

Daniel

Can the urban social conflict explain a spatial variability of voting preferences in an urban area?

In most electoral geography works, urban areas play a role of homogenous spatial-analytical unit. Actually, the voting preferences in urban areas are spatially distributed heterogeneously. In general, a city does not take a big deal of electoral geography research attention. The aim of the paper is to take a look into voting behaviour inside the boundaries of the city of Warsaw. Instead of the traditional explanation of spatial distribution of voting behaviour by distribution of socio-economic status, the paper attempts to investigate whether there are any other spatial variables - typical for urban sociology and urban geography - that might explain voting behaviour in the space of the city. The study is based on the 2015 general election in Poland.

The role of B-Myb protein during DNA repair

Introduction

B-Myb is a highly conserved member of the Myb proto-oncogene family that is ubiquitously expressed in proliferating cells and performs essential roles as a transcription factor¹. This is also demonstrated by the phenotype of *B-myb*-knockout mice, which show early embryonic death caused by proliferation defects of the cells in the inner cell mass of the blastocyst². Recent work performed in *Drosophila* as well as mammalian cells has demonstrated that B-Myb and its *Drosophila* homolog (dmMyb) are part of a dynamic protein complex (dREAM/Myb-MuvB, corresponds to human LINC complex) that regulates genes acting at the G2/M transition of the cell cycle including *CCNB1* (cyclin B1) and *CDC2* (Cyclin-Dependent Kinase 1)^{3,4}.

In addition to its function at the G2/M-transition, there is accumulating evidence that B-Myb might also be involved in DNA replication. In *Drosophila*, it was shown that Myb controls the activity of the replication origin that mediates chorion gene amplification by a mechanism that does not involve its transcriptional role⁵. Decreased expression of B-Myb also disturbs the DNA replication in embryonic stem cells including a slow-down of the speed, collapse of the replication forks and an increase of the number of replication foci⁶. Furthermore, Werwein *et al.* showed that knock-down of B-Myb slows down S-phase entry and progression in HepG2 cells. Interestingly, expression of a mutant of B-Myb that lacks sequence-specific DNA-binding activity and is unable to activate Myb target genes is still able to rescue the defect in S-phase entry after knockdown of endogenous B-Myb⁷.

Although it is hypothesized that the crucial role of Myb proteins in regulating the cell cycle progression is responsible for maintenance of genomic stability, their possible involvement in regulation of DNA damage response (DDR) is often suggested in the literature. An initial study of the *Drosophila Myb* homologue revealed that the absence of *Drosophila Myb* causes genomic instability⁸. Furthermore, decreased genomic stability was also detected in zebrafish and mammalian cells carrying mutant versions of B-Myb or showing reduced B-Myb expression⁷. Mannefeld *et al.* have shown that B-Myb is required for re-entry into the cell cycle after recovery from the DNA damage-induced cell cycle block⁹. Ahlbory *et al.* have revealed an anti-apoptotic role of B-Myb in cells that were UV irradiated or treated with a DNA alkylating agent¹⁰.

Moreover, transcription factors B-Myb and c-Myb can regulate chromatin dynamics as shown in androgen receptor gene regulation. B-Myb and c-Myb are bound to the androgen

receptor promoter at the ADF element and mediate the coregulatory switch between activator poly(ADP-ribose) polymerase PARP-1 and the repressor p53 in response to aging and oxidative stress¹¹. This finding is of special interest because changes in chromatin structure represent an important part of response to DNA-damage.

Very recently, B-Myb was identified as a novel interaction partner of the Mre11-Rad50-Nbs1 (MRN) complex, a key player in the repair of DNA double strand breaks. It was shown that B-Myb directly interacts with the Nbs1 subunit of the MRN complex and is recruited transiently to DNA-damage sites. In response to DNA-damage B-Myb is phosphorylated by protein kinase GSK3 β and released from the MRN complex. A B-Myb mutant that cannot be phosphorylated by GSK3 β disturbs the regulation of pro-mitotic B-Myb target genes and leads to inappropriate mitotic entry in response to DNA-damage¹².

We have discovered... (hopefully will be added soon).

