

Human evolution: humanistic selection and looking to the future ¹

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Abstract

Cultural evolution has predominated over biological evolution in modern man (*Homo sapiens sapiens*). Cultural evolution differs from biological evolution not only by inheritance of acquired characteristics but also, as is proposed in the present essay, by another kind of selection mechanism. Whereas selection in biological evolution is executed according to a criterion of reproductive success (the natural selection), selection in cultural evolution appears to be carried out according to human and humanistic criteria (success or fitness in meeting human needs, interests and humanistic values – “humanistic selection”).

Many humanistic needs or values do not seem to be prerequisite for reproductive success, yet some of them (e.g. a need for freedom) seem to be inborn. Innateness, humanistic selection (decisive at a community level) and hierarchy of some human needs, interests and values appear to give cultural evolution a generally upward trend although long periods of stagnation or even regression may occur.

Modern humans appear to be still at the early stage of their cultural evolution. A further cultural evolution of man appears to be, in contrast to biological evolution, predictable (with an optimistic outlook) and testable. The problem is that the hopeful result of this test will probably be known only in the fairly remote future provided that this species will not become extinct before that.

Two kinds of evolution have proceeded in humans: biological evolution (based on new genetic information) and cultural evolution (utilizing new knowledge, ideas). Both kinds of evolution have two prerequisites. First they need spreading of the new information (genetic or cultural) among subjects of evolution and preserving it for the future. Second they need screening of the information with selec-

tion of that which fits best (natural and humanistic selection in biological and cultural evolution, respectively; the term “humanistic selection” is explained below).

Human evolution has been considered so far mainly in terms of biological evolution. There is an abundant literature (ranging from scientific journals to primary school textbooks) and many

¹ This essay is based on a poster “Retroevoluční a proevoluční pohled v etologii člověka” [(Retrospective and prospective view on evolution in human ethology) (In Czech)] presented by M. Kršiak at the 33rd Annual Conference of Czech and Slovak Ethological Society in Jihlava (Czech Republic), April 20, 2006

other sources of information on human ancestors, their presumed way of life, etc. Criterion for selection in biological evolution is a success in the number of progeny an organism leaves under a particular change of environment (reproductive success, success in adaptation to this change). This criterion is convenient for explanations of biological and human evolution in the past but it is hard to use it for predictions. Evolutionary biology can offer only retrospective explanations and not predictions [6, 11]. Some attempts for predictions are usually based on extrapolation of results of previous adaptations selected according to the criterion of reproductive success (i.e. criterion of natural selection). For instance, concerns are sometimes expressed, that the future of humans is jeopardized because of human aggressive nature evolved in the Pleistocene to solve the adaptive problems regularly faced by our hunter-gatherer ancestors (on the other hand, selection for the opposite trait – for affiliating nature – could have been equally important as man could hardly survive solitary in the Ice Age; this often ignored aspect has been stressed by an eminent human ethologist Eibl-Eibesfeldt [5]).

Humanistic selection

I believe the major source of problems when interpreting trends in cultural evolution is application of reproductive success as a primary criterion of selection in cultural evolution. The primary criterion for selection in cultural evolution seems to be other than reproductive success, although it must not be in contradiction with the reproductive success. Whereas selection in biological evolution is executed according to a biological criterion (a reproductive success), selection in cultural evolution is carried out according to human and humanistic criteria (success in meeting human needs, interests and humanistic values). It may be helpful to distinguish the latter kind of selection (which might be called “humanistic selection”) from the former one (the natural selection).

Natural selection favours genes that increase the reproductive success of their carriers.

Humanistic selection favours ideas and inventions that increase well-being of humans.

Fitness in cultural evolution does not seem to be given primarily by fitness in transferring and spreading genes (or memes), but by fitness in satisfying human needs and exercising human abilities.

Mechanisms of cultural evolution

It has been recognized long ago that cultural evolution differs from biological evolution in involving mechanism of inheritance of acquired characteristics (Lamarckian type of evolution). This is an important difference since the possibility to build on knowledge and inventions of previous generations greatly accelerates cultural evolution.

Another evolutionary mechanism specific for cultural evolution appears to be the humanistic selection described above.

Humanistic selection appears to give cultural evolution direction. Human needs, interests and values have hierarchy [9]. Maslow (one of the leading architects of humanistic psychology) argued that each person has a hierarchy of needs that must be satisfied, ranging from basic physiological needs to safety, belonging, esteem, and, finally, self-actualization. Only when the lower needs are met can the individual progress to higher levels in the hierarchy. The highest aim is to reach full utilization of personal abilities (self-actualization).

