possess a certain archaic basic core, on the grounds of which we can say that these

languages are derived from a common stem. Languages differ not only in the number of vowels and consonants, including the absence of certain consonants and vocabulary, but particular language leagues differ in grammar and logic of building sentences; we can tell a different philosophy of language. It is hard to believe that the Indo-European languages and, for example clicking-smacking Khoisan languages come from the same most basic root. It can be assumed that the first people from the above-mentioned two leagues created the first words of their languages under different conditions in different natural and territorial environments, and above all in different sound settings, which certainly must have had an impact on the first articulated words.

AN EAR FOR MUSIC

The spatial imagination gene and a musical ear could be developed and formed in individuals within a given population living in certain geographical and natural conditions, namely in the territories with e.g. small rock formations, with lush vegetation, where the visibility was very limited to a dozen or so meters. On the basis of sounds that could be heard, e.g. animal noises or steps, an individual had to determine whether the sound he heard heralded the presence of a predator or prey. Spatial imagination genes in turn allowed to judge the distance of the animal, its position, and the speed with which it moved, and to make instant decisions about their own rescue or hunting for prey.

The members of the population living in such area that lacked good hearing and spatial imagination, and thus lacked fast, good judgment certainly fell victim to predators more frequently than individuals having this genetic ability. In this case, the genetic drift that appeared eliminated from every generation a portion of individuals not adapted to live in this specific territory.

In populations living on the vast flat plains and semi-deserts such abilities were not needed, game animals or predators were visible from afar. What mattered were fairly good vision, fast running ability, and physical endurance. Genes for

good musical hearing and spatial imagination existed in the population, but their frequency neither increased, nor decreased.

The development of language abilities together with music skills possessed by individuals triggered the process of expressing various emotional states through songs, often using primitive musical instruments.

MEMES

A meme is a unit of knowledge difficult to determine exactly and precisely, e.g. we can assume that the knowledge that an angler has on fishing, the species of fish, types of bait, fishing sites, the best time of day or year, the best type of equipment used, etc., all the volume knowledge is one meme of knowledge that is thematically limited and coherent. Intelligent and educated people have in their brains-computers tens of thousands of such memes of knowledge introduced during the process of upbringing, school education, and the development of individual interests. People deprived of education and interests possess considerably smaller amount of these memes, similarly to as the members of isolated wild tribes.

GENES

Man is guided by genes. Man is born blessed with a set of genes, in which all his physical, physiological and psychological features are encoded. It is genes, their sequences and combinations that determine the diversity of peoples' characters, personalities, temperaments, mentalities, flaws and virtues, their senses, instincts, beauty, ugliness, design, and appearance. A person, due to random and accidental mutation of one or more gene sequences, determining a cascade increase of connections between the brain hemispheres, got a great opportunity of mastering the skill of linking various facts and abstract thinking, a skill that was unique and unprecedented in the animal kingdom. Only this one gene, called HSB, the gene of human structure of the brain distinguishes man from other creatures. The remaining genes that condition an individual's physical structure, physiology, impulsive behaviour, emotions or memory are common to the whole world of animals, including humans. One can say that all basic life functions common to man and the most primitive living creatures, and these drives are conditioned by the presence of specific and manifold genes.

The instincts without which life could not exist include:

the drive to breathe,

the drive to drink - thirst,

the drive to eat,

the drive to reproduce,

the drive for a sense of security.

Throughout human history these fundamental and unconditional drives, present in every human being, have been and still are used for various purposes, because of their fulfilling conditions the survival of an individual and the whole species.

So they have been used for social, political, and other purposes.

Let us discuss them one at a time:

THE DRIVE TO BREATHE

As it is commonly known, the vast majority of organisms living on earth in order to survive need oxygen they take from the atmosphere or water. The impulse to breathe is very strong, in fact depriving the body of the sufficient amount of oxygen leads to prompt death. The fight for air is then the struggle for life. Air contains the level of oxygen adequate for human needs, and is available to all, without any restrictions. People take it up involuntarily due to an unconditioned reflex. So far, as far as I know, the drive to breathe has not been used for social or political purposes, because of the vast availability of air. Places where people may run out of oxygen are artificially created, because of the humans' wish to control habitats previously inaccessible to them, such as deep seas or space, barring deliberate criminal poisoning of the air with various gases. This drive has not been used for social or political purposes; however, it is difficult to exclude the possibility that in the near future, in space colonies, on artificial satellites it can be used by the administrators of oxygen to exert pressure on the governed.

THE DRIVE TO DRINK – QUENCHING ONE'S THIRST

Water is the environment necessary for life of all living organisms. Life developed in water and from there it gradually spread over the terrestrial environment. Every organism carries a piece of the ocean from where it emerged. Thus, the access to drinking water is for humans as important as the access to air. Drought or dehydration can cause disasters on the scale of a country as well as a single body. Both the excess and deficiency of water has always had a negative impact on the environment. Around the world, there are areas where water is scarce and needs to be artificially supplied. What is worse, even in countries within the temperate zone, such as Poland, the problem of

water scarcity becomes an issue. In areas where water supply is a problem, and water has to be rationed, sooner or later some powerful elite raises and through the distribution of life-giving water this group impacts the social and political life of the governed population. On the other hand, this drive could have a serious impact on human ingenuity in solving the problem of water scarcity. It can be illustrated, e.g. by systems of irrigation canals supplying the neighbouring fields with water; these canals were first constructed in Egypt, on the Euphrates or the Indus.

THE DRIVE TO EAT

is another very strong impulse common to all animal organisms. The social meaning is the need to satisfy hunger, to secure the food in the form of various food sources, such as arable land, pastures, wildlife hunting grounds or fisheries. This drive has been the cause of wars and distant migrations of tribes and peoples since the beginning of humankind. In animals, it is expressed through eating, killing, and stockpiling of food. In humans it has developed quite extensively, and has been expressed through soil conversion, influencing wildlife, deforestation, drainage of wetlands, creating several hundred hectares of crops. We can say that the need to secure the food supply, thus securing this drive, contributed to reshaping the face of the earth. Additionally, modern human beings have been shaped by a particular diet, including new foods, and centuries-old habits and impulses, as well as the ability to adapt to the consumption of products available at the moment. As in the case of water, currently there are areas with a great shortage of food, while the developed countries experience food surplus. This raises the possibility of using this drive for political and economic reasons.

THE DRIVE TO REPRODUCE

The drive to reproduce is the only impulse conditioning survival, not so much of a single individual but of the whole species. In the past, it was used by various

cults and religious movements that imposed various bans and orders on their followers. Most often it amounted to the government of souls, as well as having real impact on politics. Nowadays, it appears to be one of the most controversial elements of politics, political parties, and ethics. Two aspects of human life meet here: sex and procreation. Do they constitute a unity, as some people want, or are they separate, as want others? In the animal world there is no such a dilemma, as those two aspects are for sure one, perhaps with the exception of bonobo apes that have sex immediately after meeting, “all-with-all”, as well as to resolve the conflicts in the shrewdness.

THE DRIVE FOR THE NEED OF SECURITY

The drive for the need of security is manifested in all living animals that respond to life-threatening situations with fight or escape to a place where they feel safe and where they can easily carry out the four aforementioned drives: to breathe, drink, eat and reproduce.

The drive for the need of security among people is definitely manifested in various modes and is carried out in in a different manner by particular individuals and on the level of the whole human population. It took different forms during the hunting and gathering period, another in antiquity and the Middle Ages, and still another today, but it has always been rooted in the ways of our animal ancestors and is executed by the set of genes conditioning certain instinctive behaviours, such as:

the gregarious instinct,

the power-domination instinct,

the instinct necessary to submit to the authority,

the instinct of ownership.

THE GREGARIOUS DRIVE

occurs in many people, especially those who feel good in groups and need contact with other people with whom they come in numerous associations and social systems, conduct frequent conversations, like to celebrate and participate in the customary celebrations.

The gregarious drive is conditioned by a gene or a set of genes; let us call it the GR gene. Probably it has numerous sequences that to various extents condition the need to live in groups, from the constant presence of other individuals, to the need for frequent contact, to occasional meetings. People with a weak influence of the GR gene are called loners and those with no influence of this gene are called recluses. The amount of this gene sequences is spread differently in various populations; it is illustrated very well among the peoples of Africa, e.g. Shona people living in Mozambique and Zimbabwe, function in settlements with scattered buildings, similarly to the Tsimihety people, a Malagasy ethnic group, living in Madagascar. The Mandinka people of Tanzania or the Nupe of Nigeria lead markedly different lifestyles, as they live in large densely populated villages. We can say that Shona and Tsimihety are probably equipped with the gregarious gene sequence conditioning the average need for residence in constant company of many fellow members of the tribe, while the Mandinka and Nupe are equipped with the type of the gregarious gene that determines the need for permanent residence among a large group of people. Similarly, in various European countries, apart from large cities and large villages, we can come across very small or private lonely farms that for generations have been functioning this way; their number increases as we moves northwards, chiefly in Scandinavia.

Nevertheless, it does not mean that large cities are inhabited only by sociable individuals, who are fond of company, are constantly accompanied by numerous friends and willingly and spontaneously take part in cultural and public events in their towns or neighbourhoods. Apart from them, large urban agglomerations are inhabited by people with average or even small need to live in groups.

They have a weak gregarious gene. They live surrounded by their families or very small circles of friends, preferably on the outskirts of the cities or in residential neighbourhoods. Their ancestors or they themselves moved to urban areas because of economy, in order to find a job, and need for security.

This is obviously a very simplified presentation of gene diversification of urban society referring to only one single gene, the gregarious gene.

The gregarious drive can also be observed in animals. Some animals live in groups of several hundred or even several thousand individuals, with no clear hierarchy. But there are other animals living alone that do not have a gregarious instinct and gather in groups only if at some point in time there is an abundance of food in a given place, e.g., bears in Alaska during the salmon spawn, when the fish are swimming in dense shoals up the river.

THE DOMINATION INSTINCT

or power (or the need for power) has been commonly found in human populations, both in civilized and primitive groups.

History provides plenty of examples of this feature, and not all of them deserve recognition and eternal glory. In fact, this type of instinct may result both in actions that are socially acceptable and there are those that have been degenerated and then we say that a person is obsessed with power and is willing to obtain it by hook or by crook. The domination instinct is reflected in its fullest in the history of numerous wars initiated for various reasons, often trivial ones, but invariably the price of those conflicts was human tragedy. Because of its dramatic nature sometimes this instinct becomes the inspiration for many works of literature, e.g. William Shakespeare's oeuvre.

The domination instinct, in turn, leads among some animals to a strict group hierarchy e.g. in a pack of wolves the alpha pair is not only the first to eat the

prey hunted and killed by the pack, but also is the only one that can have offspring.

The instinct for domination is probably the outcome of many genes and is associated with the instinct of possession, and they both are connected with the drive for the sense of security. Dominance provides access to food, reproduction or one's own territory and creates the atmosphere of security.

THE INSTINCT OF OWNERSHIP

reveals itself in many animals in the form of, e.g., the seizure of a given territory or the possession of "it's my bone" type, i.e. one that cannot be taken away. This instinct is also visible in many children, even very small ones, who have their own toys, and are not willing to give them away to anyone.

The next instinct that has a significant impact on social behaviour of humans and animals is:

THE INSTINCT OR SEARCHING FOR AUTHORITY

manifests itself in early childhood, when the mother, and later on both parents constitute absolute authority. As early as childhood, the instinct for domination or the instinct for power reveals itself. Children displaying strong instinct for power sometimes try to impose their will on their parents. Rarely, the instincts of power and authority are manifested in their extreme forms, e.g. are very strong or almost absent. Frequently, the two instincts exit together and their different degrees are visible one person; let us call them X. X carries out their instinct for authority at work: they are nice, syntonio, look up to their superior as the wisest of all people. X's instinct of power is displayed at home with their spouse (partner), children, when they try to impose their views on various, not only domestic, affairs. A person with a strong instinct or need for authority and a strong need to dominate, which for various reasons cannot be carried out in the form of exercising any form of government, fulfils themselves as an individual

yearning for general acceptance of their actions, ideas, beliefs, and expressed opinions.

A person with a strong instinct of power and very low need for authority tries to be the dominant party in all circumstances. At work, at home, in social situations they usually express their own opinion on any subject. If this is a person with a low IQ, i.e. not very intelligent, frequently it results an individual who is at loggerheads with everyone else and who express views and opinions that frequently do not correspond with the facts.

A person with a very strong instinct of authority and weak instinct of dominance willingly subjects themselves to authority not only personally, but also religiously. This authority may become an ideology itself, a philosophical system or even systematized metaphysical convictions and beliefs. Utter submission to authority and views, can be used to spread indoctrination, fanaticism and populist visions.

If people acted only the way they were genetically programmed, they would have to deal with pure biological determinism, but fortunately it is not the case. Human behaviour is corrected by the human mind, human life experiences and goals to which people aspire.

THE SOCIAL GENES

Some genes (groups of genes) significantly influence individual group behaviour as well as whole human history. Several of these genes can be called “social” genes. Undoubtedly, they include the following:

The IN gene (the inwardness/inbound, towards oneself),

The NS gene (the novelty-seeking gene),

The PM gene (the physical mobility gene),

The AI gene (the gene to avoid injury),

The G gene, a general factor of cognitive abilities (mental acuity).

The IN GENE (inwardness) conditions an individual's commitment to his or her family (not to be confused with xenophobia, or aversion to strangers), village, town, district, region, country, state, language, culture, or religion. Depending on the potency of the gene (it probably has several sequences) people are patriots, nationalists or chauvinists. This also applies to other areas that people consider important, belonging to them, e.g. religion. Additionally, certain gradation of a given emotion is displayed here, from attachment to religion, to deep experiencing of religion, to religious fanaticism. People lacking the inwardness gene or with an inactive sequence of this gene are not attached to anyone or anything, they feel good everywhere, quickly adapt to new customs, language, surroundings, and environment. They never miss what they left behind. They are true cosmopolitans.

The inwardness gene commonly occurs in people of all nations, ethnic groups, and communities. It seems that the less numerous the nation, the more frequent the inwardness gene.

It is particularly strong among some groups of Romany peoples, among the followers of certain branches of Judaism, such as the followers of Hasidic order or American Protestant Amish group.

These communities cultivate their own customs, ways of life, dress code, and languages; they are passed down from generation to generation, taking only a little from the surrounding world, or taking only what is not in conflict with their own customs, beliefs and traditions, and the world around them has only small impact on their existence.

The history of nations and peoples may shed some light on the concentration of certain genes in different nations. In 539 BC, at the instigation of the prophet Ezekiel, led by the high priest, Joshua, only few returned from the Babylonian captivity (about fifty thousand Jews). Most wealthy Jews remained in Babylon

on the Euphrates. Those who returned to the destroyed, desolate, and desert land of their ancestors to rebuild the holy city of Jerusalem and the destroyed temple had to have a large concentration of high levels of the inwardness gene that influenced the whole subsequent history of the Jewish people. We may say that they saying that every child born to a Jewish woman is Jewish, has its roots in the Babylonian captivity as well. Then, the father of the child could be, e.g. a Babylonian supervisor.

THE NOVELTY-SEEKING GENE

The D4DR dopamine receptor gene that has recently been discovered by Israeli scientists and its existence was confirmed by American scholars was called the novelty-seeking gene. It can occur in various sequences, from the long to the short ones. Individuals with a long sequence of this gene are genetically encoded as true seekers of new products, new impressions, experiences, and strong emotions. Novelty seekers are bored by repetitive actions, uniforms, jobs with predictable courses of action and outcomes, the monotony of domestic life and family.

The novelty-seeking gene manifests itself in different ways and depends on many factors, including intelligence, education, the presence of other “social” genes, financial situation, and social status as well as living in a particular socio-political system.

Among those endowed with a long version of the D4DR gene we can find inventors, explorers, genuine scientists, the initiators of numerous projects, achievers in business, the architects of new ideas as well as thrill-seekers in extramarital sexual relations. We should not confuse the latter with sex addiction, occurring regardless of the length of the D4DR gene. On the other hand, people with short version of the D4DR gene often are level-headed citizens, solid husbands and wives; if they are educated they are good and reliable mid-level employees or even members of senior management in

companies. Marital sex is a pleasant duty for them; they are not thrill-seekers outside the family.

As for the aforementioned tribal communities, such as Romany, and religious groups, such as the Amish, in addition to the above-described inwardness gene, the shape of these communities has to be conditioned by a very short version of the novelty-seeking gene, or the lack of interest in the surrounding world and minimizing the necessities of life. What we have come to know and learned about oneself during their childhood and youth, one's tribal customs, material conditions and ways of life, with no need to change, is believed to be sufficient for life.

THE PHYSICAL MOBILITY GENE

Children who possess this gene cause numerous problems at school, as they are constantly fidgeting, drumming their fingers on the desk tops, sometimes rhythmically stamping their feet; they are unruly, but that does not necessarily mean that they do not pay attention. Most children who behave this way are intelligent, and possess the long novelty-seeking gene, and simply find lessons boring. People who possess PM gene are always on the move, they walk a lot, women always see to their household, and frequently repeat many routine activities. Similarly, men can never stay in one place for too long. People with the PM gene choose careers that put them on the move, they have to be a part of this movement; they become letter carriers, businesspeople, or office assistants rather than girls in the information office.

We can see whole groups of people equipped with both a high and a low version of PM gene, e.g. we can find entire villages consisting of hundreds of homes the streets of which become extinct in the afternoons, after work everyone stays at home. At the same time, other villages with the same number of residents, but possessing high PM gene and are full of life. Usually, the streets are full of people, children play around, and men chat.

THE AI GENE TO AVOID INJURY, serotonin transporter gene

Avoiding injuries is a complex trait, which consists of: anxiety, depression, fear, hostility, shyness, inhibition, and fatigue. The high version of the avoiding-injury gene, manifested by depression and anxiety, has an impact on an individual throughout their lifetime, but the high version of the avoiding-injury gene, or depression and anxiety in a hereditary ruler with unlimited power has an impact on the history of the country, the nation and often the world history. The same can be said about the influence of other “social” genes, and even more on their combinations occurring in one individual.

THE “g” GENE general cognitive factor

There are many different tests for measuring intelligence quotient (IQ), but most commonly the following skills are measured:

- perception and visual and spatial intelligence,
- verbal or communicative skills,
- logical thinking and mathematical intelligence,

and practical intelligence.

Apart from these, a person is also endowed with other special abilities, such as musical, artistic skills or photographic memory. In the realm of these four basic domains of intelligence there are significant differences between various people, e.g. some individuals may have mathematical abilities, but may lack in volubility, or the easiness to express themselves and the other way around, a person who demonstrates ease in verbal communication with others, may not have mathematical talent. However, the analysis of thousands of IQ tests has revealed that people with outstanding talents in any field, with a high level of g, the general cognitive factor or the inherent cognitive acuity, usually do well in other areas, and people who are not very capable, very rarely become prominent in some isolated area.

As has already been said, as the result of the research on intelligence quotient (IQ) the g factor, the factor of mental acuity, was revealed; it determines an individual's high or low IQ score, which can be slightly calibrated upwards by the occurrence of special abilities. G factor of mental acuity is fixed, innate and unchangeable, and its level is an individual characteristic of each person. The question is whether mental acuity g factor, which is the base level of innate human intelligence, is not an indicator of the gene of human structure of the brain (HSB), for what differs humans from animals, if not high intelligence that allowed humans to assimilate tens of thousands of memes of knowledge and on this basis create material and spiritual cultures.