Dissociative-like experience is defined as a state of relief which occurs to predisposed people during an application of addictive behaviour (Jacobs, 1986, 1988). Previous studies (ex. Griffiths et al., 2006) established evidence about significant effects of dissociative-like experience on gambling behaviour. However, this phenomenon and its specification is not described in the case of online gambling. There are three variables at work in experience of dissociation – gambler, gambling environment and type of gambling. The aim of this article is an exploration of the dissociative-like experience on the case study of live online tipster – a former client of out-patient programme.

Dissociative-like experience is used as an escape from everyday reality. The online environment enables and simplifies the experience. Accessibility, velocity, simplicity and convenience play important roles in the online gambling process. Additionally, a specific type of gambling, i.e. live online betting, delivers the illusion of skill or expertise, impulsivity and interactivity. The case study shows a bright palette of dissociative manifestation in a gambler's daily reality. Dissociative-like experiences are important factor in the genesis of problem gambling or addiction. Therefore, following research of dissociative-like experience among online gamblers (regardless of gambling game) is important for the development of approaches to harm reduction, prevention and treatment methods and policy.

Case study – short summary (before results section)

Thomas, aged 45, entered an addiction outpatient program after several months of intensive gambling. He had already lost almost all his wages and family money. Additionally, his debt was about 100,000 CZK. Recently, Thomas has played very intensively: almost 24/7 – during work, all night. He estimates about 8 to 15 hours a day.

His main drive was winning back lost money. And so he has started to risk more and more. He stopped betting rationally with low risk small bets and sure tips. He was betting on different sports in the USA, Asia and all around the world, as the sports started live broadcasting in different time zones. As soon as minimal opportunities emerged, he was connected to betting websites. He was quickly returning from work meetings to connect online and gamble. Live bets absorbed his whole life. He preferred live bets for immediate responses.

Retroactively, Thomas connected his gambling beginnings with marriage and family problems. Misunderstandings with his wife were observed for a longer time. Illness and hospitalization of his wife accelerated the situation. Gambling served as an escape from an empty house and confrontation with reality. Live bets also brought excitement and adrenalin which was missing even before. Live online betting has become his coping strategy, his cure for difficult and stressful situations.

Infrared stellar radiation

In this thesis we spectroscopically study Wolf-Rayet stars in the infrared wavelengths. We concentrate on particular Wolf-Rayet stars, namely WR 105 (subtype WN9h), WR 102g (subtype WC8), WR 102f (subtype WC8) and LHO 76 (subtype WC9d). Stellar data were obtained from the ESO (European Southern Observatory) archive, where they were acquired by spectrographs CRIRES and SINFONI. We downloaded these data and we reduced them using programs Gasgano and EsoRex. Reduction cascade of the infrared data is thoroughly described in one of the chapters in this thesis. We also observed one data set of the star WR 105 at Ondřejov observatory and we reduced these data with IRAF. Finally, we carried out the identification of lines in the spectra and we interpreted their meanings, which helped, for example, in reclassification of some investigated stars.

Ján

A common problem when analysing data from thermal desorption of thin layers, is the determination of the activation energy of observed reactions. Common methods, like the Redhead method, are known for their imprecise results caused by diffusion. Diffusion changes the width of desorption peaks, which often leads to strong inaccuracies. However, our computational model has shown that the diffusion coefficient, and the depth from which the gas comes, leave unique signatures in the peaks' shapes. Making use of these properties, we have developed software capable of fitting experimental data into the model. The results showed up to be considerably more precise than the results of common methods. In most cases, the results of fitting turned out to be within the expected range, which was rarely true when using traditional methods. We believe that this novel method we have developed is a powerful new tool for computing the activation energy of chemical reactions and can replace the methods currently used to produce more accurate results.

Veronika

Abstract

Characterization of HGF/Met signaling pathway in osteosarcoma cell lines, specifically reference cell line Saos-2 and five osteosarcoma cell lines derived from patients. The expression of *Met* and *HGF* was determined by RT-PCR in all the lines derived from osteosarcoma patients. Using the techniques of Western blotting and protein array, we analyzed phosphorylation profile of MAPK and serine/threonine kinases and other proteins that could be involved in the HGF/Met signaling pathway in osteosarcoma cells. We also applied two inhibitors (Crizotinib, Tivantinib) and monitored their effect on activation of HGF/Met signaling pathway in osteosarcoma. The influence of these inhibitors on proliferation and cell viability was analyzed by the MTT assay. The effect of inhibitors on the cytoplasmic microtubules was analyzed using indirect immunofluorescence.

