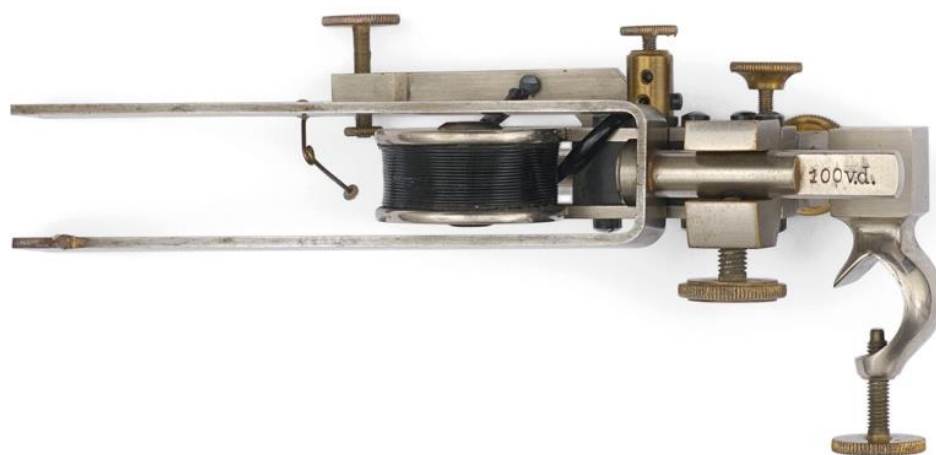


XXVIII SCIENTIFIC CONFERENCE

EMPIRICAL STUDIES IN PSYCHOLOGY

31st MARCH – 3rd APRIL, 2022.

FACULTY OF PHILOSOPHY, UNIVERSITY OF BELGRADE



INSTITUTE OF PSYCHOLOGY
LABORATORY FOR EXPERIMENTAL PSYCHOLOGY
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XXVIII SCIENTIFIC CONFERENCE

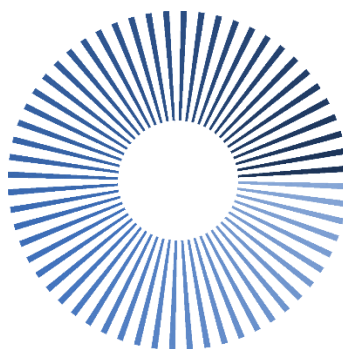
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BELGRADE, 2022

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From the collection of old scientific instruments of the Laboratory of experimental psychology, Faculty of philosophy, University of Belgrade

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KEYNOTE LECTURES

WHAT CAN THE STUDY OF EMOJIS REVEAL ABOUT THE LANGUAGE USER?

Dr. Laurie Feldman

University at Albany, State University of New York

Emojis are popular in online written communication and their evolution attests to some ways in which human communication has been altered by technology. I will describe two lines of research, one that analyzes patterns of eye movement and a second with online tweets. Both focus on written text and how it is altered by the presence versus the absence of emojis. Results inform psychological models of how we use language -both verbal and nonverbal- to read and to express our social selves.

THE CATALAN EARLY CHILDHOOD INTERVENTION JOURNEY TO FAMILY CENTERED PRACTICES: WHAT HAVE WE LEARNED?

Dr. Joana Maria Mas

School of Psychology, Education and Sport Sciences, Blanquerna, Barcelona

Starting from the CREATE model for zones of exclusion (Lewin, 2007), Dr. Tramonte will present the journey of research and data design to track progresses with the Goals of the Sustainable Development. From the design of a framework focused on children's life course to the re-analysis of existing data and the creation of new ones, she will discuss the assessment and the experience of PISA for Development. Why and how do we break apart from the concept of SES; why focusing on social vulnerability to identify patterns of school dropout or poor achievement? In a final example, she will show how principals of a framework of educational prosperity can be visualized with GIS using public data.