So far, no one has managed to examine the manner in which the level of innate intelligence, or mental acuity factor, is inherited. It is known that not only parents, but also their children, siblings, often differ from one another in sharpness of mind and different talents. Only identical twins have identical or very similar intelligence quotient (IQ), even if they are brought up from infancy in different environments and in different surroundings. Approximately one hundred identified genetic factors can cause the decline in IQ. Apart from these, among the obvious negative effects are brain injuries associated with the history of potential utero-poisonings, infections, and perinatal brain injury.

We should also consider some combinations of “social” genes, found among people in their milieu and the above-mentioned instincts, namely the domination instinct, instinct of the need to submit to the authority, the gregarious instinct, the instinct of possessing (ownership) and the genes: the novelty-seeking, the inwardness gene, the physical mobility gene, the avoiding-injury gene, and the factor g gene – mental acuity factor.

Taking into account only the two extremes in the above-mentioned various instincts and genes, e.g. strongly expressed domination (need for power) instinct and a total lack of this instinct, only within instincts themselves twenty-four combinations are possible, and forty possibilities within genes, which gives

a total of nine hundred sixty combinations of only the extreme forms. [Because] people in general tend to have numerous intermediate forms of expression of these genes and instincts, resulting in tens of thousands of combinations. As we see, our environment virtually lacks people who are quite similar to one another, except for identical twins, equipped with an identical set of genes.

The D4DR dopamine receptor gene, the novelty-seeking gene, in its long version produces gifted people interested in everything or many things; they may have certain hobbies, have more frequent sexual contacts with different partners.

- and in the long version with a high factor of the g gene (high IQ) produces individuals who are often inventors or rationalizers,
- in the long version, with a high IQ and a very low need to seek authority, results with individuals characterized by the independence of judgement, who therefore often become the proponents of new views and new ideas. We can state that the creators and the leaders of social, political, ideological and religious movements have the long novelty-seeking gene (NS), and the high IQ, the high physical mobility gene (PM), a low need to submit to authority, the low avoiding-injury gene (AI), and certainly a strong instinct of domination,
- people who, in turn, are equipped with the novelty-seeking gene in its short version, do not have many hobbies, but with a high IQ, they can be highly respected professionals in their fields of expertise,
- if the gene occurs in a very short version, they have no interests but the simplest ones referring to the basic functions of life; they do not feel the need to implement compulsory education, although when forced to study they can master the material in the school curriculum.

People equipped with a strong instinct to possess, devote their life to the accumulation of material goods, regardless of price and circumstances. Frequently, they are characterized by greed and selfishness. By the instinct to

possess, the need for security can be manifested, and it can also be the realization of the dominance gene. In humans, gathering material goods gives a sense of independence, but also of superiority over others, and accumulating great wealth, gives real power to the people who are not always adequately prepared to exercise it either due to low IQ, or a different innate set of social genes.

The dominance gene in animals manifests itself in the direct exercise of power by an alpha individual, or an individual that is the best in a given group. A case where the head of one wolf pack has a deputy in another pack, which deputy leads this pack on its behalf is yet to be discovered. Delegation of powers to deputies or governors is a purely human implementation. We should also mention a very important social gene, which is the avoiding-injury gene (IA). A high level of this serotonin gene of avoiding injury, or the fear gene, is expressed through reduced well-being, low self-esteem, periodic depression or so-called major depression, is present in 25 to 30% of the people. However, most people with a high type of the AI gene demonstrate only by the lack of satisfaction with life as a constant feature of their personality, accompanying them from childhood to old age. A high level of the AI gene (avoiding injury) in a lot of people has a significant influence on a their lives, reducing their potential or even paralyzing them with low self-esteem, stage fright and the lack of self-belief.

THE FIRST CIVILIZATIONS

In the Old World, namely Europe, Asia and Africa there are a lot of places and lands that are truly human-friendly and relatively human-friendly, rich in various readily available plant products, such as fruit, crops, animals and freshwater fish, marine fish, mussels and other seafood. But in these human-friendly, peaceful and environments that people inhabited for thousands of years, there developed no leading human civilizations developed.

The civilizations appeared five to six thousand years ago in Egypt in the Nile Valley, in Iraq, in the valley of the Euphrates, the Indus Valley as well as China's largest river valley, Huang Ho, the Yellow River. A common feature of all the places where these old civilizations appeared were long or even very long, as the Nile, river valleys that were attractive to people; these valleys were surrounded by deserts, unsuitable for life, or in other centres of civilization, with high mountains, unfavourable for stable life. So, the first civilizations developed the so-called **MIGRATION DRAFTS** with different tribes and peoples living near these attractive natural corridors pressed to move using those corridors. Due to desertification of the Sahara, peoples living there moved southwards into Africa, but also in the Nile valley and to Europe, to the Iberian Peninsula (Iberians). The Nile Valley was used by various peoples representing various ethnic and racial groups, some of them were from the savannah in central Africa, and others came from north-eastern mountainous part of the continent (Ethiopia). Probably, his fertile land became the destination for the peoples of the Middle East, the Syrian Desert and the deserts of the Arabian Peninsula. Such accumulation of peoples with different ethnic and racial background who either settled or travelled from place to place, coming from different geographical and climatic conditions, with distinct life experiences and ways of survival, resulted in the accumulation or the creation of a unique "bank":

knowledge memes bank, and a rich gene bank, determining various physical and mental abilities, e.g. manual skills.

The migrating corridors served as the accumulation spot for genes coming from various migrating peoples who had previously developed for thousands of years in isolation, in different conditions, which meant that within these societies, as a result of accidental, random combination of genes, there appeared individuals who were highly talented and creative, and who took advantage of the existence of the meme bank, and advanced the development of the civilization in these areas of the globe, which today are called the cradles of human civilization. The history of the ancient states, shows that they were invaded and conquered by various foreign peoples, who brought with them new forms of organization, armament, new religious cults and the ability to manufacture products made of bronze, then iron, unknown to the locals, as well as the knowledge of the use of the wheel, horse breeding and using horses for military and economic purposes. After some time, the invaders were driven from the land, but they left behind their genes, new innovative knowledge and new craft skills, organizational experience, and new methods of combat and warfare tactics. We can see that the main and the most attractive target for those raids invariably were wealthy and highly developed, at that time, countries situated in the corridors of so-called migration drafts: the Nile valley, or Egypt and the Euphrates valley or Mesopotamia. The invaders either blended in the local community or were driven away, but always took with them numerous skills, thus spreading civilization mainly in Asia Minor and along the Mediterranean coast. There is evidence that in the beginning, four to five thousand years ago, goods were traded among those emerging civilizations, which was certainly accompanied the knowledge memes. Probably the phenomenon was more intense among the peoples of the Nile and the Euphrates and Indus, than with the civilization of the Yellow River in China, although the route that later became known as the Silk

Route for thousands of years served as a travelling route for peoples and animals.

As stated above, the migration draft for thousands of years accumulated in the pool of genes taken from different populations that appeared there, and then either left or stayed, but always left behind some genes and some knowledge defined in the sub-units, known as memes. This supreme gene pool of different intellectual abilities concentrated in some small population had resulted in the emergence of a group of individuals displaying high intelligence and creativity based on the accumulated knowledge memes initiated a process called the formation of the first civilizations. A whole group of individuals is discussed, because a single individual, even the most intelligent one, surrounded by people not interested in any changes or new ideas, or living among individuals who did not understand new ideas, would not be able to do anything in order to push forward the development of civilization. I would call this complete gene pool, which determined the beginning of civilization, **THE ORIGINAL GENE POOL FOR THE DEVELOPMENT OF CIVILIZATION.**

The first occurrence of this phenomenon took place in Egypt about 3500 BC, and several hundred years later it emerged on the Euphrates (Sumerians), and in south-eastern Turkey. This trigger gene pool appeared one thousand years later on the Indus (Mohenjo-daro, Harappa), and 2000 years later it reached the Yellow River in China; it had not reached the New World yet though. Archaeological research has shown that the material culture of Hemud farmers, a settlement dated back to around 5000 BC, situated south of Shanghai, was significantly more advanced than that of most Indian peoples in North America in the seventeenth century.

* Places where the original gene pool was created, or locations where it reached, gave rise to three separate, unique cultural circles: Egyptian-Middle Eastern-Mediterranean, Indian, and Chinese. The entire civilization of the modern world comes from these three circles, the centres of creation of human civilization.

Among these three, a special role should be assigned to the two kingdoms located in the very fertile valleys of the Nile, the Euphrates, and the Tigris, namely Egypt and Mesopotamia, where there appeared approximately at the same time, the first creations of human material and spiritual culture, the very first civilizations, appeared.

From the beginning of the formation of these civilizations the knowledge memes were exchanged between them. It was a very slow process, but encouraged emulation and further development. In the Old World writing was created and long-distance trade by land and sea was developed. Numerous animals were domesticated to serve people: sheep, goats, pigs, cattle, buffalo, yaks, reindeer, horses, donkeys, dromedaries and Bactrian camels, elephants, dogs, cats, fowl. People started growing varieties of corn, trees, and shrubs. It is not known whether breeding yaks in the high Himalayas, and reindeer in the far Eurasian north by primitive people inhabiting those inhospitable lands was the result of independent thought, or of knowledge memes getting there; since in other places they raise animals, perhaps they could try to domesticate the most suitable type of animal: relatively docile, giving a lot of meat, milk, leather and wool, and with large draught power. It is possible that these peoples were cattle breeders, and then were pushed to the far north, to inhospitable territories and high mountains. In the seventeenth century the indigenous peoples of western Siberia domesticated elk, and used them to move across the extensive marshland, inaccessible to horses of Tsarist Cossacks. The Russian authorities, unable to control the locals, banned elk farms. As it has been said, the original gene pool did not reach America. The beginnings of civilization appeared there during the second or the third century BC, and were connected with the rather unknown Olmec people in Central America. Regardless of that, in South America, on the Pacific Ocean and at the foothills of the Andes the second independent civilization was developing at that time. Towards the end of the fifteenth century, when Europeans arrived there, the representatives and the descendants

of those civilizations were the Aztecs in Mexico, and the Incas in Peru. American civilizations did not domesticate any animals apart from pack llamas and guinea pigs in the Inca Andes, grown indoors, as the most immediate and the most accessible source of protein, and the only known crop was the potato. In Central America people kept turkeys and grew corn. American reindeer was not domesticated, though not far away, beyond the Bering Strait there lived reindeer farmers. American civilizations did not invent the wheel, did not create the alphabet, one exception being pictorial hieroglyphs in Central America, but no literature was created. No far-distance trade by land or sea was developed. At the time of the discovery of America by Columbus, both Aztec and Inca states were not aware of their mutual existence. It can be assumed that if some knowledge memes had reached the New World from the Old World, these civilizations would have been more advanced, but it is not known to what extent and whether this knowledge would have been considered relevant.

LANDS, NATIONS AND PEOPLES OF THE FIRST CIVILIZATION CENTRES

EGYPT

The history of the country on the Nile is almost five thousand years long, and only a few countries in the world can pride themselves in such historical continuity. The only, and at the same time very attractive, seat for starting a settlement was the Nile Valley. The most precious event for Egypt was the annual flooding of the Nile that provided the soil the moisture it needed so much for a long periods of time and depositing of fertile silt.

For thousands of years human existence has been closely tied with nature, and even depending on it to some extent. Agricultural needs forced Egyptians to store the excess water during floods, in order to be able to use it during dry seasons, thus guaranteeing even distribution via channels on the fields. Prudent residents created a very efficient irrigation system, consisting of a number of weirs, canals, reservoirs and devices that moved the water to a higher level, above the valley floor. Such an extensive project demanded plenty of planning and work required additional workforce, namely slaves, who were obtained as a result of organizing military expeditions abroad, to Nubia, and further up the Nile towards Sinai. Egyptians, then, sooner than other nations began to concentrate around one strong source of power, and since a few small kingdoms already existed in this region, they began to consolidate into larger ones, and finally two kingdoms emerged: on the lower Nile (Lower Egypt) and below the first cataract (Upper Egypt).

In the archaic period, c. 3100 BC, King Menes united both kingdoms, creating one strong kingdom of great significance. Consequently, Egypt became the

oldest state in the world. Even then, at the time of the first dynasty, people used writing, which was later called by Greeks “sacred writing signs”, and Egyptians called them “letters of divine speech”, as it was believed that the creator of writing was one of their gods, Thoth. It was the hieroglyphic writing (Greek *hieros* = sacred) which was a combination of drawings illustrating things, objects and graphical representation of a speech sound. This writing system consisted of about 700 characters, people wrote from right to left or from top to bottom, and the most commonly used writing material was durable stone as well as limestone, wooden slates, wood, leather, and bone. Other materials that were used included papyrus, and the oldest copies are three and a half thousand years old. Ancient Egyptian writing became deciphered after the excavation near the city of Rosetta a slab covered with hieroglyphs, the successful transliteration the text of was finished in 1822, by a Frenchman, Jean-François Champollion. Since then, the Egyptian monuments could speak with their own voice.

Thirty one dynasties ruled Egypt during the period of three thousand years. During the first period, so-called Old Kingdom (2686-2181 BC) period, all realms of art developed. In architecture, it was the of pyramids of Djoser, Khufu, Khafra, and Menkaure that were to serve as the evidence of pharaohs’ divinity and omnipotence, but at the same time until this day they illustrate extraordinary power of mind and skill of the builders. Magnificent temples were constructed, and the rich buried their dead in beautifully decorated tombs. During the Middle Kingdom (twelfth – twentieth century BC), after a temporary decline, architecture, painting, sculpture, and handicraft, especially making jewellery, were reborn. The period from the sixteenth to the eleventh century was called the New Kingdom, which brought political and economic, but above all a cultural boost. A number of splendid facilities were built throughout the country: at Karnak, Luxor, Abu Simbel, etc. The Valley of the Kings became a necropolis; the tomb was separated from of the sepulchral temple. The realistic reproduction of all human figures became truly meaningful. Many examples of

Egyptian writing, mostly anonymous texts praising the monarch or religious scripts, survived till this day. Egypt is the cradle of many literary genres: song, hymn, epic, fable, myth, biography, or letter, specimens of which have been preserved to this day. During the reign of Ramesses II, called the Great (c. 1304-1237 BC), numerous grand edifices were created: a wonderful courtyard of Luxor, a palace at Thebes, the tomb in the Valley of the Kings or the tomb of his wife, Nefertari, also called Nefrette. *Pentuer's Poem* was written. Around 1200 BC the period of decay began, the country had been conquered by Libya, Ethiopia, Assyria, then Persia and Greece, and finally in 31 BC it became a Roman province. Egyptian high priests played particular role in the development of Egyptian civilization. They had possessed considerable knowledge of nature, which they guarded jealously. They were the first to have determined the length of year for 365 days, were able to predict the solar eclipse, or calculate the day when the Nile flooded. They could treat the sick and preserve the bodies of the dead. The priests gathered huge wealth in their temples. Other prosperous social groups were: the warriors, the merchants, and the craftsmen who were able to work metals, precious stones, manufactured fine furniture, glassware, bronze, linen, and wool. When during the reign of Ramses II, a shipping channel was dug from the Gulf of Suez to the Nile, Egyptian expeditions became much easier and the Nile had become not only a "river of life" but also a gate to the world through which Egypt could give its extraordinary achievements of civilization to the rest of the world.

MESOPOTAMIA

parallel to Egyptian civilization, in the Tigris-Euphrates doab, at the mouth of these rivers, where they flow into the Persian Gulf, on a very fertile plain, one of the first civilizations in the world developed. This land called Mesopotamia was inhabited by the Sumerians, who in 4000 BC had created a number of small states-cities, which periodically conquered one another to form larger state-unions in Mesopotamia.

One of the individuals who constituted an important part of the history of human civilization was Hammurabi, one of the first creators of the Old Babylonian state, an excellent organizer and administrator, who took care of the development of cities, temples, as well as literature and writing. His famous Code of eighteenth century BC was the first known set of rules of law, engraved on stone stelae; its parts have survived until today and can be seen in the Louvre. North of Babylon, on the Tigris, another kingdom, Assyria, with its capital at Nineveh was created. It covered almost the entire Middle East, and after its fall and during the turbulent time of wars, the New Babylonian state emerged. The reign of Nebuchadnezzar constituted the period of its greatest prosperity. Details of the nations' cultural achievements were immortalized on clay tablets. On those tablets cuneiforms were made with a stylus and then the tablets were baked. They were so durable that they survived thousands of years in the ground with barely any damage. The texts discovered, particularly Assyrian and Babylonian scripts found in Nineveh, enabled the restoring the alphabet and deciphering the texts. Numerous texts that have been discovered, e.g. myths or stories that preserved certain concepts revealed that Sumerians used cuneiform not only in trade books, but also composed literary texts. Mesopotamian myths included the first stories on the creation of the world, on Adam and Eve, the Flood, and the Tower of Babel. As the texts were being deciphered, it became obvious that the Bible, for centuries regarded to be an original work by the Hebrews and a revealed book is rooted in the rich treasury of Sumerian myths and legends. Besides, the excavations revealed plenty of plates devoted to mathematics and astronomy, disciplines that in Babylonia were highly developed and practiced, as in Egypt, mostly by priests. In order to boost the development of trade stable units of weight and measure were introduced. Methods of counting and measurement introduced by the Babylonians, e.g. threescore, a dozen, or an ell, were used in Europe for centuries, in some parts almost to the present day. People paid for goods with metal, first copper, then silver and gold. The priests were able to calculate the movement and the speed

of celestial bodies, to explain and predict various natural phenomena, e.g. the rainbow, hurricanes, earthquakes, and the solar eclipse. They divided a year into months and weeks; a day into hours and minutes; and a circle into 360 degrees. Apart from astronomy the priests practiced astrology, which was based on divination from the stars, and did not reject witchcraft and sorcery. Unfortunately, due to the impermanence of the unbaked brick, very few Babylonian buildings have survived to this day. It is known, however, that the temples and palaces were very tall, terracing, and pyramid-shaped constructions, frequently with plated walls decorated with marble. Babylonian “hanging gardens”, popularized by Queen Semiramis and located on the terraces were the receptacle of constant admiration. Moreover, the Babylonians drew up fairly accurate maps of villages and towns, as well as larger areas. Unfortunately, a contemporary map of the world that would give some understanding of the knowledge Babylonians had about the Earth has been preserved only fragmentarily. Until recently, the dominant concept was that European civilization owes everything to Greece. Yet, recent research has proven that in many ways Europeans still draw from what the genius of the Sumerian and Egyptian peoples had created five thousand years ago.

THE DEVELOPMENT OF THE STATE, CULTURE AND KNOWLEDGE IN CHINA

Not only people of Caucasian origin formed developed culture in antiquity. The large continent of Asia inhabited by in Mongoloid nations created their own highly sophisticated civilization as well. Its centre was located in China, called by the Chinese the Middle Kingdom. Under the rule of successive dynasties science, literature, and art were thriving and made China extremely attractive and an inexhaustible source of inspiration from which many nations drew willingly and generously. So, it had become for the Far East what Greece and Rome had been to Europe. Additionally, China is the only county in the world

that can take pride in the uninterrupted tradition of statehood from antiquity to modern times.

