Vojtech

Cultural as pure, natural as impure? Construction of symbolic boundaries among Gypsies in Slovakia

There has been an ongoing debate in contemporary anthropology whether and to what extent it is meaningful to separate categories such as nature and culture. An insight into Romany/Gypsy settlements in the region of Spiš in central Slovakia brings an interesting empirical material – not only due to the fact that until now the question of the relationship between Gypsies and nature has not been virtually discussed. This study draws on field research that took place between 2007 and 2011. It lasted for approximately four weeks and was executed in six settlements where traditionally-settled Gypsies live. The outcomes of the field research compared to scholarly literature indicate that the concept of defining boundaries with majority and ritual impurity may be relevant for the relationship of local gypsies to their natural environment. Moreover, it implies there are numerous similarities in the relationship between Gypsies and the majority and between Gypsies and nature. Text considers the traditional nature–culture dichotomy and comes to a conclusion that other dichotomies such as, for example, wild/domesticated or the chaos/cosmos and physis/nomos divisions of ancient Greek thinking might be more relevant. Text also makes a clear connection between the system of ritual impurity and defining boundaries against the wild/unknown. Study finds culturally specific features in relation to nature in two areas: in the markedly non-agricultural nature of the Gypsy way of life and in defining boundaries between the pure and the impure (considering nature as an abstract principle). Study identifies key areas where this delimitation takes place, to describe the nature of construction of symbolic boundaries and to find out which aspects are specific for Gypsies in Spiš. Finally the research clearly concludes that at least seven dimensions are relevant for consideration: spatial distribution, relationship to the woods, night, animals, women, corporeality, and flowers.

Frantisek

ABSTRACT

Classic Title: **Complex Geophysical Survey of the locality Ledové sluje (Ice Caves) in Podyjí National Park**

Alternative Title: **Subsurface Mystery of Ice Caves in Podyjí National Park**

Ledové sluje (Ice Caves) are counted among the unique landforms in Podyjí National Park (Czech Republic). There is an extensive system of pseudokarst caves and block fields developed from rock slides on the NW slope of the locality. This area has been known since the mid 19th century, but a mechanism of genesis is still not completely explained. The theories have involved complex of processes such as the Dyje river lateral erosion, tectonic effects (faults) and trigger event (earthquake). Those theories were based on geological, geomorphological, spelaeologistical research and on test geophysical survey (Pospíšil, 1996).

The new complex geophysical survey will be described in this paper. The measurements have been made using the following methods: Georadar (GPR pulseEKKO PRO) and 2D Multi-Electrode Resistivity and IP Tomography. The GPR data postprocessing contained advanced corrections (included time-depth conversion with 2D velocity model, etc.). The subsurface images were integrated in a detailed terrain model from laser scanner station and were also matched with cave maps.

The results indicate a new fault with high signification to relief development. Secondly, the new possible place of pseudokarst caves is determined. Thirdly, alluvial deposits from the Dyje river were found under the rockslide (which could change the question of age of the Dyje valley). In addition to this, the paper will clarify how the whole spatial situation is uses a 3D model with terrain and subsurface layers.

Jitka

CONCEPTUAL/THEORETICAL PAPER

Service Lifecycle according to SSME

Abstract

Service lifecycle belongs to several unexplored and undescribed terms in the SSME field. In contrast to given definitions of service systems, given service characteristics and service system lifecycles, the deep study of service lifecycle is missing. This theoretical paper aims to fill in this gap.

Firstly, the background of SSME is briefly presented. The transition from Goods-dominant logic to Service-dominant logic and SSME changed not only the economic view, but it also emphasized the service lifecycle instead of product lifecycle. Subsequently, early service lifecycle diagrams have appeared, each with its own distinctive features, and from different areas. The following questions concerning lifecycles are asked in the paper. Does the ITIL service lifecycle cover every service area? Is there a possibility to describe every service lifecycle by Deming cycle? Is the service lifecycle the same as product lifecycle? Secondly, to answer these questions, the comparison and analysis of these known lifecycles are presented. Analysis has referred to a common characteristic of service lifecycle and has showed Cyclic paradigm as a suitable pattern. Finally the general diagram of service lifecycle is described and is presented for further discussion.

Keywords: service science, service lifecycle, SSME

Josef

Title and abstract of thesis:

Liposome-based vaccine delivery systems

Since the first experiments of vaccination of humans by Edward Jenner against smallpox, the huge effort to achieve an effective vaccination strategy has been developed and a lot of knowledge in the fields of vaccination and immunology has been investigated. Vaccination is defined as a process, through which application of the vaccine stimulates the immune system against the pathogen. A large amount of vaccination strategies have been developed during past decades. First generations of vaccines contained inactivated or attenuated whole cells of pathogens, whereas more recent vaccines are based on sophisticated delivery systems carrying subunit proteins.

