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ECOLOGICAL PERCEPTION OF FORESTRY ENVIRONMENT AS THE CONDITION OF CORRECT WORK WITH TECHNOLOGIES REGARDFUL FOR ENVIRONMENT

When resolving the task "Agricultural Population and Environment" I tried, by means of both the biological anthropology methods and the method of multilevel homogenization of data samples, to prove the inhibitory influence of environment on human organism development. After the evaluation of anthropometrical results, the hypothetical assumption was verified that 16 years old boys living in heavy polluted environment have smaller stature with lower mass, less efficient thorax with smaller perimeter, shorter limbs, lower endo-component and with more fat. A statistical tendency towards a lower stature was found in them (Sedivý, 1994).

Using sociological methods, my further attempt was to map the cultural system of environmental awareness which activates the environment-friendly behaviour. By analogy with the assumptions of Kretsch, Crutchfield and Ballachey (1962) the components of environmental awareness or cognition – i.e. knowledge acquired in a passive way, interactive sensitivity to environment, active responsibility and reflected ecological behaviour – were derived. Spatial relations with other biological species, established during acculturating activities in the environment, should lead to a more effective adaptation of man: from the contemporary unstable relation of man to the nature (better to say to a cultural environment remote from nature which is on the one hand naturally exploited and on the other hand being filled up with human artifacts and ecological excrements to such an extent that man becomes the obstacle of his own existence) to symbiotic partnership and free co-operation with the nature. The delaying of self-reflection of man, i.e. the retardation of thought behind being in a rapid deteriorating environment is caused by unusual complexity of global ecosystem as the object of cognition (Podrabský, Sedivý, 1989).

For reasons derived from biological experience concerning females that have higher sensitivity but only low or no reactivity towards environmental factors whereas males have lower sensitivity but respond vehemently, 500 boys in 16 years of age (16,00 - 16,99) were chosen from seven districts of the Czech Republic. The substantial part of the sample in a given region was chosen only to a small extent casually; the remainder was chosen according to the type of school (today it seems to have been an error). Each proband, after having passed through the anthropometric examination, filled in the questionnaire with sociodemographic anamnesis data which differentiate, according to the assumptions, the variables to be used for the solution of the problem. Among these were for example the quality of environment (according to the data bank of TER-

PLAN Praha), type of school, residence (with the assumed difference between residents and immigrants), municipality size, information about parents and others. Different kinds of problem questions were oriented towards the above mentioned components of awareness of environment. The processing of statistic data was made by the programme MYSTAT.

Some short conclusions from obtained results: The investigated teenagers consider the nature to be a significant value and necessity. Nevertheless, I found only a low level of the cognitive component in them; their knowledge about the environment was in no way dazzling, rather only in general level. Strikingly often, they mistake causes for consequences, 50 % of them did not know about any improvement in the district. In spite of this, they made masterful assessments of individual environmental components (as the most important they labeled those components they could discern by sight and simultaneously perceive by another sense, as the second ones those discernable only by sight and as the least important they labeled the monitored components recognizable by measuring instruments). It is no wonder when they denoted mass media as the source of environmental information (notice that during the investigation this point at issue was tabuized).

They were correct to consider the active elements (e.g. protection devices investment, management of production, technical parameters of technological devices) in the protection and formation of nature as most important whereas they evaluated the passive elements of protection or the removing of consequences as least important. For the most effective are to be held such measures and activities which ensure direct changes in the behaviour of men, i.e. higher acquaintance with relevant information, better education, initiatives of individuals and small groups and more rigorous recourse. Only in the following group are measures influencing the behaviour at the middle and top levels of business management and public government.

They expressed anxieties about the bad state of environment just as often as the boys without any anxieties. A relatively high sensitivity to environmental changes was found in lads living in heavy contaminated regions. They submitted bad feelings, anxieties and fear much more often than the others.

They took for basis of their mostly optimistic projections (transfer of their inward experience and attitudes outwards) the possibilities and capacities of society, so that only the fourth part of them confirmed some own activities beneficial to the environment. This admitted activity was of doubtful ecological value; it was mostly planting of public green and cleaning in municipalities and woods. The majority did nothing but 50 % of them were interested in information on environment which can obviously further stimulate the behaviour friendly and beneficial to the environment.

I held for very important the finding that almost 75 % of respondents were willing to make a resolution to behave in a way that would be detrimental to them whereas the others did not want to abstain from anything that would be at the expense of their own. It means that they were willing to resign to some consumer goods in the interests of bettering the environment. Should further proper development of this phenomenon which would be beneficial to the adaptation processes come about, it would result in the reduction both of consumption and production volume and of exploiting and devastating activities of the succeeding generation.