Back in the distant centuries, the Chinese possessed thorough knowledge of both their close and distant geographic environment. In the second century BC the Chinese discovered Indochina, and the first century BC brought the discovery of a number of Japanese islands. Simultaneously, numerous business trips to the Philippines, Taiwan, India, and further to the west along the Silk Route were taken. Pilgrims travelled from China to India, to holy places associated with Buddha. Chinese knowledge and culture for thousands of years integrated various peoples of China and contributed to the development of community, first cultural and later national. Due to the vastness of the area, some spheres of life and artistic work of the Chinese dating back to thousands years ago, are not fully explored, and are yet to be discovered by scientists, particularly archaeologists. There is no doubt, however, that the achievements obtained in many areas at a very early stage were so pervasive that they encouraged the formation, then the consolidation of the Chinese statehood, and consequently the expansion of Chinese culture to neighbouring areas and including them into its realm. As early as the sixth century BC the first concepts and philosophical trends, Taoism and Confucianism, formed; they were further developed in later centuries, especially in the period of the Warring States (between the fifth and the third centuries BC). It is worth emphasizing that in the period of considerable territorial disintegration, the Taoist school, for example, proclaimed the principle that an ideal community is a rural one.

Chinese literature is undoubtedly one of the oldest in the world, and the oldest written texts date back to the thirteenth century BC. The Chinese mastered the art of writing down their achievements. Initially, it usually concerned the most primitive actions, beliefs, magic and prophecies; later it referred to historical events; philosophical as well as religious views and their range began to include wider and wider number of people. Learning Chinese characters required a long-

term effort, as the Chinese had, and still have, an ideographic writing, a writing system in which instead of letters there are complex and calligraphed characters. Chinese writing, then, is not based so much on the alphabet, but on the signs that originally were the images of objects they symbolize. The advantage of ideographic writing is that different peoples of China and beyond, using different languages could employ it for communication.

In the classical period, the sixth – third centuries BC, the first onymous courtly poetry appeared. Other literary types and genres had to wait for their golden age until the Tang era. Between the seventh and the tenth century AD the knowledge of classical literature was obligatory for those who applied for posts as court or state officials, as such posts were not available for people who were illiterate.

China developed its own functional art. As early as eight thousand years ago, the first clay products, decorated with various paintings and designs appeared. Around 3500 BC, white porcelain as well as delicate black porcelain was made. At the same time, bronze smelting began; it was used for the production of various ritual and functional vessels decorated with texts, mostly divinatory ones, written with ideograms. In the Neolithic period, China began acquiring nephrite, first for making tools, and then, because of its decorative qualities, the mineral was used for ornamenting and decorating the dishes. Later, from the fifth to the third century BC, nephrite carvings as well as the lacquerware manufacture flourished. The oldest paintings were dated back then as well. This form of artistic expression used a brush and ink on paper or silk. The expansion of China during the Han dynasty, that took place between 206 BC and 220 AD, led the Chinese to initiate contacts with the rest of the world. These contacts resulted in military conflicts but also in certain trade benefits. In the north, numerous nomadic peoples of Central Asia constituted a big threat to China, so numerous military expeditions were sent against them, with mixed results. This opened the access to Central Asia, and led to building trade routes, with which Chinese silk could be transported all the way to Rome (the Silk Route).

The Chinese initiated closer contacts with the peoples of northern India, especially after Buddhism became widespread in China. We can witness visible effects of the influence of an alien civilization (Indian) on the culture, architecture, and the mentality of the Chinese people. Undoubtedly, Chinese culture influenced the peoples, territories, and states that neighbored China. The realm of Chinese culture included: North Korea to the north of the country; Vietnam to the south; and insular Japan to the east. Chinese knowledge and culture reached Japan in waves, with Buddhist missionaries as well as refugees, philosophers, and scientists looking for security and peace on the island that was very remote from the mainland, namely China, during many wars and times of unrest on the continent. Vietnam, in turn, China's southern neighbour was very important for strategic reasons. They sent there generals with armies, writers, scholars, government officials, artists and talented young people. The Vietnamese entered the circle of Chinese culture and accepted it, but they did not accept China's national consciousness. The same happened to the Korean Peninsula.

The Chinese are a nation, but not in the European sense of the notion, where many nations have their ethnic tribal origins. The Chinese from northern and southern parts of the country differ in their physical appearance, use over a dozen languages, Chinese dialects, which are quite different from one another, and which are the continuation of the old tribal languages, dating two thousand years back, and used by peoples who had their own states, but not evolved into separate nations. The Chinese have a sense of belonging to their own, separate, several thousand years old culture, their beliefs and customs, their distinct social and family values as well as the veneration of the dead, and they are proud of their history. The Chinese civilization is the only one of the four great civilizations to have been established in the temperate climate zone in north-western China, where millet was the basic and most important field crop. Although the whole territory of China had undergone Neolithic revolution

during the period of several thousand years before current era, which involved the settlement of people, initializing agriculture, building permanent settlements, animal domestication and husbandry, manufacturing pottery and clothing, local cultures of both eastern China and its southern parts, the Yangtze River basin, did not play a major part in the creation of Chinese civilization, as the culture of north-western China, founded in the Shang dynasty kingdom, a small kingdom that existed between c. 1600 and c. 1050 BC. The Shang kingdom ruled the relatively small part of northern China proper, and on the west the kingdom bordered with non-Chinese peoples, namely pro-Tibetan Qiang people as well as steppe peoples, considered barbaric and primitive. The Shang kingdom was to be the starting point of the Silk Route. The obtained information seems to indicate that the Shang State was reached by the original gene pool for the development of civilization or that pool was partially created there. A large pool of memes reached this region as well; it was not a complete one though, namely more the theoretical than the practical one. They had access to, for example, products from the west of India and Mesopotamia and the knowledge on some products and devices, but not their authors, i.e. craftsmen that could pass the knowledge and skill they had, either did not reach those regions or visited them very rarely. This forced the people of the Shang Kingdom to develop their own technologies and processes for the manufacture of the equipment and weapons they already knew and needed. Probably this was the origin of the development of original Chinese civilization. The civilization of the Shang Dynasty kingdom was the dominant one and was the one that the neighbouring states and peoples of China assimilated. Modern languages of north China, with the Beijing dialect called Mandarin, currently recognized as the language of the whole country, descend directly from the language of the Shang Dynasty people. The languages of north China, also called Mandarin Chinese, include North-Chinese, North-West, South-West and the River Chinese. The Chinese from the southern and south-eastern parts of the country use six distinct languages: Cantonese, (Guangzhou, Wu, Shanghai), Xiang (Hunan Province), Gan (Jiangxi Province),

Min (Province of Fujian, and Taiwan), and Hakka (Kejia) on the border of several provinces, i.e. Fujian, Guangzhou, Hunan and Guangxi.

The Shang Dynasty was overthrown c. 1050 BC by a neighbouring state, Zhou. They took the land and created the Zhou Dynasty, ruling till 221 BC. The Zhou Dynasty took over the culture, language, and writings of the defeated. The beginning of this dynasty, 1050 BC, is the time when the first Chinese chronicles and historical records appeared. The Qin Dynasty made the first successful attempt to unite the whole of ancient China. The Qin State, situated to the west of the Zhou State, and functioning as a buffer zone between the steppe barbarians and the Zhou State, conquered the latter one and continued to dominate all the small states on the Huag He River, and the Yangzi River basin. The first ruler of the Qin Dynasty, Qin Shi Huang, who united China, took the title of the First Emperor Shi Huángdì. He abolished the old states, removed the rulers and the aristocracy of those states from power, and divided the whole area into 36 provinces, which were administered by the governors appointed by him. He undertook extensive work on the construction of the Great Wall of China, and at the same time ordered the destruction of the border walls between the conquered countries. Further, he unified the means of payment, weights, and measures, and writing systems in the whole state, by burning old ones used in conquered countries, and claimed the lives of 460 scientists who following tradition, protested against the new order. It is interesting that the first unification of the whole of China was conducted by a small state situated on the western fringes of contemporary China, practically on its steppe frontier, dealing less with agriculture and more with breeding horses for the Zhou Dynasty. This small state of the Qin Dynasty did not follow Taoism or Confucianism, but scribal and militaristic doctrine that subjected all targets to the welfare of the state.

The parallels with ancient Macedonia and modern Prussia become evident here. Ancient Macedonia was heavily Hellenised and militarized. Its monarch,

Alexander the Great of Macedonia, first united the whole of Greece under his rule, and then spread Greek power and culture across the Middle East, thus creating the Hellenistic world. Similarly, the militarized modern Prussian state that grew in the lands and territories which were ethnically Polish as well as at the lands of Lithuanians, related to Prussians, unified Germany, and its rulers proclaimed themselves its emperors.

THE INDIAN SUBCONTINENT

Among the peoples of the Indian subcontinent, separated from the rest of the world with huge barriers: on the west of the Indian Ocean, and the Bay of Bengal from the east, and bordering from the north with mighty the Himalayan range, due to a unique caste system, functioning to the present day, and limiting mingling of the population, not only ethnically but also racially Indo-Aryans, Indo-Scythians, Indo-Turkish, Indo-Mongolians, the descendants of the peoples inhabiting the land prior to the Aryan invasion, namely dark-skinned Indo-Dravidians, and the peoples of Tibetan-Burmese origin as well as a few scattered tribes of small stature, and dark-skinned aboriginal Indians at a very low level of development can still be distinguished. India has rich the historical past. As I have already mentioned, different peoples had been flowing to India for thousands of years, conquered some part of the territory, formed their state, entered some military conflict with their neighbours that eventually led to them to be defeated by new invaders. The first major Indian civilization was founded c. 2500 BC in the Indus Valley, in what is now Pakistan. It lasted for about 1000 years and was a sophisticated form of settlement. The first inhabitants of these regions were nomadic peoples who began land cultivation and animal husbandry there. Soon, a substantial development of trade became noticeable, and the first signs of development of urban civilization appeared. Some settlements had a well-planned system of streets, and even a sewage system, e.g. Harappa discovered in the twentieth century. As early as in the middle of the third millennium BC, the culture of the Indus Valley matched other great civilizations

of that time. The residents of Harappa led intensive trade with Mesopotamia. What is more, they used their own system of weights and measures, and, what deserves special emphasis, their own handwriting. It consisted of more than 270 pictographic characters and is yet to be deciphered. Many archaeological sites revealed terracotta and bronze figurines, jewellery and clay female figurines depicting the Mother goddess, a symbol of fertility, whose cult in India survived the invasion of the Aryans, the creators of Hinduism, the centuries-old rule of the Buddhist religion and the Islamisation of a large part of Indian society. To this day, the cult of the Mother goddess, a symbol of fertility, remains an important element of the religious system of many Hindu sects, including tantric ones.

The first historical invaders of India were Aryans, Indo-European people, who c. 2000 BC conquered the fertile lands in the basin of the Indus and the Ganges rivers, gradually pushing the dark-skinned Dravidian people to the south of India. Aryans, who came in waves, did not create a uniform state, but largely imposed their beliefs, customs and rituals, promoted cattle breeding and spread the habit of eating meat. From 1500 to c. 1200 BC *Vedas* were created. They are the oldest books of India, written in the Old Indian language called Vedic, which gave rise to Sanskrit. The books contain the sacred texts of Hinduism, descriptions of rituals, prayers, songs and theological treatises. A long time after the Vedas were composed, around the turn of the old and the new era, two great poems: the *Mahabharata* and the *Ramayana* were written in Sanskrit, a language extinct today. They were devoted to the struggles of the period of the Aryan conquest of India. The language used there fully corresponded to the already developed standards and rules of grammar, and in this respect it anticipated other ancient nations. Indians used mathematics at a highly advanced level, since they were the ones to introduce the decimal system, and the numerals known today as Arabic. They had developed music as well; the music scale and the names of tones come from India. "Indians" is a collective term for

the residents and the citizens of India and the people of Indian descent and professing one of numerous Hindu religions that divide further into hundreds of sects and religious and philosophical schools. This complexity of Hinduism is the result of at least four thousand five hundred years of overlapping of various civilizations and philosophies that had been brought to India by many nations and peoples of different races. This is reflected in the language diversity of the Indian society that communicates with thirty-three officially recognized languages (apart from English). The Hindi language is spoken by about 200 million people, and the least used language is spoken by over a million of citizens, not to mention hundreds of minor languages and dialects. In the twentieth century historical Indian Territory was divided into three states; it was the consequence of the Islamisation of much of the Indian population, caused by the invasion of Turks from Central Asia in the sixteenth century. Those descendants of Tamerlane had created the powerful Maratha Empire. Historical India was divided into Hindu Dominion of India, and two Islamic countries, namely Pakistan to the west, around the Indus River basin, and Bangladesh to the east in the Ganges-Brahmaputra Delta.

ANCIENT GREECE

The Greeks were an Indo-European people, who came to the Balkans, to lands of contemporary Greece at the beginning of the second millennium BC. This is the date of the arrival of the oldest Greek tribes, who undoubtedly took from the natives their higher material culture. Today the name "Greece" is used with reference to the southern end of the Balkan Peninsula, along with many islands of the Aegean, Ionian and Mediterranean seas. It is a mountainous country, and its coasts are packed with bays. Topographic diversity of the country was not favourable for the creation of one large state, but the lushness and beauty of nature inspired artistic creativity, and the surrounding seas encouraged both distant and local voyages and trips. Numerous excavations have shown that as early as the third millennium BC the islands and coasts of the Aegean Sea had

achieved a significant level of cultural development. The oldest civilization centre was located on the largest Greek island, Crete. In the early 20th century an English archaeologist, Arthur Evans, while conducting archaeological research began a detailed reconstruction of the palace of King Minos at Knossos, and thus recreated the image of the Minoan civilization, dating back almost four thousand years. The result of his work was amazing; today we can see: the entrance to the palace, a row of columns, the throne room with the monarch's seat, used by King Minos himself, stairs, baths, pantries with large clay jars, and wall paintings. In those early times Crete already must have been a powerful and rich country, inhabited by people of Hittite descent who originated from Asia Minor. Later, Greeks used this place as the setting for the tale on the dramatic struggle of Theseus with the Minotaur in the labyrinth of the palace. Thanks to Ariadne's help, the story had a happy ending.

Another equally important centre of civilization was situated in Argolis, at Mycenae, the cradle of European civilization. Numerous excavations indicate that the city existed as early as c. 3000 BC. The ancient history can also be confirmed by Cyclopean defensive walls both in Mycenae and in neighbouring Tiryns. This was once the kingdom of Agamemnon who, because of beautiful Helen, went to war against Troy. At that time Mycenae was inhabited by one of Greek tribes, the Achaeans.

The first Indo-Greek peoples reached the area of the present-day Greece in the second millennium BC. They mixed with the original inhabitants of these lands from the Mediterranean circle, and assimilated their higher material culture as well as many names referring to various locations and related to the sea. From the north, the Balkan Peninsula began to be flooded by still new Greek peoples. One of those newcomers, were Dorians, the strong and combative people with no respect for the existing culture. They arrived in c. 1200 BC; they conquered Mycenae first and then weakened Crete. The Aegean civilization had been ruined and for several centuries, and life had become primitive again. Earlier,

Minoan civilization on Crete was destroyed, probably as a result of the massive volcanic eruption on the Aegean island of Thera, which caused massive tsunamis devastating cities and ports of Crete, and falling ash did the rest.

It was thanks to another Greek tribe, the Ionians, who came to Greece with the first wave of settlers, and occupied the south-eastern part of the peninsula, a new Greek civilization of the cities, with Athens at its helm, was born. It is believed that around the eighth century BC Homer, whose works remain among the most impressive literary texts, lived there. Ancient Greeks treated *The Iliad* and *The Odyssey* almost as sanctities, the volumes that taught about distinguishing right from wrong, shaped courage, nobleness, and love of one's country.

Greece in the age of Homer consisted of many tiny city-states, led by kings. The cities were inhabited by noble families, less affluent free people, and slaves. The main occupation was agriculture, but people were also practicing crafts: pottery, weaving, metallurgy, and manufacturing of household and farm equipment; trade flourished. Around 500 BC money became commonly used; almost every city minted its own coins.

Among many cities of this era, two emerged as the most dominant ones: Sparta and Athens. Sparta was founded after the Dorians conquered the Peloponnese. The only occupation in Sparta was war and preparations for it in extremely strict (Spartan) conditions. Athens, in turn, was inhabited by the Ionians who kept developing crafts and trade, science and art. The knowledge of the letters and writing was universal. The Athenian ideal was the combination of beauty and fitness with spiritual development. In the seventh and the sixth centuries BC there appeared the first examples of philosophy, poetry, and music. In spite of being divided into large number of small tribal states all Greeks had a lot in common; after all they were one people. Shared religious beliefs, the cult of holy places, Delphi – the seat of Apollo and the Muses, and the famous oracle priestess, Pythia, and Olympia, the sacred grove dedicated to Zeus constituted important bonds between Greeks. Starting from 776 BC, every four years

Olympia was the seat of the Olympic Games, resumed in modern times in 1896. The games spread the cult of power and efficiency across the whole of Greece, but above all stressed the fulfilment of the rules of nobility and fair fighting, and taught righteousness and honour. In the history of Greece, the fifth century BC was the period of the Persian wars and victorious battles of Marathon and Salamis. The hegemony of Athens was now unquestionable. In the time of Pericles the governments of the rich were finally abolished and the power was handed over to the people. All citizens were now equal, and that system was called democracy. During Pericles' times the Acropolis was expanded, and Greek theatre was in its prime; the presentations in honour of Dionysus were held, and in the fourth century BC the repertoire was delivered by Aeschylus, Sophocles, Euripides and Aristophanes.

Athens remained a power at sea, and Sparta on land. Unfortunately, the Peloponnesian War put an end to the power of the two states. Despite political and economic collapse, the fourth century BC turned out to be the time when both Greek science and philosophy thrived. It was the time of Socrates, and his student, Plato. And it was a student of Plato, Aristotle, who left a number of works in the field of physics, nature, rhetoric, logic, and the theory of state. They both are the founders of the European philosophical thought.

The Greeks filled the universe with an unusual amount of deities, giving them, in contrast to other nations, typically human traits, which made those gods less distant. Gods got married, had children, experienced human feelings and emotions, they rejoiced and mourned. Greek beliefs and legends, great myths were permeated with great myths: not only with imagination and extraordinary beauty, but sometimes with profound wisdom and lessons that still retain their value. Recalling the past, people still talk about "Sisyphean labour", "the torment of Tantalus", or use expressions like *nec Hercules contra plures*. Greek beliefs have become an integral part of European culture, a canvas for many

literary works, numerous paintings and sculptures, and entered the world cultural heritage.

Ancient Greece contributed most to European culture, it pioneered and developed a distinct culture of the Western world. European philosophical thought was born there; literature flourished and provided still living patterns for all literary genres (epic, lyric, drama); architecture and sculpture thrived. The greatest Greek thinkers, Plato and Aristotle, developed the first theory of the state. The Greek, prominent individualists, valued freedom above all, and this idea is one of the most valuable gifts passed on to the peoples that followed.

Certainly, ancient Greeks commonly had quite high IQ, and a long version of the novelty-seeking gene. Not only did they absorb the ambient achievements of Mediterranean culture, but in a short time they developed their own unique culture, called ancient Greek culture, which included philosophy, mathematics, technology, medicine, and literature. They also possessed a high level of the PM gene, the physical mobility gene, as Greeks were everywhere, and made their way to the furthest corners of the ancient world, and a low level of the AI gene, avoiding injury, or fear gene. A high level of the IN gene, the inwardness gene, conditioning clinging to tribal towns, dialects and related particularisms, despite the sense of union of origin, religion, and culture, the Greeks failed to ever establish a common state. Greece was conquered and united for a short time by Macedonia, to the north of mainland Greece.