INVITED LECTURES

THE EFFECTS OF THE COVID-19 PANDEMIC ON CHILDREN AND YOUTH – A
DEVELOPMENTAL PERSPECTIVE ON ASPIRATIONS, OPTIMISM, RESILIENCE
AND VULNERABILITY

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The COVID-19 pandemic represents the greatest global disruption in recent history, affecting education and the personal and social development of over 1.6 billion pupils at various educational levels worldwide. In response to this disruption, most educational systems introduced some form of remote teaching and learning in an aim to ensure the continuation of the educational process. The negative effects of the pandemic on educational processes were manifested in significant learning gaps and disruptions in pupils' educational and career aspirations. Furthermore, the pandemic intensified already present inequalities between and within education systems. Evidence indicates that the education systems of low and lower-middle income countries experienced a greater impact. In all systems, opportunities and the quantity and quality of learning experiences for those at risk or with special education needs were significantly altered or disappeared altogether. However, the responses of educational authorities and practitioners also resulted in many positive elements by opening a space for innovation and creativity within the formal educational context. Furthermore, the situation revealed a certain flexibility in educational structures, a feature not often associated with such robust and inert systems.

The introduction of remote schooling represented a unique historical situation in which primary and secondary education cohorts experienced non-classroom or hybrid teaching and learning for an extended period of time. Changes to everyday lives and education have also had an impact on various developmental areas for children and youth. As such, it is of crucial importance to scientifically explore pupils' perspectives on the various ways in which the pandemic affected personal, social and educational spheres. In this lecture, the results from two large-scale research efforts in Croatia will be presented. The first is a longitudinal cohort study that followed more than 1000 pupils from Zagreb in their journey from the 4th grade of primary school to the end of lower secondary education. Latent curve growth modelling is used to present developmental changes in pupils' perspectives on optimism, trust and self-efficacy and includes an examination of the effects of the pandemic that has marked the last two years of their education. The second research effort is a large-scale mixed-model study conducted with 27 000 pupils from five cohorts that examines the ways the pandemic and related educational changes affected pupils' life satisfaction, learning, resilience and vulnerability. Special emphasis in the lecture will be given to the effects of the pandemic on pupils with special needs, gifted pupils and those coming from lower socio-economic backgrounds.

Keywords: COVID-19 pandemic, children and youth, educational context

THE USE OF TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) IN THE RESEARCH OF COGNITIVE FUNCTIONS

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Transcranial electric stimulation (tES) is a set of noninvasive brain stimulation techniques that uses weak electric currents, usually between 1 and 2mA, to promote cognitive and sensorimotor functions. The most utilized among these techniques is transcranial direct current stimulation (tDCS) which modulates neuronal excitability using anodal (positive) or cathodal (negative) stimulation and achieves its effects through depolarization or hyperpolarization of the resting membrane potential. This technique showed promise for noninvasive neuromodulation of a variety of cognitive functions. The brain regions of interest when studying cognitive functions are usually the dorsolateral prefrontal cortex (DLPFC) and posterior parietal cortex (PPC) as central stimulation-available nodes of widely distributed frontoparietal neural network. The lecture will cover different types of tES and their differential modes of action, a brief overview of the state-of-the-art in the field, with special attention to behavioral effects of tDCS applied over different brain loci within the frontoparietal neural network. The focus will be on the results of a series of experiments conducted in our lab that address the effectiveness of tDCS in the modulation of associative memory, executive functions, and higher cognitive functions such as broad visual processing and reasoning. The results will be discussed in the context of reliability and specificity of effects and inconsistent findings often reported in the literature. Furthermore, I will discuss to which degree experimental tDCS studies can address the question of localization of cognitive functions and if the modulation of the shared neural basis of different cognitive functions and abilities can reflect their psychometric relations. Finally, the limitations and the need for further development of tES techniques will be outlined.

