

HABITAT AND HABITUS IN ADAPTATION OF MAN

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Habit and habitat of man, there are two categories of science that clearly to the relationship between man and the environment. The paper discusses the definition of the term habitat, scientific approaches to the term habitus, as the most important dates for research human adaptation to changes in the environment and working environment. Human adaptation are examined on the basis of medical monitoring and cooperation with occupational physicians. Are supplemented by observations of the author in the area Tisovec (Slovakia). Preliminary results of the first year of the research are contained in the form of basic findings from the field.

habitat of man, man's habit, human adaptation, psychosocial risks, work environment, environment

Introduction. Man is a part of living, social and working environment which affects him, whether negative or positive. The working environment is defined as the physical, chemical, biological and psychosocial factors, which directly affect the health and safety of working people. Social environment is the result of community structure, living in a particular territory, that is organized and has its reciprocal links [1]. The concept of ecology comes from the biological sciences and examines the relationships between organisms and their environment. Ecology allows interdisciplinary approach to environmental problems. Ecological and socio - ecological models of human behavior have evolved over several decades [2] in sociology, psychology, education and health care and focus to how people behave towards the environment in which they live. According to the World Health Organization [3], policy and environment have to create appropriate conditions for motivating people to behave healthily.

Psychosocial problems lead to environment. Loss of biodiversity, lack of fresh water and climate change are global environmental problems, which are not "outside" of human society, but are part of its operation. This means that every environmental problem is, in

some aspects, social. Teams of scientists working on solutions to global changes in the environment, first have to identify the ethical and social issues arising from global change. Then, they must reflect on ethical principles [4] on the environment, which can provide a basis for addressing them. Finally, they must support national, ethically, socially and scientifically based policy in being able to adapt to global environmental change [5]. Regarding human health in the context of global environmental risks, it is clear that good health of the whole population depends largely on the stability and functioning of the ecosystem in which it lives. The most common global environmental risks include, for example, changes in ecosystems caused by the loss of biodiversity, climate change, depletion of stratospheric ozone, changes in hydrological systems, water scarcity and soil degradation and urbanization. Regarding the protection of health from global environmental change, multi-level management associated with health advice, derived from the environmental agenda is needed, to address health risks. For example, the World Health Organization provides health expertises to the UN conventions on climate change and biodiversity [6].

Habitat is the environment in which a person or population lives. Habitat can be divided into natural habitat and man-made habitat. It can be defined as a set of physical factors (such as heat, light), chemical (chemical) biological (micro and macro) and psychosocial factors (motivation, satisfaction, interpersonal relationships), which directly affect the health of human. These factors affect human beings positive or negative, so the man had to habituate (adapt).

The term **habitus** is often confused with the term habitat and represents the overall physical condition of the body, due to the susceptibility to the disease. From the perspective of social anthropology, the term habitus is defined by Pierre Bourdieu [7], as a set of individual dispositions of a man, enabling him to perceive, think and act a certain way. Natural human habitus can be examined using the following approaches. Mechanistic model, an approach that sees man as an independent corrector of the environment in which he lives. Cognitive model include cognitive state of man in relation to the environment, so-called mental maps. Behavioral model examines how the man behaves in different environment, because the environment influences his behavior. Most of the attention in terms of natural habitus of a man, deserves socio - ecological model, which examines the relationship of man and the environment at different levels: an individual, organizational, community and populational level. The relationships of a man and the environment are dynamic, which means that various environments control and limit the behavior of people who live there (eg. Tub restricts the number of people), but also people and groups have an impact on the good or bad conditions of their environment (eg. lobbying community groups influencing the government). In the 70s of the last century, many scientists have tried to identify and

examine what processes in the human mind make some people feel good in the environment and others do not. The researchers tested people by screening or showing them images depicting various environments, such as urban, (anthropogenic) or natural. These environments on photographs contained varying amount of natural elements, or do not contain any natural element. People then had to express their feelings about the environment [8]. The results of this research showed that people prefer natural environment, or the environment with natural elements. Regarding the urban environment, their preferences are focused on the urban environment with elements of green than the urban environment without vegetation. But people also highly preferred those sceneries, with the lowest level of human intervention [9]. Actually, it is possible to use two different approaches for the explanation of environmental preferences. The first is the evolutionary and constructivist model. According to evolutionary approach, the environment with elements of nature is preferred because of its great historical significance for survival, in the course of evolution. Nature evokes a kind of sense of security thanks to its natural resources [10]. Constructivist model, in turn, explains the environmental preference based on traditional, cultural significance of the environment with elements of nature. Nature, vegetation and greenery, can people evoke serenity, harmony and happy childhood in a village in the lap of nature [11].