THE ROMANS

In ancient time, dating back to the second millennium BC, era a group of peoples of Indo-European origin settled on the Tiber; they broke into several tribes. The Latins settled at the seaside; to the north of them lived Sabines, and in the mountains the Umbri found their place. These peoples occupied only the central part of Italy. In the southern part of the peninsula that was inhabited by the Greeks, and to the west and the north of the Tiber River, to the sea lived a

valiant people of unknown origin, the Etruscans. They assimilated their relatively high culture partially from Greeks, with whom they maintained intense contacts. In the meantime, on the Tiber, at the meeting point of three ethnic boundaries: the Latins, the Etruscans, and the Sabines, a city grew slowly. Initially, it was ruled by Etruscan kings, who later were to take control not only over the whole of Italy, but over the whole civilized world of the Mediterranean. This city was Rome. The estimated date of its foundation is 753 BC. The town developed in favourable conditions, close to the sea, so that the waters of the Tiber could be used by merchant ships, and on the seven hills, of which the Capitol was not only a sacred place (similarly to the Acropolis in Athens), but also a fortified castle. Growing in power, Rome began to impose its superiority on the neighbouring Latin settlements and quickly gained hegemony in the region.

How is it possible that the inhabitants of a single city inhabited by a small Latin tribe, one of few Italian peoples, by no means the greatest of them, conquered the whole peninsula that became called Italia, and then went on to dominate the whole known Mediterranean world, and formed the Roman Empire, imposing its power, culture, and language, Latin, on the hundreds of different peoples. The only exception was the eastern part of the empire, where Latin had to compete with a language called Koine, a common supra-regional form of Greek. Drawing extensively from the knowledge and cultures of the conquered nations, the Romans developed their own culture, literature, art, as well as military and mechanical technology. They created a system of law that set a benchmark for social rights of most civilized societies. So what factors led to the supremacy of this small tribe concentrated round its city, Rome, initially ruled by Etruscan kings, and after their downfall treated itself with to a Republic? How did it happen that after the fall of the Etruscan dynasty a local, Latin, dynasty did not come to power? In most countries, societies, and tribes, the most powerful family from the strongest national or tribal group, surrounded and supported by

the clientele dependent on them, comes to power and gives rise to a new dynasty of rulers. If this does not happen, a breakdown and a fragmentation of the whole state or society take place. In Rome a republic was founded; i.e. the holders of all political and military positions were elected by all citizens for a short period of time. No person selected to be assigned to any public position had a chance to remain on the post long enough to create their own clientele. It is characteristic that during the conflicts between the rich and the poor usually there are riots that end in killings or burning of the houses (mansions) of the rich, and after some time the riots are suppressed. In Rome, when a conflict between the poor (plebs) and the rich (patricians) occurred, the former did not raise against the latter (we are talking about the times of ancient tribal, not imperial, Rome), only threatened to abandon the rich and to move somewhere else. The rich, in turn, did not use repression against the rebels, but agreed to a settlement. So what was the set of genes, in addition to a set of favourable coincidences that ordained that the Romans created an empire?

The Romans did not differ from most other tribes by possessing some set of unique or unprecedented genes, but probably were equipped with the concentration of certain “social” genes that appeared at random in unknown circumstances in the past, before the Romans arrived at the peninsula and settled on the Tiber. They were characterized by a common high intelligence, i.e. a high IQ or a high g factor, in other words high form of the acuity gene, and a high concentration of the dominance gene, the need of power gene. A community in which all want to rule can only exist if there are iron rules of conduct, followed by everyone. They showed a high concentration of low demand for searching authority gene. If only few among the Latins were seeking authority, then the tribal leaders could not gather enough followers to come to power. Additionally, they had a high concentration of the novelty-seeking gene in its medium or high form, but not the highest form, which resulted in the fact that the Romans were not as ubiquitous as the Greeks and Phoenicians. They

possessed a high concentration of the inwardness gene in its high but not extremely high form. Without a strong inwardness gene, which determines strong attachment to tradition, language, the “us” concept, with their genes Latins would have scattered or they would have been dominated by other tribes. This probable set of social genes led to the birth of Republican thought and practice among Romans; it became the basis of Roman legal thought, a tough but fair legal code followed by all. It was codified in the fifth century BC, by the college of ten people, and announced on the twelve tables (hence the name “The Law of the Twelve Tables”) and publically displayed. This oldest set of Roman legal norms, mainly concerning private law, was very progressive, and secured the people, among other things, from the arbitrary administration of justice. At the same time, it was very strict, especially with reference to the infringement of property rights. After several years the plebs obtained the right to enter into marriage with the patricians, and then also gained access to holding some offices and titles, including priesthood. Thus, with time legal differences between different states became blurred. The differences in wealth remained though, and this significantly limited the success of the plebs. Internal development was achieved amid continuing wars, both defensive and offensive ones. After the unification of Italy (the third century BC), as a consequence of the three Punic Wars (the second century BC), Rome became the strongest state in the Mediterranean, and other states depended on it to various extend. Numerous wars and the influx of cheap grain from the Italian provinces destroyed one primary sector of the economic system – agriculture. Soon, a new internal struggle for the interests of new social strata began. The number of slaves, who appeared due to constant military struggles, grew constantly. In the first century BC their fate became simply unbearable; they met their destinies sometimes gruesome ones, e.g. they had to fight wrestling battles on the circus arenas. Roman spectators demanded that each show ended with the death of one of the gladiators, slaves. One of those slave warriors, Spartacus, became the leader of a slave revolt that was very dangerous for Rome and occurred in the time of great

turmoil. The uprising did not last long and ended with the rebels' defeat. It was followed a series of struggles for power in the country ignited by ambitious yet selfish individuals. The three major were: Crassus, the most affluent man in Rome and the vanquisher of slaves, Pompey, the conqueror of many lands in the east, and Caesar, who after winning the war with Gauls basked in glory, and was supported by the army. After the death of Crassus, Pompey and Caesar started a civil war for the dominance in the country. In 48 BC Pompey was defeated, and Caesar became an autocrat. The history of the republic was put to an end giving rise to the Roman Empire, which lasted until 476 AD. This date is regarded as the end of ancient history.

KNOWLEDGE MEMES' MIGRATION

Human knowledge has developed very slowly. In the centres where various civilizations developed, the diversity of genes, and a large number of knowledge memes led to agricultural development, stable construction, animal husbandry, as well as the development of beliefs, culture, social, religious cults and the development of astronomy. Trade and economy, in turn, had forced the development of writing and mathematics. Every invention pushed humanity towards further development, although the process was very slow and noticeable only when looked back in hindsight after many generations had passed. This was the path of the development of practical skills, because abstract knowledge: mathematics, philosophy, geometry, or physics developed more slowly, and only in the centres of civilization, where these ideas could permeate one another. People equipped with drives, instincts and genes similar to those of animals, with the exception of a single HSB gene, which allowed for a rapid association of facts, logical and abstract thinking, had succeeded at a tremendous job, creating the human civilization. The development of civilization required a constant exchange of knowledge memes. Peoples who, as a result of isolation, had no inflow of knowledge memes or those who were not willing to accept them can serve as an illustration how an incredibly difficult process was accomplished. Although already 2300 years ago, a Greek philosopher and mathematician, Archimedes, who lived in 287-212 BC formulated a rule on the pressure of fluid on an object immersed in it, called Archimedes' principle, some of the isolated peoples did not acquire even the concept of natural numerals that are familiar even to small children in civilized countries, e.g. Semang people, indigenous to Malaya, and living in the depths of the Malay peninsula, until recently, had no concept of the numeral one, only mentioned the name of an object: a monkey, two, three, many. Some Australian Aboriginal

tribes also knew only few numerals; the word *kurdawanya* meant 1 *huladherabo* – 2, *buraniyo* – 3, and further *nyanda*, which meant “plenty”.

Humanity, using written digits in the senary numeral system, such as the Babylonians, or the decimal system, like many other peoples, including the Romans, did not know the number 0, not to mention negative numerals. The numeral 0, invented by Indians, was taken over by the Arabs who then transferred it to the Iberian Peninsula together with figures called today the Arabic numerals in decimal system. In Europe the digit 0 became known only at the turn of the ninth and eleventh centuries AD. Even in the seventeenth century in European schools students learnt that the number 1 was not a number, but the concept of which all other numbers consisted, and number 0 became a legitimate number even later, not to mention negative numerals.

The history of the world teaches that many peoples and states had adopted and started to look for new knowledge if they had been forced to do so for military reasons, and the communities, when they had been pressured economically or administratively. It is known that some of the peoples in the south of India and the Deccan, despite a two-thousand-long neighbouring with other tribes, who were on a higher level of material culture, had not participated in the development of this culture or adapted it to suit their needs, and still stand at a very low level of civilization development. The acquisition of knowledge very often is combined with acculturation. This is especially true of societies functioning, until recently, at a low level of civilization, such as the modern Inuit or Aboriginal Australians.

Additionally, knowledge memes migrated because of religious or philosophical movements, as well as within great states and empires. Religions and states had played a tremendous role in the development of imperial civilization of many nations. Let us consider just some of them.

BUDDHISM

Buddhism gained considerable popularity since c. 500 BC. One of the main reasons was it preached more an altruistic doctrine that sought to ensure that one does not settle for the salvation of him or herself, but also to ensure the salvation of others. Believers were supposed to follow Buddha's teaching, including respecting the five precepts, namely: avoid killing, stealing, lying, drinking intoxicating beverages, and leading an unclean life. The followers were also persuaded by the rule that salvation is achieved only through knowledge and the mode of life, not through one's background. From the first century BC Buddhism began to spread not only all over India but also in Ceylon, which for many centuries became a safe haven for the religion. Buddhist missionaries were sent to different parts of the world and to various states sometimes far away from their homeland and along with their creed they carried Indian knowledge to the Indo-Chinese Peninsula, the large islands of Indonesia, and to Tibet and China. They reached the west: Egypt, Syria and even Macedonia. Chinese knowledge and civilization, in turn, with Buddhism reached Korea, Japan and Vietnam. There is no doubt that Buddhism became the religion of the world, and had a huge impact on knowledge and intellectual development of many nations of the contemporary world: shaping the attitudes, opinions, and beliefs of millions of people, not only followers.

THE ROMAN EMPIRE

spread knowledge from the Middle East and the Mediterranean, which was a cluster of the civilization, culture and knowledge of the Greeks, Phoenicians, Egyptians, and the peoples of Asia Minor, combined with their own knowledge, especially technical, military and an administrative one. It was transported to less developed regions of the empire, that is, to Western Europe, to the farthest corners of the Pyrenean peninsula, modern Spain and Portugal, to Gallia Transalpina, now France, in Great Britain up to the border with Scotland, and to the Germania Inferior, and to the Alps, to Pannonia and Dacia, now Hungary and Romania.

CHRISTIANITY

Christianity as a religion developed in in the Roman Empire rather quickly, over two centuries, and then spread beyond the empire, to the East African countries, namely, Nubia and Ethiopia, and to the peoples of the Caucasus: Armenia and Georgia. As far as Europe is concerned, from the eighth to the thirteenth century, as the countries from the north, the centre and the east of continent adopted Christianity, they entered the realm of Greco-Roman culture, later known as European culture. In addition to a religious message, Christianity, brought with it, via numerous religious orders, technical knowledge, agriculture, principles of territorial organization, work organization, and literacy.

European colonial countries: Spain, Portugal, England, and France moved European civilization to Americas and the southern and south-western Africa, and the islands of the Philippines in Asia.

ISLAM

spread its culture, language, and customs of nomadic Arabs, as well as the culture and knowledge of the conquered states in the Middle East: Mesopotamia, Syria, Persia, Africa (Egypt) as well as moved numerous Indian and Chinese inventions to north and eastern Africa (Zanzibar), and to the south-western Europe, to the Iberian Peninsula- Caliphates (Spain), and the islands of the Mediterranean, (Sicily, Balearic Islands).

As we can see, practical knowledge spread mainly due to religious and/or philosophical movements and great empires, which for their own economic and military purposes implemented among the conquered peoples their civilizations in the form of basic practical knowledge, their religions and their administrative units. Even great empires of antiquity were driven by and supported the development of knowledge they needed to maintain supremacy in the conquered areas and to compete with other countries.

Additionally, immigrants, voluntary and forced settlers, e.g. displaced persons and prisoners of war, also contributed to disseminating knowledge. Another agent of propagating knowledge were the merchants travelling to distant, unknown lands, driven by the desire for fast profit and an almost immediate chance of getting rich.

Greek, Phoenician, and Jewish Diasporas scattered all over the known world, also played an important part in this process. In antiquity, when a diaspora managed to consolidate its own territorial or administrative organization, it was called a colony. They were settled by voluntary, usually active settlers, merchants and craftsmen, with higher practical, theoretical and intellectual knowledge, as they were literate, and fluent in mathematics, astronomy, social arrangements, in contrast to local populations surrounding them.

A great role in the transmission of the knowledge memes was played by Greek colonies around the Black Sea and in southern Italy and Sicily, and the Phoenicians living in North Africa (Carthage) and in Spain. In order to secure lucrative maritime merchant routes, as well as avoid overpopulation, in the second millennium BC the city-states of ancient Greece began a great colonization. Greeks gained control of the islands and the east coast of the Aegean Sea. The major expansion took place in the eighth and seventh centuries BC, and to some extent even in the sixth century BC, leading to spreading Greek city-states all over of the Mediterranean Sea and the Black Sea Basin, from the mouth of the Don and the Crimea in the east to the coast of Spain in the West. Greeks colonization also included south-eastern Sicily, where large cities of Syracuse and Agrigento. The examples of the settlements from that time are still visible there. They dominated southern Italy, where they founded Naples. Greek settlers reached the mouth of the Rhone as well, and then took to the north-eastern coast of Spain. This way, Greeks became the second people, after the Phoenicians, who were the sailors and colonizers of the ancient world.

When Alexander the Great of Macedonia crushed Persian army, seized Asia Minor, and conquered Syria, he marched into Egypt and at the mouth of the Nile he founded the city of Alexandria, a great centre of commerce, science and Greek culture. Having gained the control over the whole of Persia, his army invaded India. The influence of Greek culture reached as far as central or even eastern Asia. Simultaneously, as a result of the contact with local cultures it was influenced by them and ceased to be purely Hellenic culture, but by assimilating certain Eastern elements it was becoming so-called Hellenistic culture. Nevertheless, the output of Greek culture continued growing, as illustrated by excellent literary works, and even more by works in science and philosophy.

Another extremely important nation of antiquity were the Romans. In contrast to Greeks they were characterized by clear-headedness, practicality, the strict morals, and discipline. They were nowhere near Greek fantasy and imagination. Therefore, original Roman religion was very different from the Greek one. Romans worshiped many gods (Jupiter, Juno, Mars, Minerva, etc.), but they were not able to tell as much about their gods as Greeks could, and they were not on such familiar terms with them, let alone imagining these deities in human form. In ancient Rome, people were obliged to obey and honour their gods. In terms of spiritual culture Romans were not independent, and derived plenty from outsiders. Following the example of Greeks, the Romans learned to erect temples and statues of their gods. From Greeks who settled in Italy they took writing and worship of many gods and heroes. Romans assimilated a lot from Etruscans as well, e.g. they learned how to construct vaults. There was one area in which the Romans had no equal in ancient times, namely organization of the army.

The extent of the influence that Greek culture had on Romans can be illustrated by the fact that among educated wealthy Romans, all were supposed to possess an extensive knowledge of Greek and Greek literature, and developing Roman prose and poetry draws from Greek patterns. The Roman religion had also been

influenced by Greece, e.g. Jupiter was aligned with Zeus, and Juno with Athena. The cult of Apollo was spreading. Romans valued strength higher than beauty, and this may be the reason why magnificent Greek theatre was not assimilated, and wonderful edifices: theatres and circuses were built instead. There, Romans could enjoy wrestling gladiators and equestrian races. The simplicity and austerity of Roman housing gradually gives way to splendour and lavishness. Numerous magnificent buildings are created in Rome: temples, the triumphal arch, basilicas, baths, and amphitheatres. Rome absorbed Greek culture, transformed it, spread throughout its territory and to the next generations as Roman-Greek culture. Monumental legal works were created at that time. Roman legislation remains a model used for educating future European lawyers. Finally, Rome developed a noble idea of subjecting the rights of an individual to the general good, which, in combination with the Hellenic love of freedom constitute a timeless message for the whole mankind.

THE SPECTACULAR journey of knowledge memes occurred in the fifteenth century, after the conquest of Constantinople by the Turks, and the fall of the Byzantine Empire. The consequence was an exodus of Constantinople's intellectual elite to Western Europe, mainly to Italy, which gave birth to the Renaissance in European culture.

Greek scholars were accepted enthusiastically, and soon people began to learn Greek and savour original versions of works by Homer and Plato. An unprecedented development of various fields of science, culture, and art became visible, above all architecture, sculpture, and painting. A new view of the world was born. A new ideal of man was proclaimed, thoroughly educated, able to bring out of life its entire wealth and beauty. This view strongly contrasted with the existential philosophy dominant in the passing era, which idolized quite a different ideal, namely a medieval ascetic, permeated with the irresistible desire for eternal salvation. Now these desires gave way to the wish

to learn about everything that the world gave people in such abundance and the need for comprehensive knowledge and development of one's own personality.

The pursuit to obtain absolute humanity, however, was not something quite new and revelatory. The history of mankind knew it before, because it already took place in Greco-Roman antiquity, in the Hellenistic world of beauty and goodness and Roman virtues, which were physical vigour, courage, and strength. Therefore, the name "renaissance" means that after the collapse of the creative forces in the Middle Ages, ancient culture was revived to new life. The Renaissance strongly opposed medieval beliefs, distinctly moving away from the ideal, universal type of man and the vision of Europe as a Christian community. The position of medieval universalism was taken by individualism. The time of following strict authoritarian dogmas passed. Criticism, freedom of thought and action became freely and openly expressed. In socio-political life a tendency of particular states and nations to become distinct and separate units became apparent. The cult of the state, similar to the one manifested in the writings of the Greek and Roman authors, became noticeable. People were permeated with the desire for beauty and knowledge. The formation of this type of Renaissance man was much easier in Italy, since it was origin of the ancient Roman state, and the revival of ancient culture in Italy was a kind of return to the state's own traditions.

The herald of the new era became a brilliant sculptor, painter, architect, and poet, Michelangelo. This versatility of interests was typical of the people of the Renaissance, who yet kept their religious fervour alive. The fifteenth century gave the world another genius, Leonardo da Vinci, a great painter, architect, sculptor, theorist, researcher and philosopher of nature, one of the greatest artists of the Renaissance. Undoubtedly, one of the greatest of the great is also Nicholas Copernicus, my compatriot. I would like to devote a few words to him now.

NICHOLAS COPERNICUS

Although people dealt with astronomy since the dawn of civilization, especially in ancient Egypt and Babylonia, it was almost 5000 years before a new, heliocentric, theory appeared. It put an end to the theory recognized since the time of Ptolemy (the second century AD), the geocentric theory.