Keywords: transcranial direct current stimulation (tDCS); noninvasive brain stimulation (NIBS); cognitive functions; associative memory; executive functions; cognitive abilities

SYMPOSIA

**SYMPOSIUM I:
PUBLIC PERCEPTIONS OF SCIENCE AND SCIENTISTS**

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Even though public trust in science in general is relatively high, when it comes to specific, contended scientific topics, the mismatch between the scientific consensus and public opinion can be substantial. This can have severe societal consequences, for example when spilling over into lack of public support for action in the case of climate change and hesitancy and refusal in the case of vaccination. Furthermore, as the COVID-19 pandemic further highlighted, citizens across the world have trouble navigating the complex environment of science-related information and discerning unsubstantiated as opposed to trustworthy advice and guidelines. It is therefore imperative to gain detailed and contextualised insights into public perceptions and understanding of science. As such, this symposium will discuss the rejection of contested scientific domains across the world and the role that a novel construct, i.e., psychological distance to science, plays in it. We will then discuss scientific and digital literacy as contributors to fake news discernment in the Serbian context. Next, the symposium will cover the role of personal narratives in science communication surrounding vaccination. Furthermore, we will examine scientist stereotypes and their influence on trust in science. Finally, we will conclude with considerations of scientism (i.e., the stance that science can discover absolute truths, solve all problems of humankind as well as moral questions). Our presentations cover both local (i.e. Serbian) and international contexts, taking into account the variability of science perceptions across national and cultural contexts.

SCIENCE REJECTION ACROSS COUNTRIES

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Andre Rabelo

Universidade de Brasilia

Robbie M. Sutton

University of Kent

What makes people skeptical about science? Recent work on the ideological antecedents of the systematic rejection of science points to its heterogeneous nature. But these efforts are impeded by lack of insight into how science rejection varies in degree and in kind around the world. The current work utilised a cross-national survey to investigate science rejection in 24 countries (N = 5,973), focusing on the domains of climate science, vaccination, genetic modification of foods, and evolution. Results of multilevel regression analyses show that

while some countries stand out as generally high or low in rejection of science, predictors of science rejection are relatively similar across countries. One notable effect was consistent across countries though stronger in Western, Educated, Industrialized, Rich, and Democratic (WEIRD) nations: General faith in science was predicted by spirituality ($b = -.24, p < .001$), suggesting that it, more than religiosity, may be the ‘enemy’ of science acceptance. Climate change skepticism was mainly associated with political conservatism ($b = .13, p < .001$), especially in North America ($b = .38, p < .001$). Other findings were observed across WEIRD and non-WEIRD nations: Vaccine skepticism was associated with spirituality ($b = .06, p < .001$) and scientific literacy ($b = -.11, p < .001$), genetic modification skepticism with scientific literacy ($b = -.21, p < .001$), and evolution skepticism with religious orthodoxy ($b = .34, p < .001$). We conclude that levels of science rejection are heterogeneous across countries, but predictors of science rejection are heterogeneous across domains.

Keywords: science rejection, spirituality, ideology

PSYCHOLOGICAL DISTANCE TO SCIENCE AS A PREDICTOR OF SCIENCE SKEPTICISM ACROSS DOMAINS

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Previous work on science skepticism has mostly focused on identifying its ideological or knowledge-related correlates. This work has pointed to the heterogeneous nature of science skepticism but has done so in a mostly descriptive manner. In an attempt to provide a more unifying framework for studying science skepticism, we introduce and test a novel construct—psychological distance to science (PSYDISC). Drawing on the concept of psychological distance, PSYDISC argues that the extent to which individuals perceive science as relevant for their lives (social distance) in the here (spatial distance) and now (temporal distance), and as accurate and applicable in the real world (hypothetical distance), predicts their science skepticism across domains. Across five studies (total $N = 1,279$) in two countries (UK and US), we developed and tested a scale measuring PSYDISC. As shown through EFA (Study 1) and CFA (Studies 2 & 3), the final 16-item scale had the expected structure—four correlated factors reflecting four distance dimensions. The scale also demonstrated good construct validity, as it correlated—as expected—with science knowledge and understanding, attitudes, and interest in scientific topics. Crucially, PSYDISC predicted skepticism over and above previously established predictors (e.g., political ideology, religiosity, science literacy), in all tested scientific domains (e.g., climate change, vaccination), demonstrating excellent predictive validity, ranging from 4% ($p = .005$; GM foods, Study 2) to 13% ($p < .001$; vaccination, Study 2) of additional explained variance. Hypothetical distance consistently predicted skepticism in all tested domains, while the other three distance dimensions varied in their predictive power.