Human adaptations to the environment. In the environment, man can live, work, rest, but must also respond to the physical, chemical, biological and social environmental influences. The intensity of the influence of individual environmental factors are constantly changing and therefore man has to adapt to retain the stability of the internal environment of the body, so called homeostasis. There are many kinds of adaptations that significantly affect the perception and action of people in new, unusual or stressful situations. For example, group and individual adaptation (are slow, physiological and associated with thermoregulation or acquired immunity). Phylogenetic adaptations (during the evolution and associated with the natural selection) and ontogenetic adaptations (during individual development and growth of the individual). Hardening, wearing clothes and using of cultural achievements are cultural adaptations and adjustment to conditions of the new environment (acclimatization) is among the climatic adaptations. To express dealing with the load, which is relatively bearable we can use the term adjustment, and social adjustment, while dealing with the load, which is above the limit, it is used the term **stress**. Negative impact or situation which influences humans and causes stress is called a **stressor**. These may include physical factors (air pollution, noise, vibration, natural disasters, injury) or psychosocial factors (job insecurity, work intensification, responsibility, fear grief, interpersonal relationships).

Tab 1 Empirical evidence of socio-psychological risks lead to health effects in locality Tisovec (Central Slovakia)

<i>Psycho-social environmental phenomena</i>	<i>Likelihood of occurrence</i>	<i>Impact on health</i>	<i>Research locality</i>
Extreme temperatures, an increase in frequency, duration of heat waves	<i>very likely</i>	Increase in mortality and morbidity related to heat, especially in the old, chronically sick, very young and socially isolated people	observed
Increasing the number of hot days / nights	<i>very likely</i>	Deterioration in general health, will be affected the most old and lonely over the age of 75 years, children, disabled and handicapped	observed
Periods of high rainfall, heavy rain, thunderstorms, tornadoes, floods	<i>very likely</i>	Increased risk of death, injury caused by flooding, disease and respiratory diseases caused by water (Hepatitis) and food (Salmonellosis).	not observed
Drought	<i>likely</i>	Increased risk of infectious diseases caused by water and food	observed
The occurrence of sharp changes / fluctuations in weather	<i>likely</i>	Increased risk of death and mental illness	not observed
Extension of the pollen season	<i>likely</i>	Asthma, allergies, respiratory disorders	observed
Incidence vectors of transmission of infectious diseases	<i>unlikely</i>	Malaria, Lyme disease, tick-borne encephalitis, West Nile fever	not observed
Increase in UV radiation, PM 10, and ground ozone concentrations	<i>very likely</i>	The increase in the risk of cancer, death from respiratory diseases	observed

In the past, there have been significantly different stressors than at present (eg, hunger, cold, fighting), thus their character changed [4]. Man is experiencing stress and tension also from the declination in stressful situation. The response to a stressor is substantially the same as in the past. A person can respond to the action of added stress by emotional trauma, anxiety, depression, sleep disorders. Person starts to feel uncontrollable rage, leading to aggressive behavior against another person, or falls into a state of helplessness and depression. Another type of response to a stressor is weakening the ability to think logically, due to distracting thoughts. Stress has also an impact on human health, either directly or interactionally, that means, if a person is predisposed to certain diseases. Regarding the adaptation of the population to climate change, health system and its

management is very important. Its major task is to implement appropriate preventive measures to improve the access to public health control using e-health, to anticipate possible negative effects on health and to recognize them in time, and subsequently to inform the public.

Psycho-social risks in the work environment. Feelings of anxiety, fear, tension in a stressful situation, lead to the release of stress hormones. The role of two peptide hormones, corticotropin - releasing hormone (CRH) and arginine - vasopressin (AVP) was examined. CRH, is a short polypeptide, transported to the anterior pituitary, where it stimulates the secretion of corticotropin. Consequently, corticotropin stimulates increased production of corticosteroids, including cortisol, which directly affects the response to stress. Vasopressin hormone is a small molecule which increases the reabsorption of water by the kidney and results in vasoconstriction (contraction of blood vessels). So the blood pressure increases. The action of CRH and vasopressin leads to activation of the hypothalamic - pituitary - adrenal (HPA) axis, which includes a feedback system between the hypothalamus, pituitary and adrenal glands. While the primary role of the cortisol is metabolism (by controlling the level of glucose circulating in blood), it also affects ion transport (protecting cells from loss of sodium and potassium excretion), immune response (blocking the proliferation of T - cell by preventing T - cells recognize interleukin signals, and people suffering from chronic stress have a great susceptibility to infection) and even memory (excess of cortisol causes atrophy of the hippocampus, an area of the brain where memories are stored).