Nicholas Copernicus, the “mover of the earth, stopper of the sun and heavens”, published in 1543 a Latin work, *De revolutionibus orbium coelestium*, i.e. On the Revolutions of the Heavenly Spheres. Nicholas Copernicus, the youngest son of Mikołaj and Barbara, was a Polish Roman Catholic priest, a canon, born in Toruń. He was a true Renaissance man, thoroughly educated, with an extraordinary diversity of interests, and comprehensive knowledge. He studied at the Jagiellonian University in Kraków, then in Ferrara, Italy, where he obtained a diploma doctorate in canon law; he studied medicine in Padua, and after returning to Poland he started his medical practice. Copernicus mastered all spheres of human activity with amazing easiness. He published a book on trigonometry, then a treatise on the improvement of coins, because he was interested in economic, fiscal, and monetary issues. He successfully dealt with technical sciences, plumbing and metrology, constructed water supply systems, and drew the first maps of Poland, Prussia, and Warmia. Among his numerous activities he still found time to read ancient authors, translate Greek texts into Latin, and compose his own poems, also in Latin, as well as draw and paint.

THE MIGRATION OF GENES

Genes spread with people. One can talk about the great migrations associated with the movement of entire populations, e.g. Aryan peoples that is Indo-European and Indo-Iranian Mongol peoples, Turkic peoples in Europe and Asia, Bantu peoples in Africa, Polynesian-Melanesian peoples in Oceania and the explosion of nomadic Arab tribes in the Middle East and North Africa. Genes migrate along with the tribes and nations. They spread with immigrants, settlers and colonists.

ARYAN PEOPLES

It seems that the original homeland of the Aryan peoples was in the east and west of the northern coast of the Caspian Sea, so the steppe areas, forest-steppes and semi-deserts. Later, east of the Aryan peoples the Turkish and Mongolian steppe peoples evolved as well. What common traits of temperament and behaviour did people originating from the steppes share? Certainly, this type of life eliminated certain characteristics and strengthened others, especially those that encouraged adaptation to the environment. A condition necessary for survival in extreme conditions was frequently the possession of the physical mobility gene (PM), which was necessary for everyday searching for food in the wilderness, hunting, fishing in rivers, and later, after the domestication of animals, taking care of their animals and wandering with them in search of proper pastures. A gene that facilitated, if not determined survival was a high level of the g factor, mental acuity gene. The lands where Aryan tribes were consolidating were quite unpredictable as far as weather conditions were concerned. People had to survive periodic droughts in summer, mild and severe by turns, as well as very severe winters, little snowfalls followed very abundant ones, and floods. Weather phenomena, then, delivered extremely tough requirements for primitive, nomadic hunters, and then farmers, as far as these

people's level of intelligence was concerned. Weather eliminated individuals who were less intelligent, devoid of imagination and prudence. These died, surprised by hostile weather conditions as well as random accidents. Those equipped with a long version of the novelty-seeking gene, interested with their surroundings, searching for new settlements, new ways of survival were more likely to endure, just like individuals with the low level of the anxiety gene. It enabled making risky decisions about long journeys into the unknown. The Aryan peoples departed from their original settlements north of the Caspian Sea in different directions. At the beginning of the second millennium Aryans conquered northern India. Around 2000 BC Indo-Iranian Persians located in the current Iran, and soon afterwards the Medes (the ancestors of the Kurds) and the Parthians appeared there as well. Bacrians reached Afghanistan and Turkistan, and Tocharians migrated to the east and settled on the fringes of the Taklamakan Desert, and were in contact with the Chinese peoples. Indo-European peoples moved west. Greeks controlled the coasts of the Aegean Sea; north of them, in Bulgaria, Macedonia and eastern Serbia and the Thracians settled, and in neighbouring Romania, in the Carpathian Mountains the Dacians lived. In Central Europe, in Germany numerous and thriving Celtic tribes consolidated. Forcing the Germans to the north, on the Jutland Peninsula and Scandinavia, or according to others, Germans migrated to northern the Scandinavian Peninsula via the northern route using frozen Gulf of Finland and Bothnia, as the "fast way" to the west, the steppes of the Black Sea, used by all Indo-European tribes, had been closed by the tribes of Indo-Iranian Scythians, who in the mid-second millennium BC created a strong state and a great steppe culture of burial mounds that stretched from the Carpathians to the Volga. It was probably the Scythians who attacked the Indo-European tribes of pra-Balto-Slavic peoples living on the Black Sea steppes who then sought shelter in the swamps of Polesia. Numerous winding rivers, marshes, forests, and lakes in that new region were suitable for the Scythians, who were born horse riders and used to live in the steppes. Part pra-Balto-Slavic peoples migrated north, settling on the Baltic

Sea and giving rise to the peoples of the Baltic, Prussian, Lithuanians and Latvians; the southern part, who remained in Polesia gave rise to the Slavic peoples. Slavs, developing in the vicinity of Indo-Iranian Scythians, gradually intensified economic and cultural relations with them, which in turn resulted, among other things, in the similar wording and the pagan worship of nature.

Peoples deriving from the steppes and semi-deserts were equipped with many positive sets of genes. Difficult living conditions and unpredictable weather conditions caused a genetic drift that gave a chance of survival only to individuals having a relatively high IQ, the long version of the novelty-seeking gene (NS), and the high form of the physical mobility (PM gene). After the Aryan peoples who conquered Europe, the Middle East (Persia), central Asia and India, Turkic peoples appeared, and settled in Central Asia, the South Caucasus and Asia Minor (Turkey). Mongol peoples who troubled China for at least two thousand years, during Genghis Khan's reign created the largest empire the world, from Eastern Europe to China and Korea and from the Amur River to the Persian Gulf; they also attempted to conquer Japan in two great expeditions, but failed due to stormy weather at the Japanese Sea. The fourth group of peoples who succeeded in a huge expansion thus changing the face of much of the world were, after Indo-Aryan peoples, Turkic and Mongol peoples, Arab peoples, also nomadic, living in dry steppes, semi-deserts and deserts. United by the idea of Islam, in a short time they conquered the Middle East and North Africa.

GENES wander all over the world. Every community, every tribe, and every nation, regardless of the race, with the possible exception of very small, isolated and closely related communities, has a set of social genes in varying degrees of expression. The nature of a community, a tribe or a nation is determined by the combinations of genes most common in these groups, so one can talk about musical nations, artistically gifted peoples, the nations of travellers or merchants, which does not mean that all members of this nation have the ability

and the genes. In general, it is a minority, but by their actions its members provide hallmarks of their nation that are noticeable by other nations in their opinion.

Gene transference took place in antiquity and it takes place today. Genes leave some nations, and move to other societies and other nations. Genes leave not only nations, but also the provincial areas and small towns within one state and one country. By talking about genes leaving a province or a nation, one refers to persons endowed with certain combinations of genes or one gene conditioning amazing talents in any given direction, e.g. outstanding musical, vocal or mathematical talents or those with very high IQ wishing to obtain higher education, etc. This does not mean that these genes are going to be scarce in a given environment, as they may remain among the siblings, but in a different combination, e.g. vocal talent can be not expressed in a person with a high amount of the AI gene (avoiding injury), so in a person with reduced well-being, depression, decreased self-esteem and the lack of faith in oneself. Gene migration is limited at times, when they remain in one place, and the reasons may be numerous, including the lack of financial resources or the lack of elementary education and ignorance.

We can state that there are some phenomena connected with the migration of genes that is, leaving some populations by certain genes, and genes conditioning certain social and individual talents, as well as the condensation of these genes in other populations. This may refer to the populations of the same nation or some other nations. A place that is the target of all genes is the capital city of each country, which is the centre of power with its political, administrative, cultural and scientific systems, which are a magnet for energetic, curious, intelligent and gifted people, who see it as an opportunity for self-realization. This is the role of all attractive metropolises.

Sometimes state capitals are the centres of the formation of the nations. Certainly, one can say that Romans formed Rome, the French certainly created

Paris, and Moscow was definitely formed by Russians. All those cities towered over their subordinate territories with population, were the cultural centres, suitable for the place and time, and most of all the centres of strong central government. The stratification of genes within populations around the world is a permanent phenomenon that has taken place and will take place with the migration if not whole tribes and nations, then their members, seeking a better life. The diversification of nations in terms of quantity of possessed talents and the dominance of certain social genes is definitely a phenomenon that cannot remain unnoticed. Without a doubt, the history of particular nations contributed to this state of affairs. Nations that for a long time were subjected to foreign domination, combined with oppression, gave up the novelty-seeking genes, dominance genes, or unique abilities genes, as their holders in order to pursue those genes had to emigrate from their local environment and yielded to gradual acculturation and denationalization, which did not mean that these genes did not exist among these nations, but their “concentration” was lower. The oppressed nations, however, definitely revealed a higher “concentration” of the inwardness gene when compared with the nations of dominants.

Invasions and wars shaped the genetic nature of different nations in various ways. It depended on what the opinion the invaders had, how violent the invasion was, and whether local people had time and place to hide before the invasion took place. It happened that with the expected invasion by a cruel enemy, more affluent and culture-bearing social groups, princes, knights, clergy, merchants, craftsmen, scholars had time to take shelter and wait out the first period of the invasion. The victims of the invasion and the slaughter were the less fortunate, poorer groups of the society. When the invasion was unexpected, however, and the invaders were equally cruel and all could fall victim to their ruthlessness: rich culture-bearing social groups and poor common people. Only people scattered in small villages and hamlets could save themselves. If invaders did not inhabit the conquered territory, then the local population, either of tribal

or national nature, after some time, measured in generations, was rebuilt. But the distribution of genes in each case was different. In the first case, the intelligence quotient (IQ) of the entire population was slightly higher, while in the second case, slightly lower, because the culture-bearing part of the society, equipped with combinations of rarer genes, mainly higher IQ, was dead.

This selection of genetic material struck many nations. This also applied to the Jews, who in the past two millennia experienced numerous persecutions, pogroms and massacres, from which the intelligent and the most anticipating individuals were saved, so the Jews' IQ is slightly higher than the average IQ of many other nations.

SOME NATIONS

THE PHOENICIANS an extinct nation

The narrow land between the mountains of Lebanon and the Mediterranean Sea since the beginning of the third millennium BC was inhabited by Phoenicians. The coastline created the perfect environment for the development of ports, and the mountains with slopes covered in tall cedar trees provided excellent material for the construction of ships. Moreover, the country was situated on the crossing of important trade routes. All these factors promoted the development of shipping and trade. In terms of their ethnicity, Phoenicians were a Semitic people, descending from a group of Western tribes. These people probably had a high g factor (high IQ), which was expressed mainly in the realm of practical intelligence and mathematics, which enabled virtually all residents to lead prosperous and comfortable lives. Phoenicians profited primarily from highly developed crafts, overland and sea trade, and extensive exporting of their products, especially their cloths, especially woollen ones, dyed with purple. Other sought products were glassware, and ivory and metal products, which were much more sophisticated than those produced by the Babylonians and Egyptians. The neighbours appreciated Phoenician ships, known for their excellence. The hypothesis that the Phoenicians were practical people can be confirmed by the fact that they adapted the Egyptian alphabet and, after simplifying it, used it in business correspondence. They used 22 letter characters, meaning consonants (the Egyptian alphabet had about 700 characters). Much later, the Greeks used this alphabet to create their own version, and later Romans used the Greek pattern. The Roman alphabet, called also the Latin alphabet, became the foundation of the alphabets of most nations in Europe, Africa, America, and Australia. If the presence of a high IQ among

the Phoenicians was very probable, then the presence of the long version of novelty-seeking gene, which together with the very low version of the avoiding-injury gene (AI), so the low level of anxiety-prone personality, is responsible for forming a temperament willing to undertake long, dangerous, and risky sea voyages in the Mediterranean and beyond, can be confirmed without any doubt. The Phoenicians profited most from trade, hence their ships reached all the ports of the Mediterranean and the Black Sea region, the copper was [obtained] from the British Isles, they even ventured along the western shores of Africa. They brought back raw materials, and exported processed products, both their own and the ones they imported from other countries, especially in the East. The Phoenicians were involved in the slave trade as well. In order to improve the trade exchange they established their own trade districts in foreign cities, e.g. in Egypt or permanent colonies, e.g. Cadiz in Spain and Carthage in North Africa that over time had grown to become mighty cities.

It is believed that the Phoenicians had the high form of the inwardness gene (IN), because they revealed no tendency to form a uniform state, and limited themselves to a few well-fortified cities; the most famous ones were: Tyre, Sidon, and Ugarit. The desire for a sense of security and the dominance gene (power) was realized by gathering great fortunes. Phoenicians, without creating their own culture, but having unlimited contact with many peoples of antiquity, were able to assimilate their achievements themselves, and draw from the cultural and technological accomplishments of their neighbours. Because of the geographical location, Phoenicia not only gained a lot, but was also harassed by numerous invasions of ancient powers: Egypt, Assyria, Babylon, Persia, and gradually became dependent on them.

The European culture of the Mediterranean ring owed to Phoenicians not only the knowledge of a number of practical improvements, but also abundant output and achievements of Eastern civilizations. In spite of that Phoenicians did not enjoy the sympathy of the ancient Mediterranean world; one of the reasons were

ritual killings of children committed at the time of danger and war. The colony of Cartago (Carthage), founded by Phoenicians in North Africa had grown into a powerful city-state that had its dominions in Spain and Sicily. Following the wars fought with Rome, known as Punic Wars, Carthage, the last powerful Phoenician outpost, was finally defeated in mid-second century BC, and the state itself disappeared from history for ever. At the same time, in Phoenicia (modern Lebanon), the Phoenician language started vanishing, and was gradually replaced by Aramaic, which survived till the fourth century AD in the form of the Punic language. This language, in turn, about the seventh century AD was eventually supplanted by Arabic.

THE ETRUSCANS, an extinct nation

Etruria, the land situated in the north-western part of the Apennine Peninsula, on the Tyrrhenian Sea, now Italian Tuscany, was settled around 900 BC by the Etruscans (Tyrrhēni) who according to Romans, arrived from the east, and at least partially from Asia Minor. The Etruscans did not create a uniform state, but the political union of twelve cities ruled by kings. These were: in the south Veia, Chaire, Tarch(u)na, Velch, and Velzna; and in the north Rusellae, Valtuna, Clevsin, Gio, Curtun, Aritim, and Velathri. The union between these wealthy cities was a major political force which both the Romans and the Carthaginians had to recognize. The Etruscans owed their wealth to the land they lived on, rich in metals, such as silver, lead, zinc, and iron, which they used for manufacturing weapons, everyday objects, and works of art that were the subject of intensive trade with nearby Greek colonies in Italy and Phoenician societies in Corsica. Etruscans created rich non-material and spiritual culture. Their deep belief in an afterlife can be illustrated by funeral rites and the tomb ornamentation of carved stone as well as domelike ones, grouped in the cities of the dead.

The rich Etruscan society treated slaves well, and women enjoyed extensive legal and personal freedom. They ran their own businesses, rode horses, and

practiced sports in the nude. Romans always held against Etruscans that they loved feasts, and women were allowed to take part in them. They could drink wine, which was unthinkable in the culture of the Greeks and Romans, whose women spent their time at home, dealing with household activities as well as giving birth and educating their children. Although in 753 BC Etruscans founded the city of Rome (from Etruscan *gens Ruma*), thus combining in one unit the Latin settlement on the Palatine and the Sabine settlement on the Esquiline, Quirinal, and Viminal Hills and gave it their royal Tarquinius dynasty, they did not impose Etruscan morals or culture on Rome. If that had happened, probably the whole history of European culture would have been different.

Three hundred fifty years later, Rome, a populous city-state, economically and politically strong, took advantage of Etruscans' weakness caused by the invasion of Celts, who arrived from the north, and conquered the first Etruscan city, Veia (the ten-year war between Rome and the city of Veia, 406 – 396 BC). The last Etruscan city-kingdom Yolsinii, was conquered in 264 BC. The question arises why Etruscans, as a state and as a nation, disappeared from history so quickly that in imperial Rome no one remembered them? Etruscans might be the settlers from different lands of the Middle East and Asia Minor, seeking farmland, security, and peace from numerous wars, or perhaps they came as miners in search of metal ores, and consolidated in one place in one nation, and politically in twelve city-kingdoms. (The analogy to the Boers of South Africa). Etruscans were familiar with the cultivation of various crops, animal husbandry, mining, and metal processing, but they learned viticulture and winemaking from Greeks in Italy. What were the reasons of Etruscans' acculturation and disappearance in just few generations, as they were not killed by Romans or banished from their land, such as the Jews of Palestine? The Etruscans were quipped in a slightly or moderately expressed the dominance gene or the power gene. There are no known bloody struggles between Etruscan cities for gaining hegemony over

other cities or over the entire Etruria. They had a high or medium-high intelligence quotient (IQ), as evidenced by their craft abilities, and their culture. But surely the reason of their disappearance was the existence of the low version of the inwardness gene (cosmopolitan version), common in this community. As a result, just after a few generations they adopted Roman customs, language, and gods.

THE JEWS

Jews appeared on the arena of the Middle East ancient history at the end of the second millennium BC, in the Habiru state, later called Palestine. By that time all the great civilizations of the region had already been in full bloom for several millennia. This small country which was a bridge between Africa and Asia, that is between big, rich, and powerful Egypt, situated in Africa, and the countries of the ancient East, was the site that had been controlled, plundered, and used for military purposes by marching Egyptian, Assyrian, Babylonian, Persian, as well as Alexander the Great's Greek troops, and finally by the army of Roman Empire. Jews, as one of the ancient peoples of Palestine, were taken captive, deported (Babylonian captivity), and finally banished from their country by the Romans. Therefore, one cannot speak of any independent or original development of material Jewish culture significant for the history of the world, as there were no favourable conditions for that. The history of Jews and ancient Israel is best known in the Christian world. It was because of a unique in those ancient times monotheistic religion of Jews, declaring the existence of only one god, Yahweh, while the beliefs of neighbouring countries and societies were full of gods, Greek, Roman, Babylonian, Phoenician, Persian, and Egyptian ones. Christianity, a religion of over one billion people in the world, which grew out of Judaism, or the Jewish religion, constantly maintains knowledge of ancient Israel. Otherwise, one would know less about Israel than about ancient Assyrians, the last representatives of which live in obscurity to this day in the Middle East. Jews, who for two thousand years lived dispersed in many

countries, both Christian and Muslim ones, created many defences against assimilation, including numerous religious and social orders and bans, community interactions, and national solidarity.

THE JAPANESE

This island nation formed from the mingling between two original inhabitants of the islands, Micronesian and Ainu peoples, successive waves of Mongoloid immigrants from Korea and mainland China. The Japanese showed little interest in the outside world. Even the large island of Hokkaido, situated in close vicinity, and inhabited by the Ainu people did not raise Japanese interest till the nineteenth century. The migration from China to Japan continued for at least two millennia. One can assume that it was special migration, the migration of the elites. China, shaken by numerous civil wars, combats between various Chinese states, as well as external invasions, threw away refugees, both Buddhist monks who sought peace and meditation, and members of the ruling elites, officials, scholars, philosophers, who on those far eastern islands, far beyond the reach of the power of the emperors, looked for peace and security. The best-documented migration from China to Japan took place between the fourth and the sixth century AD, during the division of China into Northern and Southern Dynasties, the kingdoms of foreign nomads the North and West, and constant wars. Chinese immigrants brought with them all the achievements of Chinese culture, including writing and religions: Buddhism, Confucianism and Taoism. Immigrants brought a full set of genes with the high g factor gene (high IQ), a relatively high IN gene (inwardness) and the average novelty-seeking gene. Although the IQ of an average Japanese person is slightly higher than the IQ of a white American of European descent, it is not them who for millennia advanced material culture. The oldest traces of this culture are relatively scarce in number, and the only artefacts of this culture that survived till this day are clay products. It was only in the sixth century AD, with the adoption of Buddhism and Chinese culture, that sacred art began to flourish, particularly in

architecture (pagodas), artistic crafts started thriving, particularly weaving (silk), ceramics, metalwork, lacquerware.