Humanistic selection may work not only on the individual (personal) level, but also – and perhaps mainly – on the group level. One reason is that many human needs can be satisfied and many human capabilities can be exercised only in human community. Another reason is that deviations from conditions which determine human well-being always have adverse consequences when occurring in the majority of a community, but not necessarily if they occur in an individual or in a minority. For example if an individual or a small group preys upon some other members of community, this does not need to lower (physical) well-being of the robber(s), but if done by the majority of the community, it would be hardly compatible with well-being and prosperity of the community. In spite of abundant variations in culture of various human populations (speech, ornaments, dances, etc.), there is at present perhaps no community where general stealing within the community would be permitted or tolerated. Another example: freedom does not seem to be prerequisite for reproductive success, but it seems to be necessary for human well-being. Already thousands years ago humans appreciated freeing from slavery. The history of struggle of mankind for freedom is quite instructive as for the mechanism, trend and sources of cultural evolution: even if aspiration for freedom was suppressed in a particular community for a long time it reappeared later. This suggests that a need for freedom is an inherent human trait. Innateness and hierarchy of some human needs, interests and values may guarantee a generally upward trend of evolution not only in an individual human (as shown by Maslow), but also in a human community. Also a concept of freedom evolves: formerly it probably meant mainly freeing from (physical) slavery, later and at present gaining political freedom, equal rights. And in the future? After liberation from slavery or serfdom people have required political freedom and/or equal rights. After gaining political freedom and equal rights they might be still missing some freedom, perhaps inner freedom (in the self, or as is aptly expressed in Czech “v duchu” = literally “in spirit”). Aspiration for inner freedom and its responsible use emphasized by some appears to be unknown or odd to many people for the present. Evolution of concepts of freedom and of other human aspirations suggest that humans often feel the need for something although they

cannot well formulate what it is and do not stop until they get it. This is probably one of the most important sources and forces of cultural evolution.

In his book *The Selfish Gene* [4], the ethologist by training and famous evolutionary theorist and popularizer Richard Dawkins coined the term “meme” to describe a unit of human cultural evolution analogous to the gene, arguing that both are “replicators” (as I understand it these replicators are supposed to be living entities whose only and main interest is to replicate themselves utilizing anything, including human bodies and human technology, which suits to achieve this goal). I believe that primary sources of cultural evolution are not memes with which humans come across but motivation which drives humans to find something (or somebody) which can satisfy their needs and use of their abilities. If some memes correspond to it, then they are accepted and replicated. But they are secondary: some of them end like commensal bacteria and persist, other ones, which do not serve or even harm (‘viruses’) to the well-being of a larger human community, are gradually or resolutely eliminated. Memes are some specific, concrete phenomena (“tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches” [4]). However, as mentioned above humans often seem to try to satisfy a need for something although they cannot well formulate what it is. When such a goal is described in details, put in concrete terms, then this may paradoxically obstruct achieving it. For example, detailed requirements and directions for the way of life which humans must observe can do more harm than good. Similarly, a detailed description of attributes of a spiritual being to be worshiped and obeyed may result in idols or myths, which are sooner or later abandoned and replaced (in fact such a “meme” had been described as undesirable already three thousands years ago [12]). The idea that we can fully grasp these phenomena is like when children try to catch a rainbow.

Predominance of cultural evolution over biological evolution in man at present

Cultural evolution (evolution of knowledge and technology, way of life, religion and of similar phenomena) has become the most marked form of human evolution. In contrast, biological evolution appears to have become residual in most modern societies.

Human evolution nowadays is not a simple matter of genes and natural selection. This has been well expressed by Allott [1]: “A cultural contribution by an individual can readily have genetic effects on the wider population, and even perhaps on the species as a whole. For example, the founder of a religion, laying down rules accepted by a population on such matters as adultery, incest, marriage, chastity, must have long-term effects on the genetic composition and genetic variation of populations much greater than could be attributed to any single individual through his individual genetic ‘fitness’. The originator of new, effective treatments for disease can

have tremendous evolutionary significance not only for his own community but perhaps for the human species as a whole.

The human social culture of today controls and modifies human reproductive behaviour, and leaves room for individual decision to an extent without any past precedent, ... with the technologies of contraception, abortion, in vitro fertilisation plus oncoming much more powerful techniques of genetic engineering, then to attribute significance [in human evolution at present] only to relative ‘inclusive fitness’ [spreading own genes by genetic relatives] seems like a zoomorphic intellectual superstition.”

Looking to the future

Trend

As mentioned above, the course of cultural evolution appears to have an upward trend. The slopes and courses of different aspects of cultural evolution can markedly differ. Some of them (e.g. evolution of technology) have gone steeply up with occasional periods of stagnation and only exceptional decreases. Others (e.g. evolution of human way of life) have very shallow trend with long-lasting (decades, centuries or more) periods of immutability and even regressions (similar trends and volatility are shown by share prices but in markedly shorter – perhaps by two to three orders – periods). It has become fashionable to question progress in cultural evolution. It is hard to deny some progress in cultural evolution in terms of evolution of knowledge and technology. It is much easier to question progress in cultural evolution in terms of evolution of the human way of life (first the concept of existence of any universally valid way of life for humans can be questioned, then many examples can be given that mankind is at present as bad as it was in the past). But still, when considering long-time periods one cannot resist feeling that some progress has been made even in the human way of life. For example, slavery, burning “witches” at the stake and cannibalism are now globally illegal or unacceptable. Great spans of time seem to be necessary to perceive progress in human way of life on a larger scale, making it often imperceptible within a person’s life time. It may be argued that ways of life have markedly and rapidly changed during recent generations. However, there is a question of how far these changes reflect only epiphenomena of evolution of human way of life, its temporary and local oscillations (re- or progressions) or a real shift. Metaphorically speaking, there is a question whether or not we are able to distinguish waves in the Atlantic from the Gulf Stream (actually there may be another example of cultural evolution here: one can reasonably assume that the attention of ancient Atlantic people had been attracted first and for many generations only to waves, especially if stormy, and that only later they noticed the existence of the Gulf Stream and understood its meaning).