More specifically, temporal distance predicted higher climate change and evolution skepticism, while social distance predicted higher GM foods and genetic editing skepticism. Finally, Study 4 showed that PSYDISC also shapes real-world behavior—hypothetical distance predicted a lower chance of being fully vaccinated against COVID-19 ($OR = -.62, p = .004$). These studies provide robust evidence for the reliability, construct and predictive validity of PSYDISC, which will help to further develop a unifying framework to understand science skepticism across domains.

Keywords: science skepticism, psychological distance, construal level theory, psychological distance to science, scale construction

SCIENTIFIC AND DIGITAL LITERACY AS PROTECTIVE FACTORS TO
MISINFORMATION SUSCEPTIBILITY AND VACCINE UPTAKE: EVIDENCE FROM A
NATIONALLY REPRESENTATIVE SAMPLE

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Scientific and digital literacy are two similar, but distinct constructs that should enable people to navigate the informational environment. Whilst scientific literacy is often defined as a grasp of elementary scientific facts, digital literacy is a set of habits regarding information consumption (e.g. checking the reliability of sources, triangulating the information). These two important skills should have a protective role when it comes to a. misinformation susceptibility, i.e. discerning factual from false information and to b. making informed health decisions. In this study, we firstly examined the prevalence of scientific literacy, digital literacy and misinformation detection ability on a probability sample nationally representative of Serbia ($N = 1006$). Second, we mapped out how these skills relate to each other and finally, how this skill set contributes to COVID-19 vaccination status. To this end, the participants completed the Civic Scientific and the Digital literacy scales, as well as the Misinformation Susceptibility test. We found that on average, the participants answered correctly on two thirds ($M = 7.99$ ($SD = 1.91$) out of 12) of the scientific literacy questions. As for digital literacy, an average of 51% of participants indicated that they rarely or never evaluate the information they consume online. Furthermore, the participants correctly identified, on average, a total of $M = 4.01$ ($SD = 1.62$) out of 8 pieces of news as either true or false. To test the interrelations of these constructs, we ran a regression with two types of literacy as predictors and misinformation detection as the outcome. The model was significant ($F(2, 765) = 15.55, p < .001, R_{adj}^2 = .04$), with both scientific ($\beta = .138, t(764) = 3.807, p < .001$) and digital ($\beta = .113, t(764) = 3.113, p = .002$) literacy contributing to its prediction in the expected direction. We further tested a model with

misinformation detection, digital and scientific literacy as predictors and COVID-19 vaccination status as the outcome ($F(3, 736) = 22.91, p < .001, R_{adj}^2 = .08$). The only significant predictor in the model was misinformation detection ability ($\beta = .290, t(735) = 8.065, p < .001$), which was related to higher vaccine uptake. Overall, the levels of scientific literacy we observed are comparable to levels previously reported for EU countries. The results suggest that information appraisal skills are more important than basic scientific knowledge in guiding health decision making.

Keywords: scientific literacy, misinformation susceptibility, digital literacy, media literacy, vaccination uptake

COMBINING SCIENTIFIC FACTS WITH PERSONAL STORIES LEADS TO MORE PERSUASIVE VACCINATION COMMUNICATION: A PRELIMINARY SYSTEMATIC REVIEW