Nowadays, the safety of vaccination is emphasised. Thus, subunit protein vaccines lacking potentially dangerous whole pathogens are preferred. Unfortunately, these types of vaccine do not stimulate the immune system sufficiently until after adding other components, which instruct the immune system to respond strongly towards the antigen. Moreover, it has been shown recently that activation of specific types of immune response to certain pathogens is necessary to be protective against disease. It is a major challenge to develop new vaccine delivery systems covering issues of effectiveness, safety and also economic cost-benefits.

Recently developed antigen delivery systems are based on biodegradable polymer microspheres, such as poly(lactic-*co*-glycolic acid) or chitosan, micelles and liposomes. Liposomes are very promising for antigen delivery due to their versatility, biocompatibility and capacity to carry several active compounds together. This allows a synergistic effect among all components.

It was found that liposomal surface bound antigen combined with lipophilic derivatives of muramyldipeptide is suitable for induction of strong Th1 type immune response in mice. Importantly, no pyrogenicity in rabbits was measured. *In-vitro* tests confirmed the activation of dendritic cells, that initiate immune response.

The strategy of vaccination is one of the most promising approaches to preventing the spread of infectious and parasitic diseases and it is hoped that they

may be able to fight against major killer diseases of the world such as malaria, HIV and cancer.

Nicole

Macroalgal shifts on Lakshadweep atolls: herbivore size and environmental factors

Coral-macroalgal phase shifts have received a great deal of attention. Studies, however, often suggest that we do not yet understand the process thoroughly. We studied the herbivory and phase shift relationships on the Lakshadweep Islands, where fish populations are untouched by fishermen. The study explores how these relationships differ among different parts of the reef and how different sized herbivore groups may play different roles in the coral-macroalgal balance, as larger herbivore fish are thought to play a major role in keeping reefs in a coral-dominant stage.

We experimentally manipulated herbivore density on Agatti atoll using exclusion cages of two mesh sizes. One excluded all fish and urchins; the other excluded only large fish. Both cages (40x40x20 cm), with controls, were installed on 24 sites. The sites were grouped into pairs: A) closer to the reef crest, B) closer to the lagoon. The sites were situated along the reef starting from the lagoon's main channel, moving further onwards along a gradient of the water current.

After 5 months macroalgae in small-mesh cages settled at 11,3 mm height with 100% coverage, however the big-mesh cages underwent no significant change (height 2 mm, 52% coverage). There was also significant difference in algae growth between sites A and B, and along the gradient, suggesting that the decline of herbivores may have different impacts under different environmental conditions. Our results indicate that the importance of small herbivores may have been very underestimated and suggest that the mechanisms of coral-macroalgal phase shifts may be more complicated and site-specific than earlier thought.

Anna: Introduction

The atmosphere is the dominant medium for mercury transportation in the environment. When the mercury is released in the atmosphere, it becomes a subject of various physical, chemical and photochemical processes and interactions. The important characterisation that distinguishes mercury from other elements in the atmosphere, is its ability of re-emission into the atmosphere again after retention in the soil [1-3].

Atmospheric mercury exists primarily in three forms. The predominant form in ambient air is a gaseous elemental mercury Hg^0 (GEM). GEM comprises over 95% of total gaseous mercury [3,4]. In the atmosphere Hg^0 may be oxidised by ozone, alkyl peroxides, radicals, peroxides and halogens to Hg^{2+} compounds, commonly including $HgCl_2$, $Hg(OH)_2$ and $HgBr_2$. Oxidised mercury compounds are called reactive gaseous mercury RGM, which are usually defined as the gas phase mercury compounds that can be collected with potassium chloride sorbent [3]. Mercury associated with particulate matter (PM) is called particulate-phase mercury Hg(p). This Hg(p) is not the major form of mercury emitted directly to the atmosphere, but it is often formed through adsorption or partition of gaseous mercury or its compounds on the particle surface [4].

Some fly ashes may capture mercury which would otherwise be emitted into the atmosphere. Great attention has been paid to the capture of mercury by unburned fly ash carbons. Fly ashes capture different species of mercury depending on their nature and the type of anisotropic particles, or on the type of unburned carbon [5,6]. Rudimentary particles are important in mercury transformation systems and are emitted by combustion of fossil fuels. There is a lot of Hg(p) associated with very fine particles of elemental carbon (mostly <2 μm) due to its adsorbing capabilities [4,7]. The amount of adsorbed elemental mercury on particles is not really important, but 2 to 35% of Hg compounds can be absorbed (mainly $HgCl_2$, $Hg(OH)_2$, Hg_2Cl_2, $HgBr_2$, $HgSO_4$, CH_3HgCl and $(CH_3)_2Hg$) [8]. Other mercury compounds associated with particles are HgS and HgO. Due to their insolubility they occur in solid phase [4,8]. Compounds are deposited through different ways and due to their different physical and chemical properties they play different roles in the mercury cycle and its impact on the environment [4]. Ash particles also act as catalytic sites for oxidation and reduction reactions of mercury (e.g. photolytic reduction of Hg(II) to Hg^0) [8,9].