Surprisingly enough, one fifth (21 %) of the boys was thinking about the change of domicile in order to get into healthier environment. Almost all of them wanted to bet-

ter their situation. Consequently, subjective ideas of inhabitants on current state of the environment in the districts of the CR are, in my assessment, almost identical with objective facts (Sedivy, 1989).

The strongest inward relation was found, by means of correlation analysis, between classification characteristics of sociodemographic anamnesis and variables concerning the cognition. By two-level classification of theoretically justified combinations of groups of variables, the influence on their random distribution (on the basis of statistically significant differences of frequency) was assessed. From this, heterogenizing influences were derived as follows:

- cognition on sensitivity component (in accordance with the phylogenetic theory of emotions which are considered to be the most original form of orientation in a unrecognisable environment with biological significance);
- influence of anamnesis classification characteristics on cognitive components;
- environmental awareness is further polarized by further cognitive variables and by sensitivity data;
- responsibility is heterogenized by anamnesis characteristics and by cognition variables;
- environment-friendly behaviour is differentiated by anamnesis data.

These findings are undoubtedly of social psychological importance for the motivation and educational influence on awareness of environment and behaviour of people. It is clear to all of them that the cognitive component has an additive (+) and multiplicative (x) influence on all components of the hypothetical culture system. The emotive component at investigated boys of sixteen unambiguously predetermines their attitudes to environmental responsibility. In opposite, to them, the activating factors of sensitivity of adults can be regulated by the level of their knowledge and the ethic apparatus. Their responsibility is determined mostly by experience and regulated by legal norms. The emotional orientation in the environment is, with a high degree of probability, related to personality background whereas the sensitivity does influence interest as well as further cognitive efforts.

The cognitive and emotional components of awareness of environment activate the thought process the product of which are estimates and judgments. These should include statements concerning the responsibility formulated during successive integration of ethic attitudes. Environmental responsibility after individual selfreflection should manifest itself in the behaviour towards the environment which is also predetermined by anamnestic background.

The dynamics of environmental awareness is expressed in the contingent prediction that modal attitude to environmental changes formerly manifested itself in form of unconscious indifference and inactivity as the result of dictated revolutionary acculturation of the so called socialistic way of life. The reason is the retardation of cognition of complicated phenomenon's behind simple phenomenon's (which is for the sciences characteristic) as well as the retardation of synthesis behind analyses. The polarization of modal behaviour occurs (in consequence of increasing knowledge of detrimental effects of devastating factors and of ecology as a scientific discipline, i.e. during the process of filling up the information vacuum) both towards passive fear and substitute frustration activities inclusive the aggression, and towards reflected activity in the benefit of environment.

We shall carry out a modified type of such investigation at Czech forestry workers, i.e. students of high schools and universities and manual and technical workers of

forestry joint-stock companies. We want to verify the hypothetical assumption (derived from the results of a pilot probe) that the necessary but not sufficient condition of correct work with environment-friendly technologies is the reflected environmental perception of the working place – forest environment. We would like to participate in the international research, educational and cultural programme "Carpathians" that is being organized by several foreign corporations. On this occasion we would like to co-operate with Ukrainian colleagues who would find out the social and environmental perception of forest environment by Ukrainian forest workers. The results would be used for international comparisons. I openly offer the co-operation in the project to ready colleagues from Lviv and Transcarpathian Ukraine. I ask the organizers of the programme "Carpathians" if they would kindly give their approval to this co-operation.

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BIODEGRADABLE OILS IN THE OPERATION OF PORTABLE FOREST MACHINES

Considerable amounts of oils used for the lubrication of portable forest machines, particularly power saws, get into the forest environment. The paper brings some new findings concerning the dispersion of oils used for the lubrication of cutting parts of machines and a possibility of replacing mineral motor oils with biodegradable oils. Original methods used made it possible to perform a precise measurement of oil dispersion and to study the service life of engines in portable machines. The paper aims at a contribution to the knowledge of the related negative effects of machines on the environment and on the health of machine operators.

Introduction

Lubrication of chains in power saws at a loss contributes to the introduction of oils into the natural environment. Expressed in absolute values, the amounts are so large that they can be considered an important element with a possible negative impact on the forest ecosystem, particularly contaminating the surface and underground waters. Some studies report as much as up to 60% of oil used for the lubrication of chains in power saws getting into the water either directly or through soil infiltration.

Research projects in Germany, Austria, Sweden and later also in the Czech Republic were aimed at a substitution of mineral lubricants with substances of natural origin and led to the development of vegetable-based technical oils. However, if these oils are to become a full-value replacement of mineral oils, their technical parameters have to be at least so good as those of mineral oils. This is why a research task was started in 1992 in cooperation with the CR Ministry of Agriculture, concerning the substitution of