Based on achieved results, we concluded that the activation of the HGF/Met signaling pathway in osteosarcoma cells leads to activation of the MAPK and serine/threonine kinases, especially Erk2 and Akt2. Another conclusion is that Crizotinib is potentially applicable as a specific inhibitor of Met receptor activation in osteosarcoma. However Tivantinib has only limited influence on the activation of the Met receptor and causes depolymerization of microtubules in osteosarcoma cells.

Keywords

hepatocyte growth factor, HGF, Met receptor, osteosarcoma, inhibitor, Crizotinib, Tivantinib

Abstract – diploma thesis (unpublished, modified and written only for purpose of this homework)

BACKGROUND: Excessive bodyweight or unfavourable body composition is a growing health problem world-wide. Recently it has been assumed that chronically low energy intake under value of BMR (basal metabolic rate), low intake of particular macronutrients, accompanied by short periods of overeating, lack of physical activity and other factors, could be associated with unfavourable bodyweight and body composition.

METHODS: A sample of 200 students (100 males, 100 females) was recruited. Basal metabolic rate was measured by indirect calorimetry early in the morning, after 12 hours of fasting. Body composition, including fat-free mass, fat mass and visceral fat was calculated with a BIA body composition analyzer. Daily energy and macronutrient intake were measured using a 3-day weighed food record. The Nonparametric Mann-Whitney U test was performed to test possible differences between a group of students with intake of energy under and above BMR. The Spearman correlation coefficient was used to test possible associations between nutrition, BMR and body composition.

RESULTS: The group of females eating energy under BMR had significantly higher body fat-percentage ($p=0,01$) and higher amount of visceral fat ($p=0,001$) compared with those above BMR. There was a strong inverse correlation between body fat percentage and intake of protein ($r_s=-0,357$, $p=0,005$) for the whole sample. There was a strong positive correlation between fat free mass and intake of protein for the whole group of males ($r_s= 0,751$, $p=0,001$).

CONCLUSIONS: These results indicate that chronically low intake of energy could be associated with unfavourable body composition. On the contrary, intake of protein is associated both with body fat percentage and fat free mass. Thus, medical authorities should emphasize proper nutrition as a main determinant of favourable body composition.

Jan

The Myth of Jan Hus as a Result of Modern Social Imaginary

The article builds on the concept of social imaginaries in order to analyze discourses on the Czech martyr Jan Hus, whose death was commemorated in 2015 during the 600 year anniversary after he was burned at the stake in the city of Constance. The dilemma tackled by the text is a transformation of meaning within various socio-cultural contexts and spatio-temporal dimensions, including the related ambiguities and paradoxes. Drawing on the modern imaginary signification of rational mastery, social actors implicitly presuppose that two temporarily separated periods are also qualitatively distinct: the 'modern' era is referred to as progressive and rational, while the previous era, labelled as 'pre-modern', is implicitly outdated and devalued. Nevertheless, the actual entanglement of modern and pre-modern social imaginaries shows that such a hierarchy only serves to conceal that there is a considerable volume of meaningful phenomena that cannot be grasped by rational inquiry. The surplus of meaning, which is undefined, yet already part of our experience, is an ever-growing outcome of meaning-making processes related to the figure of Jan Hus. The more people try to find the 'truthful' and 'real' version of Hus' story, the more it becomes blurred and multifaceted. Consequently, the extraordinary power and persistence with which Jan Hus resonates in numerous discourses is caused by the never-ending struggle to fulfill what his interpreters believe are the possibilities of modern knowledge.

Teachers as initiators of immigrant parents' involvement at schools: Czech and Norwegian context

Abstract: Parents are considered an important part of the school reality. Immigrant children usually have more difficulties with adapting to the major school system. That is why immigrant parents' involvement at school is even more important. The aim of the study was to examine how Czech and Norwegian teachers try to involve immigrant parents to school. A comparative case study within the qualitative approach was chosen as a research method for this study. Analyses of national, local and school strategic documents and in-depth interviews with ten Czech and ten Norwegian teachers were used as a technique for data collection. Two regular schools with significant amounts of immigrant children were studied in both contexts. Presented findings show that knowledge of major language is important in communication with immigrant parents from the teachers' point of view. Both Czech and Norwegian teachers have agreed on the importance of immigrant parents' involvement at school. Czech teachers have a tendency to give up on communication with immigrant parents when they don't succeed for the very first time. On the contrary, Norwegian teachers try repeatedly. An important feature could be that there are strategic documents for teachers how to involve parents to school. There is no such elaborate document in the Czech context. This article presents further ways of how teachers in both contexts try to involve immigrant parents to schools and discuss whether they feel successful.