Often, students choose to celebrate after a stressful event, by the consumption of alcohol in large quantities in a short term. The irony is, that this way of relaxing actually stimulates the HPA axis and supports the production of cortisol – the stress hormone. In fact, the levels of cortisol as a result of alcohol consumption, may be higher than the amount of the cortisol due to stressful stimuli. Alcohol suppresses the nerve cells responsible for the inhibition of HPA, and so promotes the activity of the HPA axis. As a result, the suprarenal excludes higher cortisol levels. It is surprising that college students are mostly complaining about the effect of anxiety, stress and pressure, instead of fighting with stress, which is unnecessarily increasing: for example, lack of sleep, caffeine intake, and alcohol consumption [12]. From a certain point of view, a stressful situations and factors can be considered quite beneficial, because if a person successfully handle and bottom-stress, its ability to survive, to grow personally and to adapt, increases. Cope with the stress is a necessary article enabling a person to adapt to the change. Coping, can be defined as a higher degree of adaptation, a kind of fighting with excessive load. It refers to the behavioral and psychical effort to reduce stress situations. A number of factors affect how people cope with the stress. There are individual factors (vulnerability, anxiety) and environmental factors (characteristics of

stressful situations). In managing the stress effectively, one of the following strategies, oriented either on a particular issue, or the emotions or on the change of attitude, can be used. Strategies, addressed to the problem, are mainly used when a person considers stressful situation as manageable and can eliminate the source of stress. Strategies addressed to emotions, can be used if a person is not able to control a stressful situation, but is able to control the feelings and emotions in relation to a specific stressor and tries to maintain a balance. The last strategy of coping with stress is to focus on a change of attitude, which means that a person will try to re-evaluate the attitude towards a stressful situation. Physicians estimate that a chronic, uncontrolled stress reduces the body's resistance to disease, damages the immune system, causes various physical disorders and causes more than half of all health problems [13].

Human impact on the environment gives rise to the so-called. civilizing influences. For example, mining and quarrying, transport, tourism, chemistry, construction of objects, leads to the devastation of nature and landscape, depletion of mineral resources and the pollution of the individual components of the environment. Industrial activity creates a lot of toxic substances, increases the noise and destroys the country. Agriculture creates new arable land by clearing, burning and destruction of forest trees. Some negative effects of human activities achieved global level, so in recent decades, a new scientific discipline, ecology, whose main mission is to solve global environmental problems and to find ways to create suitable living conditions for people, was established. Polluted and degraded environment has many negative, mutagenic and teratogenic effects on living organisms such as acute diseases, malignant tumors, birth defects and developmental harm to the fetus. The environment in which one lives and works, includes: *physical, chemical, biological and psychosocial factors*. All these factors are called stress factors of the environment. They cause respiratory disorders, cardiologic, neurologic, immunologic, metabolic and hormonal changes. Microorganisms such as viruses, bacteria, fungi, microscopic fungi, different types of biological allergens (pollen, hair), are among the biological factors that cause a variety of infections and allergies. From chemical factors, that are cytostatic agents, in the industry that are the emissions of sulfur, nitrogen, carbon, mineral acids, heavy metals, radionuclides, and hydrocarbons. In the field of agriculture, pesticides, herbicides, insecticides and fertilizers are increasingly used. Food consists of preservatives and artificial sweeteners. Physical environmental factors are lighting, noise, vibration, electrostatic field, solenoid field, temperature, pressure and humidity.

Health and safety and human relations are psychosocial environmental factors that cause stress. Human spends at work most of his life, therefore work is a very important factor affecting his health. The importance to know the risks arising from psychosocial work

environment was emphasized several times at national and international level. Emerging OSH risks, are the risks of any work that are new and growing. Mainly, that are new forms of employment contracts, flexible working hours, job insecurity, work intensification, aging workers, violence and bullying. The first main theme, new forms of employment contracts (including temporary contracts, and outsourcing) is an important factor affecting the safety and health of many workers. Workers in these types of contracts are more vulnerable than permanent workers, because they work in worse conditions and receive less OSH training, which increases the risk of accidents at work. There is also a higher risk of isolation of workers due to discontinuity of their career. For the employee, flexible working hours could be beneficial, if the employee can determine it themselves. If not, it may cause health problems. Flexible working hours could be distinguished into these types: shift work (night, evening or weekend work), overtime (extended working hours, working weekends), unpredictable working hours and part-time work. For example doctors, responsible for maintaining public services such as gas and electricity must be able to intervene if necessary. Such a method with non-standard working hours is the most difficult, because not all things can be foreseen.