The first products of the spiritual culture in the literature had been recorded only in the eighth century AD with Chinese writing. Additionally, the first mention of the Japanese nation comes from the modern era. The first date which historians consider confirmed is the year 57 AD, in which the Chinese emperor acknowledged one of Japanese rulers as a king. Although they were a nation of sea people, and practiced piracy off the coast of China, they did not circumnavigate Africa and did not establish any trading posts in Europe.

All these deeds were done by Europeans, who discovered America, circumnavigated Africa, and explored the whole world. It can be assumed that towards the peninsula called Europe that was a kind of bag, surrounded by seas and impassable Atlantic Ocean, travelled numerous peoples who left their genes there, from Indo-Europeans, to the Mongolian Turkic, and the Semitic peoples, i.e. the Phoenicians, Jews and Arabs. All these peoples left their physical mobility genes, high IQ, the long version of the novelty-seeking gene, and brought numerous memes of knowledge with them.

THE BASQUES

Basques constitute an interesting and unique European people. They are the population with the highest rate of the absence of Rh factor in blood (Rh-) in Europe; it is as much as 30%. The Basque language is not an Indo-European language and cannot be compared with any known language in the world. The language they use is one of the biggest mysteries in Europe. Some linguists have looked for distant parallels between the Basque language and the Caucasian languages, but this thesis is difficult to defend. Probably, Basques preserved most from the legacy of the original people who lived in Western Europe in the Upper (Younger) Paleolithic, 40000-8300 BC. After the warming of the climate (Neolithic) a number of new peoples and new cultures began arriving to Europe,

both from the south and east, and pushed the original population into the Pyrenees, and there these people consolidated into a group that today is known as the Basques. Basques had survived the colonization of Spain by the Iberians (the name is derived from the name of the Iberian Peninsula), who came from the south, i.e. from North Africa, and the Celts, who came from the north. They survived the reign of Romans, who imposed their organization, cultural patterns, and linguistically Romanized almost the entire population of the Iberian Peninsula, the Basque being the only exception. Basques survived the invasions of Germanic Alani, Vandals, Suebi, and Visigoths, and then the centuries-long domination of Moors and Castilian Spanish rulers. They survived to the present day as a small nation with its culture, language, and the highest incidence of Rh-subgroups in the world. Without doubt, they are the oldest indigenous people of Europe. In terms of anthropological features they are characterized by a massive physique.

THE AMERICANS

[North] America, and especially the United States, is a group of countries of immigrants from all over the world and of all races. In geographical terms, the whole [North] America its northern, central, and southern part consists of countries of immigrants and people of mixed origin. The U.S., took the concept of American people as a whole, and this applies to all those who have American citizenship. This country, in fact, has several communities separated by invisible barriers of the sense of belonging to a particular community they deem their own. These are the communities of white Americans, African-Americans, and Hispanics, not to mention multi-million communities identifying with the countries of their origin, such as the Chinese, Puerto Ricans or Mexicans and Cubans. American Jews, following the principle of mimicry, assimilated into the society of white Americans, in terms of language, taking Americanized names, etc., but due to a sense of belonging to Judaism and the Jewish people they constitute a separate, closed social group that, through the so-called New

Synagogue, accepting intermarriage and tolerant towards religious conversion, has been assimilating white Americans, and this process is further strengthened by the high economic status of the Jewish community in the United States.

In the U.S., one cannot see the beginning of the integration of white, Afro-American, and Hispanic societies. In this respect Americans resemble Romans a little. While one talks about the American nation, in fact it is assumed that an American citizen equals every person that has American citizenship. One does not discuss Roman nation, but only about Roman citizens, the inhabitants of a city-empire. The road to Roman citizenship was open to everyone, although it was not quite simple and easy, but the fact that people from the lower parts of the society, or of foreign origin could hold high positions and even include the imperial throne in Rome proves that the city was open to all those who were very talented and imaginative.

On the one hand, the United States resembles Rome, and on the other hand, India, where numerous peoples of various origins live together; these groups partially mingle with each other, but do not integrate internally.

THE POLES

Five out of six major Lendian tribes took part in the forming of Polish nation. The six tribes were: Polans, Vistulans, Ślężanie, Mazovians, Pomeranians and Polabians. The last people, Polabians, were not included in the Polish nation, since as early as the tenth and eleventh century, when the Polish statehood was being born, the Polabians were already subject to strong German domination. During the following centuries they became totally Germanized, although in the sixteenth century they still existed and inhabited the areas west of Berlin, on the other side of the Elbe in the so-called Lüneburg Heath. The Sorbs, non-Lendian Slavic tribes, were slightly better. They survived in Germany till this day, despite intensive Germanisation, west of the Lusatian Neisse, on the border between Poland and the Czech Republic. Lendians, called by Eastern Slavs,

Lachy must have constituted strong and cohesive tribal group before general expansion of the Slavs in the fifth and sixth centuries AD, since the name had been known by all the tribes of the eastern Slavs before the formation of the Polish state, and travelled to the south and the east of not only Europe but also Asia, where the name Lechia was used in the past and is still to identify the state and territory on the Vistula and the Oder Rivers. Lendians settled in central Europe, west of the Bug River, that is, between the Bug and the Elbe. Probably, they met with a small substrate population, consisting of the remains of the Celts, Germanic peoples, and Illyrians who contributed to the territorial and tribal differences in the Lendian language. This influence did not have to be significant, as proven by mostly Slavic place names, the names of rivers, and landforms, particularly west of the Oder River, in present eastern Germany. In that area a large number of Slavic names, including Berlin, Leipzig, Dresden, Rostock, Lübeck and Schwerin, prove that the Slavs entered between the Oder and the Elbe into the void created after the settlements in these lands were abandoned by the Lombards, Burgundians, and Vandals. The first of those three peoples, taking advantage of the fall of the Roman Empire, settled in northern Italy, in what is now Lombardy; Burgundians settled in the present French Burgundy; and the Vandals as far as North Africa. Lendians, as a large and compact group of tribes, left the territories they previously occupied, probably the lands of present western Ukraine, i.e., Volyn, Podolia, and Polesia, and in the north and the lands of present-day Belarus, where probably their neighbours were eastern Slavs, later called Northern or Zalesyan Rus, meaning “beyond forests”. The thesis on this early neighbourhood can be supported by the common pronunciation of many names of places, objects, and activities that begin with a consonant “g”, e.g. Polish: *góra* [mountain] and Russian: *gora*. Eastern Slavic tribes on the central Dnieper River, who occupied the land abandoned by Lendians, alternated the consonant “g” with “h”; Polish: *góra*, Russian *gora*, and Ukrainian *hora*. The language of the northern tribes, partially ones pushed to the northeast, gave rise to the Russian language.

The establishment of a strong centre of state power among the Lendian tribes was an event worthy of the creation of the Polish people, and the history of the whole central Europe. The spontaneous creation of an ultra-tribal state was not something simple or easy; this can be proven by the example of Poland's western and eastern neighbours. A spontaneous formation of the Polish state was the result of a random and accidental concentration of a set of "social" genes, which occurred in a small and unknown Polan tribe no one had heard about; this appeared during the time of intensive social diversification within family-tribal community. Every time when something like that happens, i.e. when a small tribe quickly creates its own statehood on its own, the first ruler and his successors need to have a stable set of genes: a strong dominance gene, a weak necessity for authority gene, medium or low level of anxiety, a strong physical mobility gene, a strong novelty-seeking gene, and a high g factor (IQ) (mental acuity) or high intelligence quotient. If this set of genes repeated in the first ruler's successors, his sons, grandchildren and great-grandchildren, then a dynasty with undisputed rights for reigning by birth was born. Such monarchs had to be surrounded by a fairly large group of supporters that would be gifted with intelligence, physically active, novelty seeking, with low anxiety level, average dominance gene, and the strong need for authority gene.

This group of people was gathered around their prince, hoping for personal gain, more interesting life, followed his commands and created the administrative system and military power subordinate to him. This group of warriors or knights, in turn, forced the ruler to organize plundering or invading expeditions to neighbouring territories in order to meet the need for fame and wealth.

A hypothetical founder of the dynasty, who eclipses people around him, cannot be surrounded by competitors endowed with the same features (genes). The absence of such competitors is extremely rare. Most frequently, they are eliminated as a result of long wars, coup d'états or assassinations.

A theoretical ruler, elected the chief or the prince of the tribe, having a full set of the above-mentioned genes vital for creating a strong commanding power, is not able to fulfil it if he is surrounded by people with a low need for the authority, living their own lives, not very smart and inactive, with a low need for novelty seeking. In this environment, he was not able to create an efficient and subordinated group of sergeants-at-arms willing to act. This situation applies to many tribes that had never created a central government and never had statehood.

Polish neighbours, both in the east and the west, did not create their own independent states, which does not mean that they would not have been able to build it; it just happened otherwise. The Germans were conquered by Franks, who were a Germanic tribe, but were already culturally deeply Romanized, and who first joined the states of Bavaria and the Rhineland, and later, very violently, in the period of thirty years (772-804), subjugated and Christianised the Saxons, thus leaning the eastern borders of the Frank state on the River Elbe. The foundations of the German state were laid in 843 when, under the treaty of Verdun, the Frank state was divided among the sons of Emperor Louis the Pious into three kingdoms; the eastern kingdom gave rise to the German statehood under the leadership of the Frank dynasty and Frank and Burgundian feudal lords.

In the east, the Swedish Normans, called Varangians, formed on the other coast of the Baltic Sea, among the people of Finnish origin, small dominions which were the outposts for trade as well as plundering expeditions into the Black Sea, Byzantium, and the lower Volga River. The name that clung to the Varangians as Swedish Normans was, according to some authors, the name of the land they came from, situated to the north of present Stockholm, a small land called Ruslan. Others argue that Ruś was the name of the Varangians' leader, and still others claim that it was a name derived from the Finnish words *ruttsy* or *ruotsi*, since this was the name that Finnish peoples gave to Swedes. One way or

another, the name *Ruś* stayed with Varangians, who starting from their small Finnish sovereignties in a short time conquered all East Slavic tribes, and created a great state initially called Novogorod *Ruś*, and then, after the moving of the capital to Kiev, Kievan *Ruś*. Russian eponym, *Ruski*, is an adjective name, and means a Ruthenian.

The absence of written documents on the organization of the first Polish state was replaced by legends, e.g. the one on Piast, who ascended the throne after the unworthy Prince Popiel, as reported in the twelfth century chronicler Gallus Anonymus, or the one on Prince Krakus and his daughter, Princess Wanda, written by Wicenty Kadłubek. It is certain, however, that Slavs from the Vistula and the Oder first employed a family-tribal system, based on kinship and tribal communities, providing more effective care and safety in contacts with strangers. Some more vulnerable tribal communities, on their own or under pressure from the stronger neighbouring tribes, united in bigger tribes that, over time, probably in the ninth century, began to take the form of inter-tribal unions, and these led to the first state organizations. The area between the Baltic Sea, the Carpathians, and the Sudeten there were two dominant tribal centres: the first centred around Vistulans, on the upper Vistula River, the second around the Polans who lived on the middle Warta. When the Vistulans were defeated and absorbed by the Great Moravia State towards the ninth century, only the Polan centre remained, and it gave rise to the State of Gniezno. According to oral tradition of the Piast family, the Polan tribe overthrew the former ruler, the legendary Popiel and during a tribal meeting elected a wheelwright as their next prince, his name was Piast. Piast the Wheelwright was either a strong member of the tribal community, or a quiet and calm man, as a genealogical story of the Piast dynasty has it. He had no enemies and his election was a compromise acceptable to all parties. Perhaps only after he was elected the prince of a small tribe unfamiliar to anyone, with no record among the geographers and travellers at that time, Piast revealed his brilliant leadership qualities. The fact remains that

his great-grandson, Prince Mieszko I, was the first historical Polish ruler, who controlled vast areas on the Vistula, the Oder and the Warta Rivers. He married a Czech princess, Dobrawa, and in 966 he was baptised, and consequently the whole state became christened. This act, however, was not tantamount to Christianity of the whole population; a missionary process lasted for years, when followers of the new religion and the old one coexisted and functioned next to each other. There is no doubt, however, that as early as the end of the tenth century Christianity resulted in the fact that the state of Polans began defining its own place in emerging Europe. The state entered the realm of the Christian West, Latin Europe.

A prince was the master of the country, the source of law, the supreme judge and leader. He declared war and made peace. The State of Polans revealed expansionist tendencies manifested towards its weaker neighbours. Neighbouring lands that were gradually connected with Polan princedom formed Polish lands, i.e. the lands that belonged to Polans. The land belonging to Polans is Polish land, which is an adjective name, just like royal land belonging to the king, or gentry land belonging to the gentry. From this definition, Polish land, land owned by Polans, the name of the county and the state, Poland, was later derived.

Western neighbours, the Germans, who had been in contact with the expanding Polan princedom, accepted the name of the tribe as the name of the state, Poland, hence the German name *Polen*, French *Pologne*, and Latin *Polonia*. The name *Polonia* was strongly promoted since the Congress of Gniezno by a Polish ruler, and later the first crowned Polish king, Boleslaw the Brave.

People living in the land of Poland, following the rules of Polish grammar, are called Poles [*Polacy*], the singular form is Pole [*Polak*]. Similarly, people inhabiting the land of Krakow are called *Krakowiacy* (one man is a *Krakowiak*).

In the course of the ethnogenesis of the Polish nation, as a people of Central Europe, i.e. a people who racially belong to the transitional mixed populations, one needs to distinguish the periods in which foreign influences were absorbed by the Polish element and polonized. The first period fell between the eleventh and the thirteenth centuries, when Polish towns experienced the influx of German craftsmen and merchants who populated them. German element appeared in Poland after the Mongol invasion of 1241, ended with the defeat of the Silesian knights at Legnica, where Prince Henry II the Pious, a Silesian Piast and the heir to the Polish throne died. He ruled Silesia, Lesser Poland, Krakow, and the majority of Greater Poland.

German farmers, who came from the west bypassing the Slavic Lausitz, began settling in the settlement void, created in Subcarpathia, Lesser Poland, and Subudetes in Lower Silesia. Some remains of this process are still visible in the names of towns in Little Poland, for example Szymbark, or Łańcut (Landschut). Within the Crown, the Kingdom of Poland, German colonization, both urban and agricultural one, had been absorbed by the Polish element, but remained in Lower Silesia, which was separated from Poland and for many centuries went under the Czech rule, then became a part of Austrian kingdom, then Prussian, and finally it was under Hitler's Third Reich. The German population left these areas as a consequence of losing World War II by German Reich, and the subsequent decision of the victorious powers: the United States, Great Britain, and the Soviet Union to resettle them in 1945-1947 within the German state borders, designated by these victorious powers.

“THE NATION OF NOBILITY”

Polish knighthood, founded on the Lendian home ground within the Polish state in the thirteenth and the fourteenth centuries, was transformed into nobility more interested in guarding their farms and possessions than in their military skills. The union of the Polish Kingdom and the Grand Duchy of Lithuania in the fifteenth century, and the birth of Polish-Lithuanian Commonwealth resulted in

the rapprochement of the Crown and the Lithuanian nobility (in 90% of Ruś descent, not Belarusian and Ukrainian, because such concepts were unknown at the time), and ethnically Lithuanian and Samogitian origin in 10% as well as of German origin from Royal Prussia, Polish Livonia and Courland.

Joint military expeditions, holding public posts, joint meetings and parliaments continued bringing this diverse nobility together; later it was joined by rich German, Armenian and Jewish townspeople, who bought themselves nobility. Among the Jews it was connected with the adoption of Roman Catholicism or, less frequently, the Protestant creed. Catholicism was also adopted by the majority of Rus nobility that gradually underwent Polonisation.

In the seventeenth century the nobility of the POLISH COMMONWEALTH (*Rzeczpospolita*), calling themselves the noble nation, accounted for approximately 10% of the population including the impoverished homestead and clerical nobility, having no land estates, and called *golota* (trash).

The ethnogenesis of the Polish nation, apart from the five indigenous Lendian tribes (with the exception of the Germanized part of Western Pomerania and Silesia), was also participated by nobility, and the north-eastern borderlands, the Uniate population, mainly of Belarusian origin. During the Partitions of Poland, the Russian Uniate Church, recognizing the Pope as the head of the Church, was abolished under Russian Rule, and the Church was assimilated the Orthodox Church, subordinate to the Moscow patriarchy. As a consequence, a large part of the faithful joined the Catholic Church and adopted Polish national consciousness.

The “exchange of blood” among neighbours occurred in the south-eastern borderlands, where marriages between Roman Catholics, the members of Orthodox Church, and Greek Catholics for centuries were a common phenomenon. Following the prevailing custom there, the sons of Catholic fathers were baptized in the Roman Catholic church, and the daughters of mothers

belonging to Orthodox Church were baptized in the Orthodox Church or Greek Catholic Church, and vice versa.

It was as late as the nineteenth century when, with the participation of the Austrian invaders, nationalist sentiments began to build up and a line was drawn according to the principle that Roman Catholics were Pole, the members of Orthodox Church or Greek Catholic Church were Ukrainians.

The “EXCHANGE of blood” among neighbours. If two nations for many generations live side by side, then the less dissimilar from each other they are with regard to their appearance, especially their skin complexion, the more common the exchange of “blood” and genes across fences becomes . Jews and Poles lived for 700 years side by side, and contacted each other on daily basis. It must have led to the exchange of blood that was difficult to quantify, but certainly must have been significant. We can call this phenomenon the exchange of blood across “fences” working both ways. I mean children who were abandoned, and then adopted by a family, the children born as a result of rape, children born to maidens, and children born out of wedlock. Additionally, Poland has had Dutch settlers, during the reign of Queen Bona, Italian immigrants became quite common; in the eastern borderlands there were Tatar, and in the cities, Armenian settlers.

THE POLISH HIGHLANDERS

The Polish highland culture is relatively recent. At the time of the formation of the Polish state the mountains were scarcely inhabited and covered with forests. Slavs, including Poles, descending from lowland areas, the lair of the Slavs, the Pripyat River basin, i.e. Polesia, did not know the highland structure. In the fourteenth and fifteenth centuries nomadic Walachian herders appeared who grazed cattle and sheep. Polish nobles willingly settled in small mountain communities, which soon turned into populous mountain villages, due to subsequent waves of migration of the Polish population from the plains.

Walachians left some names related to the pastoral economy, dress and the elements of music labelled as highland. The settlers certainly characterized with the PM gene of physical mobility, and the long version of the novelty-seeking gene, and fled from the plains to protect themselves against the growing oppression of serfdom, restraints, and poverty. The evidence for the widespread presence of these genes in the population of highlanders is a phenomenon encountered nowhere else Poland, namely mass seasonal or permanent migrations of entire villages to foreign countries, mostly to the United States.