The EU's Migration Crisis and its effects on Social Work with Migrants in the Czech Republic

The presented paper aims to discuss effects of the EU's migration crisis on social work with migrants. Author's goal is to understand how social workers construct their practice in the age of migration crisis and how these constructions effect their actions in the system of migrant integration. An understanding of these constructions and practices could uncover serious organizational and ideological problems in the Czech system of migrant integration.

The Czech Republic is affected by the EU's migration crisis fractionally (CSO 2017). It is predominantly known that the Czech Republic has one of the most closed migrant policies of the EU member states (MIPEX 2015). The Czech integration regime is highly closed in a similar way (Papadopoulos 2011). Migrants don't flow to the Czech Republic by hundreds and thousands. Nevertheless, Czech society is mainly influenced by various discourses which construct miscellaneous effects of migration crisis and shape actions of diverse inhabitants' groups. These dynamics reconstitute public interest (particularly political and media interest). Agencies whose mission is to support integration of migrants to Czech society attract public concern. Increased political and media interest cause pressure on the agencies and their specialized workers in the daily direct work with migrants. Social workers are an important part of these professionals. After the outbreak of the EU's migration crisis, social work with migrants is under rising public, political and media pressure in the Czech Republic.

The presented paper focuses on answering the question *“How social workers construct their practice with migrants in the age of migration crisis in the Czech Republic?”*

The nature of research question determines research strategy. The strategy of understanding known as a qualitative research was chosen. A combination of critical discourse psychology (Wetherell 1998, Edley 2001, Willing 2013) and Foucauldian research (Parker 1992, Gill 2000, Willing 2013) became a research method which uses interpretative repertoires, discourses and subject positions as basic analytical tools. Interpretative repertoires are flexible discursive resources. During social interactions, particular actors achieve their current communicative goals via those discursive recourses. Discourses are more constant than interpretative repertoires. According to Parker (1992) we understand discourse as a system of statements which construct an object and array of subject positions. Davies and Harré (1990) describe subject position as one position in the discourse. Within social interactions the person reflexively locates himself and others to the constructed reality. Every subject position “incorporates both a conceptual repertoire and a location for persons within the structure of rights for those that use that repertoire. Once having taken up a particular position as one's own, a person inevitably sees the world from the vantage point of that position and in terms of the particular images, metaphors, story lines and concepts which are made relevant within the particular discursive practice in which they are positioned” (Davies and Harré, 1990:46). Edley (2001) points out that subject positions can be defined as a location within a conversation.

According to the research question and the chosen method we are going to:

- Search for the different ways in which the “work with migrants” is constructed.

- Locate the various discursive constructions of the “work with migrants” within wider discourses.
- Gain clearer understanding of what the various constructions of the “work with migrants” are capable of achieving.
- Seek which subject positions constructions of the “work with migrants” offer.
- Map the possibilities for action contained within the discursive constructions identified in the data.

The presented study is based on data collected from interaction with 18 participants, who are all social workers. Data collection tools included in-depth interviews, double interviews and focus groups. A total of more than 20 hours of audio recordings were collected. In compliance with discourse analysis convention, gathered data were transcribed in accordance with rules of conversational analysis. Software Atlas.ti was utilized for data management.

Although currently we are in the process of analysing, we could define some tentative constructions of social workers (with certain simplification of course):

- Social work with migrants endangers social workers and their families.
- Processes and results of decision making in the public administration is more influenced by ethnicity of migrants.
- Ethnicity of migrants becomes a relevant obstacle of collaboration between social workers and other actors in the system of migrant integration.
- Willingness to interpret rules (professional discretion) to migrants’ profit decrease.