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A popular approach to health communication is the deficit model, which emphasizes the repetition of objective scientific evidence to motivate people to change their beliefs and behaviors. Increasingly, however, health communicators are turning to narratives or the stories people tell. Narratives can be persuasive by fostering engagement with the story and its characters and by provoking an emotional response. Focusing on the domain of vaccination, we conducted a preliminary systematic review to explore how narrative communication compares to factual communication and whether it can influence vaccination outcomes. We identified primary studies through previous systematic reviews and meta-analyses. We additionally searched PubMed, Cochrane Library, Web of Science, and Google Scholar for articles published 2015–2019, with terms such as “story”, “anecdote” or “immunization” in the title. We included experimental designs contrasting a pro-vaccine narrative to (a) a control/baseline condition and/or (b) facts-only and statistics-only (including risk) messages. We also included designs testing combined narrative and factual/statistical messages. The review included 17 eligible articles published 2005–2019. The studies were predominantly conducted in the US and concerned the human papillomavirus vaccine (11 articles, respectively). All narrative interventions featured a personal-experience story. We extracted 97 comparisons (k) of intervention groups and contrast groups. The most studied outcomes were vaccination intentions (k = 37), perceived disease risk (k = 18), and general vaccination attitudes and beliefs (k = 15). Compared to control/baseline, narrative-only messages tended to positively affect vaccination outcomes (k = 19/32), rarely backfiring (k = 4/32). Half of the time, narrative-only outperformed facts-/statistics-only messages (k = 23/45), while facts-/statistics-only messages were better in 14/45 instances. Combined interventions were better than the control/baseline (k = 8/8), statistics-only (k = 6/9), and narrative-only messages (k = 2/3). We conclude that a promising strategy in vaccination communication is combining scientific facts with personal stories tailored to the audience's sociocultural characteristics. We give recommendations for public communicators and directions for future research (e.g. larger samples for more precise effect size estimates, tackling conspiracy beliefs, and assessing effectiveness of interventions after a delay).

Keywords: science communication, health communication, narrative persuasion, vaccination, systematic review

SCRUTINIZING STEREOTYPES ABOUT SCIENTISTS: SOCIAL EVALUATIONS OF SCIENTISTS AND THEIR IMPACT ON PROTOTYPICALITY AND TRUST

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Science and scientists are among the key drivers of societal changes. While research has demonstrated that, in the public view, science is heterogeneous, work on perceptions of scientists usually considers “scientists” as members of a homogeneous group. In the present research, we went beyond the general term and investigated differences in social evaluations of different types of scientists, and how these contribute to perceptions of prototypicality and trust. In Study 1a ($N = 300$, UK sample), we wanted to obtain a list of best-known scientific occupations. We asked participants to list all scientific occupations that come to their mind in five minutes. After cleaning the list (e.g., removing non-scientific occupations), we ended up with 34 scientific occupations. The most mentioned occupations were chemist, biologist, and physicist. In Study 1b ($N = 411$, UK sample), participants rated occupations from Study 1a on social evaluation dimensions (competence, sociability, morality) and on prototypicality, i.e. how good example of a scientist is a member of a given occupation. All scientific occupations were seen as highly competent, relatively moral, but only moderately sociable. However, we also found differences in levels of social evaluations, which can be captured in clusters of scientific occupations. Perceived prototypicality was based on competence ratings ($t(29) = 5.015$, $p < .001$), meaning that, in the public’s view, to be a scientist means to be competent (intelligent, smart). Study 2 served as replication with the US sample, with the addition of trust in scientists. Study 2a ($N = 303$) returned an almost identical list as Study 1a, containing 35 occupations. In Study 2b ($N = 427$), participants rated scientific occupations on social dimensions and prototypicality (as in Study 1b), as well as on trust. Findings replicated Study 1b: similar clusters were corroborated, while perceived prototypicality was again based only on perceptions of competence ($t(30) = 5.824$, $p < .001$). Trust was higher for those occupations that were perceived as more competent and moral ($ts(32) > 3.290$, $ps < .01$). Overall, we demonstrate the importance of distinguishing between different types of scientists, and why studies should be careful about which occupations they take as prototypical of scientists. Finally, we bring new insights about one of the most challenging issues of today—trust in scientists, and how our findings relate to previously established models of trust.