Job insecurity is defined as the overall concern about the continued existence of work in the future or any threat of job position, position within the organization and employment opportunities. The most frequently, it is mentioned in the context of organizational changes, which include reorganization, outsourcing, mergers, layoffs, and often as a way to increase competitiveness. To explain the negative health consequences of job insecurity (such as burnout, stress and depression) stress theories are used. Regarding working conditions associated with temporary work, Benach [14] argues that temporary workers due to lack of training, work on low-skilled jobs in painful and uncomfortable working positions and noise. Temporary work is in fact characterized by a lack of opportunities for education and therefore temporary workers reach formal education only sporadically. All employees of timber company in Tisovec perceive a high degree of uncertainty of their work and they are under constant stress from the fear of loss their job, which is also reflected in their mental health. Neurosis and depressions are frequent. It is clear, that permanent employees have, more control over their work processes, better working conditions, frequently use personal protective equipment, undergo more training, and are better remunerated and motivated. Other emerging OSH safety (Occupation Health and Safety), risk, is the aging of the workforce, as a result of a higher retirement age and the aging population. Aging workers are more prone to bad working conditions than younger workers. Moreover, if older workers are not enabled to lifelong learning, mental and emotional demands on them increase, and can affect their health and the likelihood of accidents at work. Aging can be understood as a

dynamic process of change in which some functions are declining (eg. muscle strength, vision, short-term memory and speed of perception), while other skills are developing (eg. assess competence, stability and a sense of responsibility). Engineering and construction company in Tisovec, employs 420 employees, working either in production (such as machinists, turners, drivers, welders ...), or as a non-production workers in administration. According to internal statistics, 42% of manufacturing employees are over the age of 50 and 65% of non-production workers are over the age of 50 years. The relationship between the age of staff and work injuries, was not demonstrated.

Work intensification (high load and working pressure), the risk associated with new forms of employment contracts and the increasing amount of information due to the introduction of new information and communication technologies in the workplace. Higher load and higher demands in terms of a smaller number of workers may lead to increased work-related stress. In this context, workers are assessing on effectiveness and results of their work and therefore they tend to work longer working hours in order to complete their tasks, sometimes without adequate compensation (eg in the form of free time or financial compensation and social support). Some employees are trying to hide the difficulties with high job demands because of the fear of losing their jobs, which can be a source of additional stress. Violence and bullying are a source of stress and they negatively affect physical and mental health of victims and witnesses [15]. For example, a post-traumatic stress disorder, anxiety, depression, lethargy, irritability, memory disorders, suicidal tendencies, organic and functional disorders of sleep, loss of appetite, low blood pressure, vomiting, chronic fatigue, headache, muscle and joint pain. Up to 90% of workers in timber company in Tisovec met with bullying. It was found that all of the above mentioned changes in the organization of the work may lead into increased pressure on workers and may also interfere with the privacy. Experts stressed that the imbalance between work and private life can lead to stress and other negative health consequences. Irregular working hours combined with a lack of opportunity to negotiate a working time which would suit the personal needs of workers, often causes problems, affecting work and family life and health of employees. Weekend, night and casual work, which combine high intensity and variable working hours, lead to conflict between work and private life and have harmful effects on well-being. Identification of emerging risks is aimed to early anticipating, to avoid negative impacts on the health of workers. This way, more effective interventions and strategies can be better planned to address future risks. Workplaces should trigger feelings of well-being and safety of workers and respect their requirements. However, from an economic point of view, to establish and maintain optimal working conditions financial funds are necessary. Therefore, cost-benefit analysis is important. This answers to the question whether the

investment will return or not. Primarily, the level of working environment depends on the access of company to the problem. Companies are often reducing working environment problem only to compliance with the limit values of individual factors working environment provided by law. And they solve only most visible and the most serious problems. Secondly, the level of the work environment also depends on the working people themselves. Dirty windows, walls, floors unwashed, loose dust, non-use of personal protective equipment, are the underlying consequences of irresponsibility of workers for whom the working environment was created. In April 1996, British Standard BS 8800 - Guidelines for the management of health care and safety (OHS - Occupation Health and Safety), based on the principles of ISO 9001 and ISO 14 001, was published. By its publishing, the effort to create favorable conditions for integrated management and its application in practice, was demonstrated.

Conclusions. Human adaptation to the changing environment, exhibit strong growth, as well as the environment is changing. Peculiarity of man is that the natural environment may vary. A large part of life a man spends at work, which puts pressure on the physical, chemical, biological and psycho-social aspects. Research of these phenomena is not only the subject of anthropological sciences, but especially of cooperation between environmental and anthropological scientists.

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