Interest of humanistic psychology in human needs led to the conception of their hierarchy which has been applied in the present essay to the selection mechanism of cultural evolution. Orientation on human needs is peculiar not only to humanistic psychology but it could and should become one of the domains of human ethology. Ethology is typically interested in inborn needs ('instincts') and, moreover, in their function (purpose) in the species-specific behaviour (way of life) and survival of a particular species. What might then be a purpose of those magnificent human capabilities and humanistic needs (from this point of view)? Modern man (*Homo sapiens sapiens*) has lived according to skeletal remains from about 200,000 years ago to the present [7] but the oldest evidence of modern man in terms of art work is much younger (e.g. Venus of Dolní Věstonice is about 30,000 years old). The average life time of a species on earth is supposed to be a few million years. So, modern humans appear to be still at the early stage of their development (evolution). Is it a purpose of the capabilities and needs of members of this species to find and adapt (though only within certain limits) their way of life, environment (both external-physical and inner-"in spirit") as a mature (i.e. free, knowledgeable and responsible) beings? If it is so, then further (actually cultural) evolution of man is, in contrast to biological evolution, predictable (with an optimistic outlook) and testable. The problem is that the hopeful result of this test probably may be known only in the fairly remote future provided that this species will not become extinct before that.

Latent capabilities

One of the potentials for further cultural evolution might be latent, so far unknown and unutilized human capabilities. Top talents are probably genetically conditioned and can be fully utilized only under particular time and conditions. For example, the distribution of genes for top talent in software programming was probably the same in human populations one hundred years ago, as it is now. Naturally, nobody was aware of this talent in those days (consequently some man and woman with presently unknown talent and who have inferior status today may be and may feel like Einstein among mammoth-hunters).

The greatest potential for further cultural evolution is of course in the generators (or monitors ?) of ideas, i. e. in the minds of people. Where do these ideas come from? The only answer, which is now considered to be scientific, is that ideas stem exclusively from the activity of brain (called e.g. the higher nervous activity). Conceptions that some ideas appearing in minds are of external (spiritual) origin are improper and taboo in science. Surely, there is no solid objective evidence for them. Moreover, ideas cannot be evoked objectively (nor subjectively) so that it is hard to study their origin experimentally. Although phenomena which cannot be evoked objectively nor known objectively are often regarded as meaningless for science, they can be very meaningful for humans

especially when these phenomena (e.g. love or insight) act. They could act in cultural evolution as well. Everybody has personal experience with phenomena such as ideas in his/her everyday self. Every human lives except from his/her external environment also in his/her inner environment (self, or "in spirit" as expressed in Czech and explained above). Therefore fitness in adaptiveness to changes in this internal environment may be also important and should be also taken into consideration in human evolution.

Many religious persons report that they feel a strong and positive relationship to a spiritual being. Although this is impossible to verify objectively, it is sometimes possible to document transformations of these persons in terms of their way of life (for example a young man stops a dissolute life and begins to take care of the severely disabled). Some thinkers believe that the transformation of self and the world is human ultimate destination and that "in the future the divinity of man's creative nature is finally revealed and divine power becomes human power" [2]. It is said that love in the human inner world (to a spiritual being) can be as important and powerful as in the human external world (to and by other physical beings). It appears, however, that this spiritual love should be balanced by remaining human capabilities, particularly by reason, conscience and will without renouncing autonomy in one's own decision-making. Otherwise consequences can be as bad as they are in the uncontrolled love to human beings. There are obviously great reserves for evolution in this area both in individual humans and in greater communities.

Man can and should better himself also through science and technology (transhumanism [8]). This has taken place from time immemorial and goes at still higher speed. New technologies that can improve human senses, intelligence and life spans are within sight now. An arrival of "human enhancement" in terms of overcoming the current limitations of human cognitive and physical abilities is expected (e.g. [3]). Predictions that future men or women will be like "cyborgs" with bionic or robotic implants or expectation of "The Singularity" ("Within thirty years, we will have the technological means to create superhuman intelligence. Shortly after, the human era will be ended." [13]) seem to fall into the class of sci-fi. Although increasing human physical and mental possibilities is most important, it does not seem to provide everything that humans need. Therefore, many would probably endorse the original definition of transhumanism by Julian Huxley who defined transhumanism in 1957 as "man remaining man, but transcending himself, by realizing new possibilities of and for his human nature" [8]. In agreement with this older view, the authors of *Megatrends 2000* [10] predicted: "The most exciting breakthroughs of the 21st century will occur not because of technology, but because of an expanding concept of what it means to be human Though we will be guided by a revived spirituality, the answers will have to come from us Apocalypse or Golden Age. The choice is ours".

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