

CIVILIZATION DILEMMA OF QUALITY OF LIFE

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Abstract

The results of human biological and cultural evolution are currently at odds. A prosperous consumer lifestyle as a result of cultural evolution does not provide enough of the adaptive stimuli that man claims as a result of natural biological evolution. The aim of this article is to define civilization dilemmas in relation to the quality of life of modern man. The chosen methods were the methods of analysis, synthesis, induction and deduction applied to the method of anchored theory in the sense of studying the concept as the main category, as well as causal and operational thinking. A synthesis of evidence and a critical and reproducible summary of the results of available publications on the subject were performed as well. The results of the study provide knowledge that quality longevity (delaying senescence) requires a certain degree of hormetic stress, especially in the area of caloric restriction, physical and mental exertion and hardening (salutogenetic quadrivium). The first dilemma analyzed is the autodeterministic discomfort self-limitation of the ascetic type. Within the framework of cognitive dissonance and causal attribution, it leads to the question of whether the advanced discomfort will be balanced by a subsequent comfortable life. The second dilemma analyzed is the use of technological possibilities of biotracking (BZV, biomonitoring), which will be increasingly, in accordance with the progress of knowledge, offered in deciding on the nature of necessary human activities, which can be interpreted as a restriction on freedom of decision. Conclusions: The analyzed dilemmas will increasingly affect a person's quality of life in their self-limiting form.

Keywords

Discomfort dilemma; supervision dilemma; salutogenetic quadriad; hormesis.

1 INTRODUCTION

1.1 The lifestyle in modern civilization

The lifestyle to that modern civilization leads is at odds with the health requirements for human biological prosperity. A result of this fact is a growing rate of "mismatch diseases", the most prominent of which is the obesity epidemic. On the exact data based health promotion and health education, rationalizing for more than a hundred years, are not very effective and the "mismatch diseases" problems are getting worse, together with the rising of living standard globally in the world.

The main reason is a disproportion between the results and the resulting requirements of the roughly five million years of human biological evolution in natural environment and the subsequent, about ten thousand years of the human cultural evolution. Genetic-based biological evolution has evolved into a

"natural", an organism with a musculoskeletal and cardiopulmonary system that needs permanent adaptation stimuli, originally provided by a challenging natural environment that has provided sufficient "training" for all human vital functions. Cultural evolution has taken man out of the natural environment (self-domestication, urbanization) and, on a meme basis, created an accelerating technological civilization which, in its prosperous consequences, freed man from physical exertion and provided him with an excess of preferred food, including living in thermal comfort.

People willingly switched to a comfortable lifestyle with an abundance of food and without strenuous work effort, but with unpleasant health consequences. A demonstrating example is the 50-year history of the small island Pacific state of Nauru, which, after gaining independence, decided to become rich by phosphate mining. For several decades, it

rose to the head of rich countries according to the criterion of GDP per capita. They used the obtained funds rationally, but of course they hired workers for hard work and "lived" well, according to their judgment. After half a century of existence, they have had enough problems. Leaving aside organic, health statistics remain alarming: over 90% of Nauru's citizens are obese (even slightly more men than women) and over 30% have type 2 diabetes. This is not a good balance at all after half a century of civilizational prosperity in the original "tropical paradise". It should be noted that the citizens there are no "savages" or "primitives". Most have a very good education, mostly in foreign schools. Such an "experiment" under natural conditions supports the hypothesis that a prosperous lifestyle can harm the human population in a biodegradable sense.

1.2 History of the problem

Medical research has gradually found increasing evidence that human lifestyle, including nutritional and exercise habits, plays a dominant role among the potential determinants of human mortality (genetics, environmental influences, level of medical care, lifestyle). It has been promoted as part of primary disease prevention, but healthy people do not give much warning. As early as the 1970s, Ukrainian cardiac surgeon Nikolai Amosov as the first declared person's condition to be a health reserve and verified the effect of massive exercise on physical well-being for himself into old age (Amosov, 1980). Aron Antonovsky shifted much of his knowledge in this area with his concept of salutogenesis, derived from the study of the health consequences of the Holocaust, trying to come to terms with what human invincibility is all about (Antonovsky, 1985). As part of the search for salutators, i.e. factors that positively affect human health, a "salutogenetic triad" was introduced as early as 1993, consisting of an interconnected reduction in energy intake, an increase in energy expenditure and hardening (Hošek, 1993). Despite a certain positive citation response, the opinion promoting "inconveniences" has not prevailed as it is in this area.