THE POLISH LANGUAGE

Polish language, called in the interwar period Polish literary language, is not a simple continuation of any tribal language or dialect. Assimilating the tribes into a uniform Piast state blurred language differences, and created conditions favourable for the creation of one common language constructed out of the regional dialects. It was formed in the course of centuries-long mixing of different tribal dialects at the royal court, at the courts of princes, during the noblemen's regional diets and conventions as well as due to various meetings resulting from social life and family celebrations. It was also used as a mode of communication by Catholic Church in the Crown, and later in the Polish-Lithuanian Commonwealth.

The Polish language, which evolved from the Lendian tribal languages and began to be widely used by the nobility, the clergy, and the bourgeoisie, over time, began to influence them, and finally turned into their own dialects. This phenomenon was more intense in the centre of the Crown and near large cities, such as Krakow, Poznan, Warsaw; the process was less intense on the peripheries of ethnically Polish territory, such as Pomerania surrounded by foreign German element. In the early years of the Polish statehood, with the introduction of Christianity, Latin served as the official language, its function was similar to the role English or French has in post-colonial countries today.

Latin permeated religious life, but became the language of the chroniclers, historians, and officials preparing documents in Latin; the sole Polish elements were the names of places, some names of people, the names of levies and duties of the subjects to their prince, or monasteries; less frequently these were the names of the offices and court deadlines. One of such historical documents is the *Gniezno Bull*, released in 1136, containing more than four hundred Polish names. The first text written entirely in Polish consisted of the first two stanzas of *Bogurodzica* [Mother of God], probably composed in the late thirteenth century.

This state of affairs lasted until the mid-sixteenth century, when the role of Polish began to increase, which was ultimately expressed in the works of literature. Nevertheless, for many years both languages operated parallel.

In Poland, the national language entered the literature in several centres: in Galicia (*The Holy Cross Sermons*) in Greater Poland (*Gniezno Sermon*) and in Mazovia (Master Polikarp's Dialog with Death). The introduction of printing and the appearance of the first Polish books in the early sixteenth century were an important stage in the development of Polish literary language. The sixteenth century, became the "golden age" of Polish language, mainly thanks to the oeuvres of Mikołaj Rej, Jan Kochanowski, Łukasz Górnicki or Piotr Skarga. The development of political, economic and cultural relations with the various countries brought the inevitable linguistic borrowings. The Polish language is not free of them, and contains many borrowings from other languages, mostly from Latin, but also from German, Czech, Hungarian, Italian, and French; Polish also took some words from Turkish-Tatar languages, and extensively drew from Ukrainian.

Contemporary Polish used in the country today is almost homogeneous. World War II and the subsequent displacement of the Polish population from the borderlands to the Western and Northern Territories, contributed to this situation, as the newcomers together with the local populations and the migrants

from central Poland created new communities. The unification of Polish was further consolidated by the fact that after World War II, Poles consciously either eliminated or at least reduced German, Russian, and mainly Ukrainian expressions in their speech. Additionally, the process of word-formation in Polish intensified, especially in the realm of technology. The second factor unifying the speech was massive influx of young people from overpopulated villages to the cities during the time of the first post-war communist country industrialization. As a part of their social advancement these young people did not want to differ from their peers from the cities, abandoned the dialects learned at home, and assimilated Polish literary language in everyday life, known today as the Polish language. Obviously, the unification of language takes place in schools, newspapers, radio, and recently television.

THE CENTERS OF DEVELOPMENT OF MODERN CIVILIZATION

As I have already stated, the first civilizations were created in so-called “migration drafts”: on very fertile lands along the rivers, surrounded by deserts or mountains unfavourable for life. The process of gathering of what I called here the gene and knowledge memes pool favourable for releasing the development of civilization lasted few thousand years, from the beginning of the Neolithic Period, before the first marks of civilization appeared in the form of political organizations, the first organized religious cults and evidences of material culture, that today are considered the beginnings of ancient civilizations. But as early as antiquity the centres of civilization, with the development of trade, went beyond the area of “migration drafts”. Culture began to grow mainly in the cities, and reached the Asia Minor, the coasts and islands of the eastern Mediterranean (Crete). It grew in the cities and political centres of China and India, which were the seats of the ruling dynasties. This state of slow development of culture and civilization lasted for several thousand years, until the early stages of Industrial Revolution in the nineteenth century. Since then, there has been dramatic growth of knowledge and technology, the understanding of which is currently beyond the comprehension capacities of an average person. It is clear that this burst of growth of knowledge in all directions requires huge amounts of money, and as a result only the richest countries in the world can only afford it. Nevertheless, wealth and extensive financial resources are not sufficient to ensure the rapid development of science and technology; in order to achieve that the human factor is necessary, namely, great intellectual potential of working scientists. The United States, a country with its several-hundred-million population, and its excellent schools, universities, and research facilities at the

highest level, educates millions of young Americans, and still is not able to pick out the sufficient number para-prodigies and prodigies among them.

Thus, the Silicon Valley and hundreds of other powerful research institutes, apart from American researchers and scientists employ immigrants from all over the world, of different nationalities and skin colour: from Europe, China, Japan, India and many other Asian countries, all of whom were attracted to America by the prospect of high salary and interesting work. This phenomenon, known as brain drain, is nothing more but robbing the poor, and especially small nations, of the triad of core genes of high creative intelligence, that is the high g factor (IQ), the long form of the novelty-seeking gene, and the very need for the authority gene in its low form, conditioning the independence of judgement.

But it turns out that the brain drain is used not only by world powers that want to maintain a top position in the science race. It also involves small but rich countries that cannot utilize the already existing top achievements in technology and science with their own biological and genetic potential.

On average, this triad of genes is present in a few per cent of people in a population, so self-satisfied politicians, passively looking at the emigration of most talented young people abroad commit a far-reaching crime against their own people.

HUMAN CULTURE

The ability of think and understand is guaranteed in humans by the HSB gene. Humanity is knowledge, laboriously acquired for at least two hundred thousand years, a grain of sand added to other grains of sand and meticulously passed down from generation to generation within the same social group, and then made available to other communities or acquired by them in the process of interchange. The knowledge of man about himself and the world that surround him gave rise to material culture first, then to spiritual culture, to the social and

behavioural patterns of and individual expressed in legal standards, correcting emotional and impulsive behaviour.

Knowledge on both material and social behaviour, the legal rules and prohibitions are presented by parents, schools, and media, i.e. the press, radio, TV, and the Internet. However, the evaluation of the obtained knowledge is presented by parents, but also by a person's surrounding: the streets, and general environment in which a person functions and lives, as well as cultural milieu to which he or she belongs. Cultural sphere in which a person grows up and develops, can be further divided into social circles, from the lower classes to the educated ones, culture-inducing and embedded vastly understood realm of European culture, which grew out of Greco-Roman and Christian traditions, but also derived from Arab customs, descending from the Middle Eastern, Islamic, and Indian traditions, rooted in Buddhism and Hinduism, or Chinese thought, built upon the philosophy of Taoism, Confucianism as well as Chinese Buddhism.

The great cultures include numerous minor cultures created from blending universal principles of a given great cultural circle with deeply ingrained cultural phenomena of different races of tribes and nations, resulting from old tribal vestiges of traditions, of ancient origin, and only partially related to these major circles of culture.

In addition to these great circles of culture there are several dozen of smaller, unnoticed, neglected, and quite distinct cultures that recognize different values, different outlook on life and the world, other joys and other structured existential fears.

The achievements of mankind throughout history have been unusual. Metaphorically speaking we can say that they are of cosmic magnitude, since parts of these achievements in material sphere (Great Wall of China) are clearly visible from space. The phenomenon of the transformation of the world in the

surrounding reality, to a different extent, is present in the animal world as well, e.g. a beaver can significantly change the landscape and subordinate nature to suit its needs. Similarly, we can be impressed by termite mounds, the constructions illustrating social divisions among these insects. On the basis of the architectural constructions, thermonuclear explosions, and material heritage we express unceasing admiration and appreciation for the vast capital of knowledge and skills to apply it in practice humans constantly manifest. What is more, these skills are constantly developed by human race.

Looking at the Earth from space we could draw certain conclusions on the knowledge humans have and their familiarity with universal principles of physics. Nothing could be said about the sphere of non-material culture, i.e. spiritual concepts, philosophy, life, the interpretation of the world, the needs and desires of the human race, as well as its fears and hopes. Using the metaphor again, when looking at the human race from afar, from outer space and having a wealth of knowledge about it at one's disposal, we could imagine that all human achievements in the sphere of non-material culture were placed in four major, distinct, almost translucent and thin-walled large spheres floating above the Earth. Those spheres contain four distinct philosophical outlooks on life: Euro-Christian culture, Arab-Muslim culture, Indian culture, and Chinese culture. Each of these spheres sends beams of different colours towards the others. Some of these rays enter into the other spheres of culture, and some bounce and scatter, unable to penetrate the shield of a different culture. At the bottom of each of these spheres we can see a multi-colour glow associated with the non-material culture grown out of the impulses, instincts and genes that has had an impact in it.

CULTURE VS. DRIVES

The drive to eat as opposed to the drive to breathe and drink was the source of numerous manipulations that grew from various philosophical, metaphysical and

religious views, formed as early as the beginning of the development of human culture in all of its spheres: Egyptian-Middle Eastern, Indian and Chinese. Its major manifestation was asceticism, refraining from eating, fasting, as a personal gift to variously understood and interpreted supernatural forces, gaining merit or paying homage to them; in some philosophical currents, like Buddhism, it was a form of internal improvement and gaining inner strength.

There is a taboo on eating certain foods, e.g. Semitic peoples, Arab-Muslims and Jews do not eat pork, treating it as animal food that is unclean. In India, the Hindus do not eat or kill cows, as they are considered sacred animals. On the other hand, in the realm of Chinese culture, which is characterised by extreme culinary diversity, there are provinces where “anything that moves” can be consumed, including rodents and dogs that are specially fattened for that purpose. People generally never ate prey animals, especially mammals, with the exception of the Chinese cultural realm. In European culture, there has been no taboo against consuming any animals, but usually prey animals were not used as food. Different cultures have developed specific ways of eating, in the cultures of the East people usually eat with their right hand, as the clean one. The left hand is unclean, and is used for other activities. In the domain of Chinese culture, people took up eating with two sticks, and in European culture people used their both hands and availed themselves of a knife, a spoon and a fork. Most of the nations and peoples of the world have been eating mixed, plant and animal, foods in different proportions, except in extreme cases, such as the Inuit in the far north, where there are no plant products. The discussions on nutrition that currently have been sweeping in the media: on the superiority of vegetarian diet (only foods of plant origin), on mixed and meat diets, etc. find no support in real life. It has not been proven that the Maasai, consuming mainly beef, milk, and bovine blood have a shortened lifespan than other populations. The same applies to the Argentinians, eating huge amounts of beef; the Saami, reindeer meat-eaters, or the Norwegians in the north and the Japanese who eat a lot of

fish; it has not been established that any of these ethnic groups live less longer than, for example, the inhabitants of central Europe eating large amounts of cereal products. For hundreds of years people mainly fed on animal food, fish, and mussels. Human body does not even produce certain amino acids necessary for life, called essential or indispensable amino acids, which have to be supplemented by eating animal products. With the development of certain religious and philosophical currents **THE NEED FOR SECURITY** was consciously rejected and was manifested mostly in the form of solitary wandering beggars wandering or hermits leading a secluded life. Rejecting the sense of security was often combined with conscious fasting.

THE SEX DRIVE

The first and probably the strongest sex drive, or the access to procreate, the reproduction and transmission of a person's genes to his or her offspring has resulted in a number of different solutions among human cultures, mostly involving the right of possession or ownership, or a sense of ownership of a member of the opposite sex, usually a woman, or even several women, by one man. This also resulted in a variety of sexuality-mystical practices manifested in various religious and philosophical movements, e.g. in Chinese Taoism, Hindu Tantrism, or the ritual Tibetan Buddhism, as well as periodic exchange of wives practiced by the Makassars of Indonesia, on the island of Sulawesi, and different practices and cultures of numerous primitive and isolated tribes.

Monogamy is a cultural imperative formally observed for centuries only in the domain of Euro-Christian cultures. In the cultural sphere associated with the sex drive, each of the great cultures has its own distinct experiences, myths, and customs. One thing remains certain, that the initiation of a stable relationship between a man and a woman in the form of a wedding is an exclusively human invention. In animals, the act of procreation or sexual intercourse begins with courtship, sometimes full of dignity and grandeur, sometimes violent and aggressive, and ends with the sexual act. No animal species enters marriage, or

celebrates the wedding by a reception with many invited guests. It seems that in the past organized societies that had created some form of superior power in order to prevent social unrest related to the kidnapping and incapacitating women, had formed the custom of a formal wedding that gave the right to own a woman as a wife; the right was guaranteed by a sovereign, a government, or a state. The extent of the problem the situation posed for the first communities can be illustrated by the fact that Moses' Ten Commandments has a binding order "You shall not covet thy neighbour's wife." Ancient peoples of Mesopotamia and the Hebrews defined adultery as a sexual intercourse between a married woman and a strange man, not because he was not her husband, but because he did not have any property rights to that woman. The wife's main task was to bear children, and the order to preserve her personal inviolability was to ensure the rightness of the offspring and the heritage.

Further development of the custom of marriage, which in many cases did not pass the test, e.g. among the scattered nomadic tribes, where tribal and state authority was weak, two forms of guaranteeing the stability of marriage evolved, they were understood by all: the purchase of a wife, and the acquisition of property rights, practiced to this day, and later, during the development of the great religions – the sacralisation of marriage. The latter form, pledging the marriage in God's hands effectively protected poorer men, who did not have extensive power against the lawlessness of nobles and even kings. Of course, the sacralisation of marriage essentially protected it only within the same religion and the same culture. In the history of mankind there have been periods when the most important person in the family was a woman. These were periods of matriarchy. A woman surrounded by numerous children, gardening on a small area, keeping domesticated farm animals, was economically independent from a man, who was engaged in hunting or catching fish, so activities that provided an abundance of food only periodically and were not stable source of food. A woman surrounded by her daughters and sons, who did not always have the

same father, who was at home as a husband or a male, exercised powers, resulting from her status as a mother and a housewife.

Today, some feminists do not want to give birth, and if they do, they want to have only one child. They want power, and they believe that children should be borne by unambitious women, or they could come into the world with the use of artificial incubators from the moment of conception, preferably on assembly lines.

When humanity entered an era of mass animal husbandry on steppes and semi-desert lands, they became the basis for the survival of a family and the role of women, taking care of children declined again.

In areas of intensive agricultural development, similar phenomenon took place. On these lands men farmed the land together with women, but the women had to rear the children as well, while men dealt with trade, commerce, and war. As a consequence of this the role of men expanded in all four major cultures, their role tends to be dominant. Within some cultures, however, there are small, distinct circles, in which, due to moral and cultural reasons, women are in fact deprived of all their rights, and become totally subordinated to the will of their masters, and deliberately isolate themselves from the environment and any signs of social life, e.g. to this day the role of women in many Islamic countries is humiliating. In cultures stemmed from the Semitic basis, such as the Arab-Muslim, or partially from Semitic tradition, as Euro-Christian, an insane ancient taboo of Semitic sexual fears is slightly visible, a phenomenon completely absent in the culture of India or China, an example of which can be ritualistic habits of circumcision among Jews and Muslims. The custom of cutting little girls' clitorises, called clitoridectomy, practiced in Arab-Muslim is particularly cruel and inhuman and brings an unimaginable amount of suffering.

In Christian tradition, in some Christian sects extensively deriving from the traditions of Orthodox Judaism, an illustration of this phenomenon is a rule that

is even legally codified in some states in the U.S., i.e. the ban on hanging female underwear next male underwear. It is quite duplicitous that an affair between a famous or great politician and a young girl grows into an matter of national or even international importance, while large-scale fraud, theft, villainy, murder, or cynical indifference to the misery of other people are somewhere in the background among the societies belonging to the realm of the culture descending from Christian Europe. Social pathologies mentioned here are present among the societies of other cultures as well.

CURRENTLY existing relations between people have been of both impulsive and economic nature.

MONOGAMY, the union of one man and one woman, is standard in Euro-Christian culture, in which the dominant belief is that in order to get married a real feeling of mutual and undying love is necessary. Meanwhile, the feeling of love, when inspired, lasts from eight weeks to four years, which can be measured by the presence of phenylethylamine in the brain, and then never returns to the same person.

In marriages of long lasting, so-called conjugal love is formed, which is nothing more than a conglomeration of various emotions, such as attachment to a partner, feelings of affection and paternal love to the children together, the possession of common material goods, the sense of the security of existence, the sense of material dependence, a sense of ownership in the form of a spouse, the spouse's sense of dependence and, instilled in childhood, depending on the family, belief in the indissolubility of marriage, so that the thought of it brings fear and anxiety. The most precious feeling in conjugal love is true friendship between spouses, which is not a common feature, as well as shared interests and common views.

In other cultures, enclosing three quarters of humanity, people enter into marriage for economic reasons, and marriages are simply marital contracts. This

applies to Muslim cultures, as well as the cultures of Indian and Chinese origin. In those cultures a spouse is chosen by one's parents depending on one's country and local customs. The groom either buys a wife, or marries a bride with a dowry. The young couple, who usually do not know each other, begin to form conjugal love with features as the ones listed above, but without the first premarital stage of the mutual infatuation.

Relationships between people, of both formal and informal nature, are very diverse. Currently, the most common form of a monogamous relationship is either a regular or a common marriage.

POLYGAMY or polygyny. Polygamy also called polygyny is quite rare today. It involves the union of a man and many women, or to be more exact, more than one woman. This phenomenon occurs in the Islamic world, mostly in black Africa. Some Indian cultures and the cultures of Chinese realm sanction the right of a man to many concubines. The lack of access to women for most men has been solved in different cultures in different ways, e.g. in the city-states of Black Africa, in which polygamy had been practised before the European colonial conquest, the prostitutes were maintained by the city authorities. Further, among primitive Samburu people in northern Kenya, related to Maasai people, married women are allowed to have official lovers, but do not have the right to have children with them.

POLYANDRY. This phenomenon is still present mainly among Tibetan-Burmese people; it is the relationship of a woman with more than one man. Bothia people, living in the high Himalayas, practice a certain kind of polygamy in the form of polyandry, a young woman marries not only her husband but all his younger brothers. Similarly, in a small Indian Toda tribe, women have more than one husband. Polyandry was also practised among many primitive peoples, where there was a periodic or constant shortage of women, for example among the Inuit.

All of these polygamous marriages among primitive peoples had mostly economic foundations, as they secured help or prevented the fragmentation of modest assets, as in the case of Bothia people. An old custom called *Baserria*, practised by the Basques, the oldest pre-Indo-European people of Europe, had its roots in economy as well. Unparalleled anywhere in the world, it commanded as well as entitled two young married couples to live under one roof in order to manage the household and farm together. The history of relations between men and women has come full circle. Nowadays, in many post-industrial countries, women have won numerous social, political, sexual, and educational rights. By going to work they gained financial independence, and have become prone to seeking new forms of relationships with men, mostly as partners, without any obligations and statutory approval, but also in **DINKS**, marriages of young, ambitious people who want to concentrate on their careers. They do not want to have children. They do not want a house outside the city or a garden. They want to live in the city, be close to work, cafes, theatres, etc.

SERIAL MONOGAMY. Spouses split up and re-enter into marriages several times. Partners prefer only the so-called true or biochemical love. Troilism is the union of man with two women or a woman with two men or three men with three women. While the first two compounds can be treated as concealed polygyny polyandry respectively, the last type constituted a miniaturized form of hippie communes of the 1960's. Open **marriages**: the spouses enter into agreement that allows for free extra-marital sex: swappers – a multimillion wife-exchange club movement, practiced primarily in the United States, and swingers, an organized group sex.