Keywords: stereotypes of scientists; scientist perceptions; stereotypes; trust in scientists; science trust

WHEN TRUST IN SCIENCE IS UNCRITICAL: CONCEPTUAL AND METHODOLOGICAL CHALLENGES IN RESEARCHING SCIENTISTIC BELIEFS

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The contemporary society actively works towards strengthening scientific literacy and trust in science. One of the goals of science education, however, should also be to develop an understanding of the limits of scientific knowledge so as not to endorse another extreme called scientism - a philosophical position arguing that science can discover absolute truths, solve all problems of humankind as well as moral questions. In comparison to the amount of research devoted to scientific skepticism, scientism is a severely under-researched topic. The existing inventories measuring this construct contain typical scientistic claims with a Likert-type scale attached, which have several drawbacks, especially regarding the interpretation of the extreme scores. Specifically, which cut-off score should be a threshold for scientism, and whether the lower scores indicate just an absence of scientistic beliefs or an anti-scientific attitude. Thus, we opted for a different approach. We started by mapping broad indicators of scientism: a. belief that science is ontologically undisputed (phenomena do not exist without scientific proof); b. belief that science is epistemologically undisputed (only science has tools to understand the world or solve the problems of humankind); c. belief the status of science is undisputed (science is always benevolent, it is beyond the moral evaluation or critique). Drawing from these indicators, we specified 14 topics - e.g. "Possibility of science to discover truths" and derived five claims arranged from 1 - scientistic to 5 - anti-scientific; mid-values expressed moderate attitude towards science. The questionnaire went through a four-stage evaluation process. First, an expert group of five psychologists gave their independent feedback on the way claims were worded. Next, we asked ten philosophers of science to verify the claims corresponded to their theoretically proposed positions along the scale (scientistic, moderate, anti-scientific). Third, ten independent raters assessed the intensity of each claim: their ratings showed claims did not overlap, and they covered the continuum from extremely scientistic to extremely anti-scientific. Finally, we conducted extensive cognitive interviews with ten lay people without a scientific background to make sure they understand the claims in an intended way. Taken together, the results support the conceptual validity of the scale and provide preliminary evidence of its good psychometric properties.

Keywords: scientism, trust in science, questionnaire, validity

SYMPOSIUM II: INVITED LECTURES

TEACHERS IN FOCUS – FROM IDENTITIES TO PRACTICES

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Teachers are one of the most relevant school related factors that contribute to students' achievement. They are typically considered agents of change in educational systems and therefore required to constantly innovate their practice, particularly in areas of inclusive education and usage of digital technologies. However, in many countries there is a gap between these requirements and status of the teaching profession and many systems are facing "negative" selection and teacher shortages. Therefore, if we want to improve educational systems there remains the need to understand pre-service and in-service teachers' beliefs, motivation, values and practices. This symposium strives to answer the core questions about teachers, such as their motivation for the teaching profession, professional identities and values, as well as to discuss teachers' experience with digital tools – in the contexts of their own professional inquiry and work with children with disabilities. Five papers within the symposium, although applying different methodologies and relying on different theoretical models, have the joint aim to contribute to well established psychological and pedagogical theories and models and to provide recommendations for the improvement of educational practice.

MOTIVATION FOR A TEACHING PROFESSION AMONG PRESERVICE SUBJECT TEACHERS

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In times of teacher shortages and high attrition rates it is relevant to explore preservice teachers' motivation for this profession. This study employed qualitative methodology to explore reasons for choosing the teaching profession, as well as reasons that dissuade students from choosing it. Participants were 221 undergraduate students from Serbian faculties that educate future subject teachers (110 in STEM and 121 in the fields of Social science and Humanities). They filled in an extensive questionnaire, but for this paper answers on two open-ended questions were analyzed – on reasons for being motivated (221 answers) and on reasons for being demotivated (45 answers). Thematic analysis and deductive approach that relied on the Factors Influencing Teaching Choice (FIT-Choice) model were applied. Fifteen themes emerged with 12 corresponding to the FIT-Choice model's factors. The most frequent reasons for choosing a teaching career correspond to the Social utility value motive ($f=160$) and Intrinsic value (62) from the model. There were no answers that referred to Job transferability. One new theme was named Love for subject (38). It might be considered similar to Intrinsic value, but it also implies desire to remain immersed in the discipline one loves. The theme of intellectual stimulation and continuous self-development, not present in the FIT-Choice model also emerged (26). There were six answers that contained the theme of gender (teaching as the perfect career for females), which was not addressed in previous studies, but which contains elements of factors Social influences and Time for family. Among the demotivating factors, eight themes emerged: Low status and