2 AIM

The aim of this article is to define civilization dilemmas in relation to the quality of life of modern man.

3 METHODS

The chosen methods were the methods of analysis, synthesis, induction and deduction applied to the method of anchored theory in the sense of studying the concept as the main category, as well as causal and operational thinking.

A synthesis of evidence and a critical and reproducible summary of the results of available publications on the subject were performed as well.

4 RESULTS AND DISCUSSION

It is all the more interesting that a similar triad (caloric restriction by 25%, physical exercise and thermoregulatory stimuli) reappeared after 16 years in the experimentally far better-based monograph of David Sinclair, presented as anti-aging drugs (Sinclair, 2020). It is especially interesting that the team of Sinclair's geneticists demonstrate the positive effects of these influences not only in the human area, where it is not methodologically simple, but also in the subhuman area, from the simplest organism of yeasts and octopuses, through vertebrates to humans. It is also psychologically interesting that the intervention trials apparently "ran into" the resistance of the subjects. Their additional statement after the experiments, for example, shows that they managed to comply with the 78% hunger directives. Of course, this was a great deal of discomfort, and even well-paid experimental volunteers failed with a partial starvation.

Theoretically, the aforementioned monograph explains the effectiveness of loads with epigenetic regulators, sirtuins that support mitochondria and have broad healing effects on the body in the fight against sarcopenia, osteopenia, atrophy and other degenerative factors of senescence. Fasting, exercise and heat act as hormesis, ie positive stress that benefits the body. Sinclair has not recently been the only one who praises the positive effects of

stress. Leading physiotherapist Pavel Kolář publishes the monograph "Strengthening with Stress" (Kolář, 2021). In the monograph the author understands strengthening not only in the bodybuilding sense, but as a way to resilience by overcoming natural and model stress situations. The number of professional authorities promoting hormesis has recently increased (Lieberman, 2021; Poněšický, 2021; Vojáček, 2021; Kornatovská and Rehor, 2021, etc.).

It is possible to state, that we arrive at a situation where modern society has liberated man from the struggle with hunger, cold and effort, but this society must return to these "prehistoric" burdens voluntarily in model situations in order to prevent the biodegradable effects of the comfortable life.

On the base of the analysis, synthesis, induction and deduction applied to the method of anchored theory the followed dilemmas.

4.1 Dilemma 1: Acceptance of discomfort

It is natural to prefer pleasure to suffering. Hedonism dominates asceticism, and modern man bases himself on his freedom of choice. Nevertheless, he should be able to accept certain stress-type discomfort constraints in the context of biocognitivity in the interests of his biopsychosocial prosperity and in his anti-senescent efforts.

Lifestyle hormones should include four types of stress, which we call *salutogenetic quadriade, stress quadrivium, or quadruplex*:

1. Reduction of energy intake (fasting), caloric restriction by 25%
2. Increasing of the energy expenditure, at least to the level of health-oriented fitness, ie 10 - 20 MJ / week.
3. Hardening, i.e. adaptation to thermoregulatory loads outside civilization "thermostats".
4. Cognitive training, increased mental effort, especially in senior age.

Psychologically, of course, these are very difficult requirements, negatively motivated. The

legacy of human biological evolution, marked by a constant fight against hunger, is also the tendency to over-consume food, because people were not sure when there would be enough food next time. In this context, food preferences of energy-valuable food (fatty and sweet) have also developed, which have long delayed hunger and are now counterproductive for humans. Movement is purposefully motivated for a person, as an instrumental matter. Autotelic motor skills are mainly represented by juvenile movement. In relation to the discomfort of "ineffective" effort and burden, one is comfortably repulsive. One can move from aversion to acceptance only on the basis of emotions (combat enthusiasm, hunting passion, game interest, dance ecstasy, sports mobilization, crowd imitation, fear and anger reactions, and fanaticism in all kinds).