Mankind has been familiar with the manipulations on the drive to reproduce, i.e. the sex drive, since antiquity. In many cultures and among many peoples periodic orgiastic customs existed, but they were never permanent ones, in contrast to one of primate species, closest to man, bonobo apes living in the

Congo. Bonobos have sex immediately after meeting, “all-with-all”, as well as to resolve the conflicts in the shrewdness.

HOMOSEXUALITY

The most controversial type of relationships are unions between persons of the same gender, gay ones between men, and lesbian ones between women. They have been known in history for a long time but never, especially in the dominion of Christian-European cultures, have they been socially acceptable. Recently, some countries have been legalizing them as marital unions. As early as the beginning of the 1990s, American scientists discovered that homosexual tendencies are related to the X chromosome, in fact they are connected with a small piece of DNA called Xq28, located on the edge of the long arm of the X chromosome. Men inheriting this labelled Xq28 chromosome from their mothers, and from their fathers the Y chromosome, are avowed homosexuals. Bisexual behaviour that sometimes can be encountered is often forced by family or surroundings. Women who inherit from their mothers gay Xq28 chromosome, and from the fathers the other, normal X chromosome, most commonly manifest bisexual behaviour with varying degrees of extremity. Behaviour that is decidedly lesbian is manifested much less frequently. Most of them get married, have children, and do not always have a sense of bisexuality, which can be sometimes revealed after divorce or as a consequence of loneliness. It seems that the second, normal, X chromosome from their fathers partially compensates for the homosexual activity of Xq28 chromosome. Therefore, one’s family, views, milieu, and general circumstances all have such an impact on the disclosure of lesbian tendencies in women. We can also assume that avowed lesbians, disgusted with men from an early age can have two gay Xq28 chromosomes, after their father and their mother, as sometimes gay males have children in the short period of their lives, when they enter a heterosexual marriage with a woman, as a result environmental, familial, social, religious, pressure or due to the initial lack of full awareness of their sexual orientation.

In the countries of the European cultural dominion homosexuality has never been tolerated, in contrast to the other three cultures, where polygamy among rich males, was accepted socially and religiously, and left homosexuals together with a large group of bachelor males, whose private lives were of no interest to general public.

We may wonder whether the growth of the number of gays and lesbians in all human populations, or in other words, resigning from hidden social existence or non-existence by these people, who do not participate in the principle of procreation is not an unconscious response of the evolution of the overpopulation of the civilized world, with massive overcrowded agglomerations including ones with over a dozen million of denizens? Is it not an appropriate analogy to ancient Greece, where the overcrowded but wealthy Athens, dominating over the whole country in lavishness and splendour, science, and culture, valued the beauty of male body exclusively, male friendships, and where during innumerable parties only beautiful boys could truly shine?

It is argued that people, especially in large cities do not want to have children because it interferes with their careers, with obtaining material goods, but really, women often do not have the desire to give birth and bring up children. It is accompanied by the weakening of both maternal and paternal instincts in people. Similar behaviour is manifested by laboratory rats when they live in highly-dense populations, and although they have the abundance of food, they stop to reproduce.

POLITICS VS. DRIVES

History presents many examples of political formations, from the slavery system, to feudalism, and capitalism existing till this day that were able to function without any major shake-ups, sometimes for tens or even hundreds of years, provided that the majority of the population had broadly understood the desire for the need for safety secured, so the access to food in the amount that

did not cause hunger, respecting one's property rights, such as the right of one's home, fields, tools, domestic animals, means of production, and one's family together with the absence of threat of a unauthorized loss of life. Political formations, often fanatical or utopian ones, such as Communism in the Soviet Union, which did not secure these three components, and could not guarantee even one of them, therefore did not last even three generations.

World history knows hundreds of examples where the dictatorial government neglected this basic drive affecting almost the entire living world, the need for security. They never lasted long, even when there was quite a large group of privileged citizens. Slave revolts, rebellions of the poor, catastrophic weather anomalies, or alien invasions, but also the decomposition of the power and economy structures, combined with the passivity on the side of the society resulted in a total collapse of such state organisms.

STIMULANTS

Something in human psyche makes people feel the need to change their state of awareness from time to time. All cultures in all continents, even the most primitive peoples, know and use for that purpose narcotic or hallucinogenic plants or specially made fermented beverages, the most common being alcohol, known since antiquity as wine, extracted from fermented grape juice. Many primitive peoples in Asia, Africa and Native American tribes have produced alcoholic beverages with the use of the fruit of various plants (e.g. African, Native American "beer"), or even with the mare's milk, as practiced by the Mongols. In some cultures, drugs are used to achieve religious ecstasy; others use drugs to soothe individual or social tensions. Some people take drugs to calm down, and chill out, others to accumulate energy, get some stimulation and vigour in life. Various kinds of stimulants, alcohol, and drugs used on regular basis result in dependence on them, especially that the one third of the human population in the world is equipped with a gene or a set of genes favouring rapid

addictions. The result of combat with addictions around the world has brought rather modest results. Total bans and restrictions usually brought opposite results. Prohibition in the United States in the early twentieth century led to the development of alcohol smuggling to the United States, and was the cause of the thriving of gangster and mafia activities on a grand scale.

Today, big drug cartels that illegally deal with drug producing and drug trafficking earn billions of dollars every year, and no country in the world can be secure. But not long time ago, in the nineteenth century, Great Britain forced the right to sell opium in China, which they produced in British India; thus starting the Opium War with China.

HUMANISM

The idea of humanitarianism, voiced by many philosophers and theologians, ethicists and writers, scholars and regular citizens is typical of only human genus, or to be more specific of human race, since only humans have a predisposition to the noble behaviour, universal brotherhood, mutual tolerance and love, assisting in times of need, showing respect and respecting other people's dignity. These humanitarian instincts give rise to many institutions and social, religious, and non-governmental organizations, etc. often international, and typically charity bodies. Still, they are not able to meet human needs around the world. Meanwhile, the behaviour of modern humanity is profoundly impacted by old animal instincts and impulses, e.g. the hierarchy of needs carried out to ensure the conditions of existence is quite characteristic: first to one's family, then one's tribal group, then the national group, and finally the citizens of one's own country. An arrogant manifestation of this phenomenon may be sinking or burning crops only to maintain an appropriate level of world prices, while people in other countries are dying of hunger. It seems inevitable that humanity must begin to realize its own ideals of humanism and humanitarianism. If the globe, hosted solely by humans, is to be a place ruled by

law and order, and mutual tolerance of cultures, professed religions and different customs, the ideals that grew out of the land of humanitarianism cannot remain empty, meaningless clichés and slogans. People inherited from their ancestors certain unconditional drives, but they do not trigger the self-realization of these lofty ideals of universal brotherhood of humanity, because these genes are targeted only for the survival of the species.

Every person now via education should be equipped with strong conditioned reflexes, which would be enveloped in the concept of humanity. Those conditional reflexes differ from person to person, and from society to society. Moreover, they differ from each other, and usually only small portion of a given society is equipped with them, and their level of consolidation varies from person to person. Some countries introduced drastic sanctions, such as cutting off the hand for theft, so the citizens there did not have to lock their houses or apartments. In Sweden the fear of such a cruel punishment resulted in a significant decrease in theft rate. Nevertheless, in the following generations another factor became visible. Common awareness of such penalty, instilled from early childhood resulted in imprinting in a child's mind a taboo against theft. Breaking a taboo is for many people an experience that is extremely hard to deal with, sometimes even insurmountable, and brings forth a strong internal psychic resistance, anxiety, and a sense of deep guilt. The effects of imprinting in an infant's mind certain ideas and principles have been known for a long time around the world, although different peoples and organizations not always fully realized its potential. Imprinting in some intentional or unintentional attitudes, views, certain rules and bans in a child's mind has nothing to do with the process of education, as it relates to the mind in the early stages of its intellectual development when it has no possibility of self-esteem, self-control, and is totally uncritical. A perfect illustration here are prey animals, such as tigers, leopards, lions, etc., which, when raised from cubhood or puppyhood in close contact with humans treat their guardians as parents, and people in general

as members of their own pride or flock. Dogs that treat their owners as a part of their herd can serve as another example here, as they do not identify with other dogs in the park. Speaking of dogs, it is known that among the dog breeds created by humans there are those that are extremely easy to train, such as German shepherds, the most obedient of the obedient dogs which at a young age can be intensively trained in accordance with various human needs, but we have races that are obedient to certain degree, and even if they undergo the whole programme of training, they follow orders only when they want or when it suits their own interest. Dalmatians are one of such breeds. It was proved that Dalmatians can be obedient just like majority of dogs, but only when the training starts in puppyhood. Then an extremely conditioned reflex is created in them to respond to commands issued by man.

People have never been subjected to breed selection in any respect. Therefore, in any, even the smallest community, there are people with different characteristics and psycho-physical tendencies. The obvious conclusion is that the educational process of an individual should start in very early childhood, so at preschool age. Who ought to take care of it? Millions of abusive parents or families fail to do it as well as millions of people for whom panties hanging on a fence, or unveiling of one's face is a cause for shame and indignation, but killing a man, stealing someone's property or defaming a person raises no moral concern, the biggest fear being for one's safety, the fear of other people or of legal consequences. Is it not true that a significant number of parents in Christian Europe encode in their small children's consciousness the shame of nakedness and the need for a mechanical performing of religious symbols? Is telling scary stories about ghosts, witches, the dark, scary spiders, and mice that children experience deeply is the right educational process? Parents encode the minds of their children with absurd and unconscious fears that can be manifested even in adulthood. How many brutal scenes, full of violence are served by children television shows or cartoons? Finally, we can ask whether the life itself does not

provide the children with a sufficient dose of negative patterns on daily basis. Children are attacked from all sides with negative influences that are able to leave a lasting impact in their minds, so absurd fear that can survive to adulthood, the lack of tolerance and respect for other beliefs, opinions, or convictions and insensitivity to other people's suffering and pain. The patterns of family conflict resolution in the form of domestic violence passed down from generation to generation fall into this category. All that has been encoded in the human brain in early childhood, an adult person perceives as his or her deep inner conviction.

If the educational process is considerably delayed further upbringing frequently brings other results. At that time any offense against common and socially accepted rules and regulations, of customary or legal nature, can be subject to individual interpretation. Further, it can be explained according to a person's liking and then relativized. Failure to follow the rules imprinted in early childhood raises the internal resistance, anxiety, fear, and guilt.

THE PENITENTIARY SYSTEM

The current prison system based on the humanitarian philosophy works nowhere in the world. After serving their time, thieves and robbers return to their old ways, usually sooner than later, and begin to steal or carry out violent robberies; rapists rape again, and it happens during a leave granted for humanitarian reasons or for good behaviour. Fraudsters and embezzlers are planning another "scams", especially when the property looted as a result of the crime is still in their possession or in the possession of the members of their families. The effects of work hundreds of psychologists and educators working in jails and prisons are none, or just at the level of few per cent high and refer to a handful of inmates, most frequently random ones who committed their first crime and are still not deprived by a long sentence.

In the world of herd animals living in small groups, and individual that is unsuited for the social life of a stock is expelled from the herd forever, is killed, or at best, falls to the last place in the hierarchy of the herd, is the last one to be allowed to feed, has to eat leftovers, and must humbly give way or place to all other members of the herd. In the human, civilized, world crime appears due to the lack of control over one's impulses. This is known as the lack or the absence of "restrains", resulting from the lack of fears deeply imprinted in one's mind connected with breaking or violation taboos, which are social norms. This does not apply to persons suffering from mental illnesses (schizophrenia, which affects one in every hundred members of the society) who live in their own autistic world, and their perception of the surrounding environment is different. However, due to progressive mental deterioration in these patients (if they are not treated) their drive to act is lowered; they lose their interest in what is happening around them and frequently suffer from depressive moods. As a consequence, they represent a fraction of all criminals. This does not apply to unpremeditated criminals and crimes resulting from people's ignorance, the lack of ability to predict the consequences of their own actions, offenses committed in defence of one's life or property.

As it already has been said, the guiding principle prevailing in the prison system is humanitarianism. So, more and more countries have renounced the capital punishment (in the animal kingdom: killing of a maladjusted individual). Lowering a criminal to the bottom of the social system does not apply as well, since according to the assumptions of humanitarianism, after serving a sentence he or she is to become a full member of society. The only exception was India, where an offender and his or her entire family used to be degraded to the lowest caste of the untouchables, who could perform only the dirtiest jobs and could not approach members of higher castes.

Today no one can be degraded to the lower castes, because the civilized world has no caste system, or it is prohibited by the law (India). In ancient Greece law

allowed to banish a convict from the country, in Rome he was sent to the fringes of the Empire, in modern times, in Tsarist Russia offenders were exiled to Siberia, and England sent its prisoners to Australia. Judiciary system today can only isolate an offender from the society, but according to the principle of humanity, it has to ensure food adequate in its quality and quantity (hence prisoners' rebellions because of "bad food"; protests and complaints on poor diet, e.g. liver, stomach, religious, etc., with which they had no contact or have never applied outside prison), unrestricted, immediate, and free access to medical service and the access to hospitalization and medication, sometimes expensive and difficult to obtain when outside prison. The contact with the outside world: the press, radio, television, telephone, walks, sport games, lounge, library, talks and discussions with the teachers or counsellors are usually guaranteed, and on Sunday there is the opportunity to participate in a religious service of one's choice. Criminals sentenced for longer punishment adapt to life in prison, and enter into formal or informal prison groups. Feelings of guilt for an act for which they have been convicted, is pushed into the subconscious, and usually becomes relativized. It is the circumstances, one's colleagues, the police, or the judge who sentenced them that are to blame for the whole situation. The downturn of the penitentiary system based entirely on humanitarianism is manifested in the fact that, slowly but steadily the crime rate is rising, prisons are bursting at the seams and there is a need to build new penitentiary institutions. Some convicted by a final judgment of a court, must wait a year or two to begin serving their sentence due to the lack of space. The penitentiary system deals with it by shortening sentences or by awarding the convicted prisoners with compassionate passes or passes for so-called "good behaviour"; this applies not only to prisoners convicted of ordinary crimes, but also to rapists and robbers, and many prisoners do not return from these passes. Sentences of ten years or longer are tantamount with the situation when people who leave prison totally unfit to live in a normal society. Many of them do not have a place to stay, they do not have work and family frequently disowned them. Such ex-

convicts need help; otherwise they return to their old ways or join the hundreds of homeless beggars. Of the three methods of disposing animals unfit for social life used in animal herd communities, i.e. killing (biting to death) or the death penalty, banishing, and the third, functioning on the fringes of a herd, the contemporary European civilized legal system uses only the second method i.e. the removal or isolation from the society in a penitentiary institution. This isolation however is one with a full belly and the access to many latest achievements of civilization. It is not surprising then that prison does not deter juvenile offenders or recidivists. In Japan, “The Land of the Rising Sun”, if a drug addict arrested by the police is in the phase of severe drug intoxication, he is not taken to hospital or to a detoxification unit, but he ends up in prison, where he is “allowed” to experience all phases of withdrawal; the wardens only make sure that he does not die. Modern European penitentiary system, provides its inmates merely with a sense of injustice for the years lost in prison; only rarely the sense of guilt for an act for which they were convicted appears, hence the large re-offense rate. It seems that the only effective means of achieving the effects of rehabilitation would be forming a reflexive fear of another punishment. The question needs to be posed whether a two-month prison sentence only on bread and water, with no contact with the outside world would not replace a two-year sentence, and three months, three years or even five years of imprisonment in present conditions. The condition is the creation of a reflexive fear of new punishment at the thought of committing a crime. Naturally, this penalty may not apply to prisoners sentenced for long periods of time, over a dozen years or more of isolation from society. At this point we need to ponder whether European legislation, based on the ideas of humanitarianism, is able to change the course of the current thinking about the penitentiary system, which maintains the belief that crime rate can be reduced by sending more and more offenders to prison, despite evidence that overcrowded prisons only bring only new criminals.

THE AMAZING DEVELOPMENT OF KNOWLEDGE

Beginning with the second half of the nineteenth century, the development of human civilization takes on a pace witnessed in the past. In the past, dozens of human generations lived in the same environment, used the same tools and equipment, every couple of generations they improved them a little, and the knowledge of the world was rather obscure and available to relatively small educated elite. During the lifespan of just a few generations there has been a technological revolution, with the splitting of the atom, and the development of electronics, starting in the mid-twentieth century, and at the turn of the twentieth and the twenty first centuries, brought the beginning of the genetic revolution. Just like one hundred years ago, no one even imagined supersonic aircrafts and intercontinental missiles, let alone landing man on the moon (technical revolution), no one imagined watching “live” pictures from distant countries on a TV-screen, while sitting in comfortably in one’s own home, or telephone conversations with someone on another continent, and communication via the Internet (electronic revolution). We can state with large amount of probability that today only very few people have very vivid imagination have some vague vision of a future world that appears as a result of the genetic revolution that, among other things, means end of the natural evolution of humans as a species. People today busy and overworked, preoccupied with their own affairs, do not feel or do not realize that the genetic revolution has already begun, and knocks at the door. So far, tens of thousands of scientists, geneticists and biochemists, are working quietly in their labs, and the public hears only about transgenic foods of plant origin, bred and introduced to the mass cultivation, trade, and consumption; on raising some animals created as a result of cloning the cells of one individual; or on the attempts of growing some human organs from so-called stem cells, which raises general indignation and fear of part of the humanity [regarding] the attempts to clone humans. Americans’ creation of a transgenic mouse, fur glowing in blue, is just an innocent example of certain potential consequences of manipulation on genes.

Understanding the human genome, the location of each gene and the functions that it fulfils, will certainly open a number of programs in the field of medical genetics, which means the eradication of many genetically inherited diseases, improving the quality of life and its prolongation. It is also a vision of new races of people, with genes absent in humans today, such as a gene lowering metabolism, and thus allowing for winter sleep (bears), which can be useful during long-term space travel. Even today human genes are introduced into the genomes of animals in order to produce human organs for transplantation.

It can be assumed that the knowledge about the genome of many plants will lead to reclaiming vast areas of the polar tundra in Russia and Canada, where now arctic grasses and shrubs can bloom and bear fruit within two months. Transgenically modified polar grass can change those lands, so hostile to humans in the vast fields of grass-crop areas, giving ample harvest of grain suitable for consumption, and many stenothermal plants, including palm trees, will become a part of the gardens and parks in Central Europe.

The world of future is a world of transgenic human races, scarce transgenic intelligent animal species the humans may need, and many plants.

DOES LIFE come from space

The most primitive of primitive bacteria, Archea, discovered recently and extracted from deep wells in the ground, feed and breathe on iron. They process iron and iron oxides into the hematite. They can survive both in high temperatures, and in low ones, around the absolute zero. Therefore, they managed to come from space inside a large iron meteorite. Strangest of all, humans are slaves of iron as well, since the haemoglobin contained in red blood cells that carries oxygen to all corners of human body, is a speck of iron-containing protein that combines with oxygen in the lungs and later releases it in the organs of the body. The development of living matter in the oceans in early youth of the planet can have run in parallel and multifaceted manner, a claim

that can be supported by the existence of primitive bacteria discovered to the great depths the active submarine volcanoes; they obtain energy for life from the decomposition of sulphur compounds.

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