respect ($f = 20$), Lack of abilities (10), Children's behaviour (7), Administrative tasks (7), Routine and monotony (6), Relationship with colleagues (5), No advancement opportunities (2) and Parents' behaviour (2). Most identified demotivating factors correspond to the Job demands factors from the FIT-Choice model, however more attention should be paid on themes of monotony and limited advancement opportunities, and on relationships with parents and colleagues. We can conclude that none of the theories of motivation for the teaching profession embraces all the subtle motivations of preservice teachers. There is a need for improving both the theories and the research instruments, so they involve the love for subject and characteristics of the everyday tasks (creativity and stimulation vs. monotony) and recognize the importance of wider social norms and influences.

Keywords: motivation, demotivating factors, teaching profession, preservice teachers, FIT-Choice

PROFESSIONAL IDENTITY DEVELOPMENT NARRATIVES OF CLASS AND SUBJECT TEACHERS

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This paper examines professional identity development narratives of in-service subject and class teachers in central Serbia. The sample consisted of 72 participants: 35 class teachers and 37 subject teachers (Serbian language and mathematics); 24 beginners with up to 2 years of teaching experience, 24 having 5-15 and 24 having over 25 years of teaching experience; 85% females. Data was obtained by autobiographical oral narrative about how a person became a teacher, how they changed over time and how she/he sees oneself in the near future. Transcripts were made and the main techniques for the analysis were thematic analysis and narrative analysis, using MaxQDA data analysis software (version 10). The results show that while working in school was a desirable professional outcome for beginning class teachers, for the majority of subject teachers working as a school teacher represented a professional outcome they did not strive for. Respondents' narratives about the period after graduation and first employment indicate that the speed and availability differ in class and subject teachers: time period without an employment or short-term replacement employment usually lasts for several years for class teachers and only several months for subject teachers. The prolonged uncertainty due to short-term employment appears as one of the most important topics of the professional identity (PI) of the majority of beginners and middle-experienced class teachers and a small number of beginners subject teachers. On the other hand, teachers that have that relative stability of employment then show the most differentiated PI in a period of 5 to 15 years of working experience, which manifests itself through professional commitment, productivity, enjoyment in work and "expanding" the field of professional influence outside the classroom. Finally, the most experienced teachers with over 25 years of teaching experience construct their PI around positive perceptions of their job and its purpose, but they also stress that their work implies a great responsibility and unfavorable social status of teachers in our country emerges as an important positioning in PI narrative. It can be concluded that even though becoming a teacher was not initially a desirable professional outcome for the majority of class teachers, they develop over time professional identity narratives of committed and proactive teachers, while for class teachers the biggest challenge for professional identity formation is possibility and stability of employment as a full time

teacher. Implications of these findings are explored in relation to relevant empirical data as well as through a theoretical lens of professional identity development.

Keywords: teachers' professional identity, class and subject teachers, narrative positioning

A PERSON-CENTRED PERSPECTIVE ON FUTURE PRESCHOOL AND CLASS TEACHERS' VALUES IN TERMS OF THE SCHWARTZ REFINED VALUE THEORY