The second great tool for stress discomfort reducing is rationality, i.e. "justification" of stress in terms of causal attribution and understanding of its effectiveness. Exercise discomfort is a part of workload, it is a prerequisite for reward and logically is the content of professionalism of soldiers, firefighters, police, rescuers and other auxiliary professions, where real and model discomfort can become an obligation. Otherwise, compulsory discomfort is a social problem, justifiable even in prison, because it smells of restrictions on freedom and fascist tendencies. Volunteers, however, have no limits and it is up to each person to react to discomfort, whether it is the burdens imposed by circumstances or the burdens initiated by their own decisions. The third big tool for reducing exercise discomfort is habit. Hardening is the best example of human adaptability, which shows how relatively quickly the inconvenience of contact with a cold environment decreases depending on regular immersions. Regular loads lead to adaptation and in some cases, for example in endurance athletes, one gets used to endogenous opiates, which, due to exertional stress, leach out inside the body and evoke pleasant feelings.

This can lead to dependence on exertion and withdrawal symptoms when training is stopped abruptly. That is why metaphorically sometimes we speak of "sports masochism" and a person who has not experienced sports euphoria has a hard time understanding the paradoxical "joy of suffering" in extreme sports performances.

It follows from the indicated that the best means of overcoming subjective discomfort is spontaneous movement, sports activities and voluntary rational and habitual stressful moments. Motivationally, it is best to understand current discomfort as a means, as an investment in one's own condition, which is an important circumstance of one's own quality of life, i.e. kinesioprotection of quality of life (Hošek, 2016). The reversible theory of emotions, according to which negative emotions usually turn into their opposite, is also helpful. Fear is a joy after overcoming it, after fatigue there is a happy rest, a hungry person is happy to enjoy a reasonable portion of food and a return to the thermos-neutral zone is associated with pleasure. Generally, it is a credo: "comfort to comfort."

The big problem is the level of accepted discomfort, frequency and intensity of selected loads. Due to the fact that the subject faces aversion, he cannot rely on his feelings within bio-tracking or biomonitoring and is grateful for the auxiliary quantification. This brings us to the second civilization dilemma - technological supervision (control) of human activity.

4.2 Dilemma 2: Acceptance of digital surveillance

Technological progress, conditioned by human cultural evolution, gives man ever greater opportunities to expand his potential, e.g. in the field of sensors, body modifications, implantation to the limits of the so-called "cyborgization" of man. In the field of automatically controlled bodily functions, technical progress gives great potential in the field of biological feedback.

The accurate and immediate information, for example, about a person's heart rate can be useful when monitoring a person's rehabilitation after a cardiac procedure, or during sports training (sports tester). The wearable electronics and equipment of ergometers and simulators today offer great opportunities for continuous monitoring of energy expenditure and energy intake, or energy equivalents. These devices are designed to monitor the human regime and alert you to compliance with certain regime limits. Psychologically, it is a "man-machine" relationship. One has to come

to terms with the fact that he is "monitored" and will be alerted to the fulfillment or non-fulfillment of certain stress quotas. Subjectively, he may perceive it negatively as an intervention in his own self-determination, but on the other hand, it provides him with valuable objective data that he can confront with his feelings. In general, these surveillance technologies are on the move and the issue has a response in a societal sense (wiretaps, cameras, etc.). According to the assumptions, modern man will have to accept that in the near future he will do for the most part what the "machine" recommends, i.e. bio-tracking in the field of his bioenergy balance represented by wearable electronics, although this may be negatively perceived as restriction of subjective freedom, objectively it increases the probability of quality of life. Previous experience in human-machine cooperation, in the case of pedometers, exercise bikes, ergometers and other trainers, shows that it is a functioning motivating factor within the HBM (Health-Believe-Model).

5 CONCLUSIONS

The discrepancy between the effects of human biological and cultural evolution leads to the dilemma of voluntary acceptance of hormetic stress in the form of a salutogenetic quadriad. The second dilemma resulting from this is the restriction of decision-making freedom in the sense of bio-tracking by wearable electronics. Acceptance of the two indicated dilemmas will influence anti-senescent thinking and the modern lifestyle of a modern man.

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