Part of the discussion in the thesis;

Myeloproliferative Neoplasms from Immunological Viewpoint

Myeloproliferative neoplasms are three chronic BCR/ABL-negative hematological diseases with a clonal proliferation character on the level of one or more of the hematopoietic cellular components of the bone marrow. This character gathers them in a group called myeloproliferative neoplasm (MPNs) which includes essential thrombocythemia (ET), polycythemia vera (PV), and primary myelofibrosis (PMF). From a genetic perspective—and since 2005—a great breakthrough was made by identification of the JAK2V617F mutation in almost all patients with PV. Later genetic mutations were also presented to be held by MPNs patients which are CALR and MPL. Respective frequencies of these mutations are approximately 95%, 0%, and 0% in PV, 60%, 20%, and 3% in ET, and 60%, 25%, and 7% in PMF.

The main common morphological characters of the marrow in MPN patients are represented as hypercellularity, megakaryocyte proliferation, and fibrosis with variable enlarged spleen as a systemic character.

The main problem with MPNs despite the fact of their low-incidence, is the big changes of quality of life and mortality of the patients, the threats come from the dangerous cardiovascular complications and thrombosis. Based on these facts the global interest is shifted nowadays toward identifying and proving of the complete treatment, in order to reach full cure or at least minimizing the risk and the complications.

The perspectives of the MPNs as “A Human Inflammation Model for Cancer Development” being driven by chronic inflammation in a self-perpetuating vicious circle from early cancer stage ET/PV to the advanced “metastatic” stage with severe MF and egress of CD34+ cells from bone marrow niches to the circulation (metastasis to the spleen and liver and elsewhere) are several as shown above, and this sets a big treatment challenge where the traditional “watch-and-wait” strategy should be replaced by “the early intervention” concept. The new treatment is based on interferon-alpha2 (INF), which has the ability to induce deep molecular response with normalization of the bone marrow also can be used as treatment JAK2V617 inhibitors which can induce partial changes in JAK2V617 gene and revert cytogenetic, the novel usage of statins is due to the proved (anti-proliferation, anti-angiogenic, proapoptotic, anti-coagulant, and anti-inflammation) effect, by concerted efforts the way is reopened to the patient to restore the normal quality of life and improve the prognosis.

The conclusion section of a prepared article follows.

Scheer (2012) divides the Polish $e \sim \emptyset$ alternations into the two types: lexically-based and epenthetic. The former occur in the PATTERN B roots as \sqrt{zeber} : *zeber* (GenPI) vs. *zeberko* (DIM). The latter occur in the PATTERN A roots as \sqrt{form} : *form* (GenPI) vs. *foremka* (DIM). The GenPI structure is decisive: it shows whether a root contains the vowel /e/ lexically or not. As the PATTERN A roots do not contain /e/ in the GenPI, they should not have one in the DIM structure, either. However, the opposite is true. Scheer (2012) concludes that /e/ of the PATTERN A DIM structures is of the epenthetic nature.

In § 3, I argue that epenthesis is not a phonological operation. There are two reasons for that. As every grammar module, the phonology is deterministic and cannot provide evaluative statements about itself. If no evaluation is present, the statement ‘ill-formed representation’ cannot be done and, thus, there is no need to repair something. Epenthesis is also a more complex process than the default phonological operations as GOV, LIC and association. It uses association as its own operation and supplement it with melody insertion. Different ontological status of association and insertion implies that epenthesis is not a computational process. On the basis of Scheer’s (2014) theory of the post-phonological Spell-Out, I claim that the repair techniques as epenthesis and elision are epiphenomena of lexical insertion. At the phonology-phonetics interface, there is a lexicon which exchanges the phonological structures with the phonetic material. GOV and LIC must be present in the lexical records as well as association, since all three operations are of the same kind – they are relationships. Communication between a module and an interface lexicon is governed by a principle that I call Spell-Out Isomorphism: (a) every module communicates with its lexicon in the same way, (b) every lexicon stores the records in the same way. I also argue that the (a) property stands on the Elsewhere Principle (Kiparsky 1973; Neeleman & Szendrői 2007). The empty nuclei which are governed are exchanged with phonetic zero. The empty nuclei which are not governed are exchanged with [ɛ]. No special operations as epenthesis or elision are needed anymore.

In § 4, I claim that if Spell-Out Isomorphism Hypothesis is correct, then its (b)-property serves as a referee for the morphosyntactic theories: it prefers the phrase Spell-Out theories to the head Spell-Out ones.