Most atmospheric aerosol mass is comprised of SO_4^{2-}, NO_3^-, NH_4^+ and H^+, organic matter (quarrels, pollen, viruses, bacteria), earth crust material (weathered soil, dust), water, and marine salt. Fine-particle aerosol contains a significant amount of carbon (elemental and organic) and some transitional metals [5].

In this paper, the characterisation of mercury forms in urban PM samples were studied. Dust samples were collected in four localities with high traffic density in Prague. Samples were homogenised and the PKC sample was sieved into three particle size samples (see 2.1.). To assess the distribution of mercury species in particles, the extraction method according to Wang [10] was applied. Wang´s method was developed for the understanding of accumulation and transformation of mercury species in soils, in relation to the deposition of atmospheric mercury. To obtain the Hg portion bound to sulphides, the procedure of sequential extractions was modified according to Fernández-Martínez [11]. It consists of two stages: the first is based on a nitric acid leaching, and the second is based on a saturated solution of sodium sulphide, which is used for HgS extraction to form the soluble Hg polysulphides [11]. Besides sequential extractions, a thermal desorption method was utilised for the thermal mercury release. An adsorption of elemental mercury on the particles surface was also studied.

Marketa

Nationalism and political parties in Romania and Bulgaria: nationalist ideas (not only) for radical right[1]

Abstract

This paper examines the scope and role of nationalism in the current party politics in Romania and Bulgaria. Some studies have dealt with nationalism in Central and Eastern Europe (CEE) mostly only between radical or extreme right parties. Therefore this paper focuses on all relevant political parties (PP) to receive complex information about the role of nationalism. It aims to show importance of nationalist rhetoric for political parties in electoral competition (party programmes) of PP and political discourse (debate) in party systems (PS). Mixed qualitative research methods are applied for these two levels. In order to find nationalist position of the party programmes the content/text analysis is used. The political debate is explored by discursive analysis of leader's proclamations and through the interviews. Based on the concept of "political opportunities structure" we assume this paper shows us different level of nationalist rhetoric used in current politics in the countries with same initial condition. We verify our theoretical assumption about the presence of minorities and legacy of communism opened the space for nationalist topics and rhetoric to be strongly presented in the political scene. The analysis shows the high level of importance of nationalism between all political parties in party competition and party systems of Romania and Bulgaria. Most likely it is influenced by the previous regime but it would need additional analysis of the reasons for that situation.

[1] The title and abstract of paper for academic journal. Paper is currently in progress, up to now with preliminary results.

Belma

Docosahexaenoic acid is a promising agent sensitizing colon cancer cells to TRAILinduced apoptosis

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Polyunsaturated fatty acids (PUFAs) have been shown to influence the development of colorectal cancer. Docosahexaenoic acid (DHA) is a PUFA of n-3 series, with unique abilities that allow it to affect diverse physiological processes including cell membrane function and different cell signaling pathways, thus providing protection against various human diseases. It is also documented that DHA can modulate events that are associated with induction of apoptosis in cancer cells. We hypothesized that DHA exerts beneficial effects in sensitizing colon cancer cells to apoptosis induced by TRAIL (tumor necrosis factor-related apoptosis inducing ligand).

TRAIL is a tumor necrosis factor family cytokine, which selectively induces apoptosis in cancer cells while sparing normal cells. Because of these unique selective effects, it is considered as a promising anticancer agent. However, some cancer cells including those in the colon are resistant to TRAIL-induced apoptosis. Here we showed that DHA can stimulate TRAILinduced apoptosis in colon cancer cells, which was accompanied by enhanced activation of caspases-8 and -3, and cleavage of caspase substrates. At the same time, caspase-2 and -10 remained unaffected We also demonstrated the important role of mitochondrial apoptotic pathway in the effects observed, and provide evidence of potent stimulation of proapoptotic Bcl- 2 family proteins, such as Bax and Bak, following combined treatments. A significant downregulation of selected inhibitor of apoptosis proteins (IAPs) was also observed in the cells treated with DHA and TRAIL. While pretreatment with physiologically relevant concentrations of DHA, followed by subsequent treatment with TRAIL, induced apoptosis in several different colon cancer cell lines, it was not harmful to normal colon epithelial cells.

This supports the selective cytotoxic effects of the interesting drug combination on colon cancer cells. Our research highlights an important role of DHA in modulation of colon cancer sensitivity to TRAIL-induced apoptosis.

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Jan

In the authorship identification problem, examples are given of short writings of N authors and an anonymous document written by one of these N authors. The task is to determine the authorship of the anonymous text. This problem is predominantly solved with machine learning methods. The properties of an individual document(such as words or n-grams), or a similarity between document and author are mainly used as attributes for the machine learning.

An experiment was conducted to extend attributes by the ranking of similarity between a document and an author, transforming the similarity between the unknown document and one of the N authors, to the order in which the author is the most similar to the document in the set of the N authors. The comparison of the similarity probability and the similarity ranking was made using Support Vector Machines algorithm. Results showed that machine learning methods perform slightly better with attributes based on the ranking of similarity, than with previously used similarity of an author and a document.