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Values as desirable goals function as criteria for our judgements, and decision making. The goal of the study is to find types of the preservice preschool and class teachers, according to their values, through secondary analyses of previously obtained data exploring 19 values of the Schwartz refined theory, applying Portrait Values Questionnaire-57, N = 232. Analyses included a series of K-means cluster analyses (testing 2-5 solutions), ANOVA for mutual comparison of cluster ratings of the 19 values, with Games-Howell post-hoc test, and repeated measures ANOVA for comparing the ratings within each cluster. A four-cluster solution was accepted. Cluster 1 named *Uncritical&Respect-seeking* (12%) tends to rate higher variety of values, with value *Face* standing out (e.g. Mean differences for *Face*: Cluster1-Cluster2 = 2.12, Sig = .000, Cluster2-Cluster3 = 1.24, Sig = .000, Cluster3-Cluster4 = 1.32, Sig = .000.). Cluster 2, *Indifferent* cluster (30%) has generally lower appreciation of values (e.g. Mean Differences for *Self-Direction Action*: Cluster2-Cluster1 = -.842, Sig. = .000, Cluster2-Cluster3 = -.517, Sig. = .032, Cluster2-Cluster4 = -.511, Sig. = .000), Cluster 3, *Self-transcendent* cluster (32%) is socially focused, respecting highly the welfare of others, compliance with norms and smooth functioning in social realm (e.g., for *Universalism Concern* Mean Differences: Cluster 3-Cluster2 = 1.00, Sig. = .000, Cluster3-Cluster4 = .540, Sig. = .001, for *Universalism Tolerance* Cluster3-Cluster2 = .775, Sig. = .001, Cluster3-Cluster4 = .694, Sig. = .000); and *Self-Enhancing* cluster (25%) is distinguished by higher appreciation of *Self-enhancement* values and the wellbeing of close surrounding (Mean Differences: *Power resources* Cluster4-Cluster2 = .672, Sig. = .011, Cluster4-Cluster3 = .779, Sig. = .000, *Achievement* Cluster4-Cluster2 = 1.09, Sig. = .000, Cluster4-Cluster3 = .376, Sig. = .009). Teachers belonging to the Self-transcendent cluster are the closest to the adaptive pole - they can be expected to teach students to value equity, nature and to respect social norms. *Uncritical&Respect-seeking*, are in the middle of the continuum, being at risk of career frustration, since they rate high different types of values, that cannot be achieved at the same time and address importance to the superficial values of recognition, and obtaining power through public image, which could lead to authoritarian style of teaching. *Self-Enhancing* cluster follows, whose members can be interested in their students, but opt for dominance and prefer self-indulging. *Indifferent* cluster is closer to the maladaptive pole, with risk of being unmotivated. The study discusses possible job outcomes, and relates results to the previous studies on teachers' values conducted in Serbia.

Keywords: Schwartz refined theory, teachers, Serbia, cluster analyses

TEACHERS' MOTIVATION AND SKILLS FOR TECHNOLOGY USE IN TEACHER INQUIRIES

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Research indicates that learning and teaching analytics (LTA) provide help for teachers in their pedagogical decision making. What is the situation in reality and do teachers research the impact of their teaching and technology use in their classrooms? The aim of the current study is to explore how Estonian teachers perceive their own technology use and teacher inquiry (TI) practices, and how much this corresponds to reality. Based on **a survey** (scales and open questions) carried out in Estonia in 2021 with 40 school teachers (86% female; 48% with over 20 years of experience, 40% upper-secondary) from different schools, and **three focus group interviews** (1/4 of the survey sample), a preliminary picture of the situation is drawn and compared to the **actual classroom activities of twelve teachers** (ten from the same sample) who participate in the European Erasmus+ project 'Illumine' (2021-2022) and keep records of their technology use and teacher inquiry processes. The initial **survey** reveals that 90% of the participants rate their confidence in technology use as high or fairly high and the same amount also claim to be thinking about their teaching often or all the time. However, when 36 teachers research their own teaching, only half of them have had any experience in conducting TI, a quarter have researched teaching beyond their own personal interest and 8 have shared their results at conferences or seminars. Three 50-minute **focus group** interviews with 10 teachers (from the survey sample) from seven schools reveal that despite some setbacks (things take longer online, student engagement is more difficult) teachers coped with the pandemic-time use of technologies well, though online teaching needed different planning. As to TI, teachers expect some support with it; they find TI extremely time-consuming; and wish that technology could make documenting TI and the whole process simpler. The 12 Estonian teachers (8 schools, 11 females, 2-30 years of experience) who participate in the 'Illumine' project were initially faced with similar issues. Even when the teacher knew what they wanted to learn from the TI, they found it difficult to formulate the inquiry questions (only two out of 12 did this for their first intervention). Also, only four used technologies for data collection (though all used technology for teaching) and six managed to initially interpret the data. So, even teachers who are motivated to use LTA need assistance with TI and technology use in the process.

Key words: teachers' technology use; teacher inquiry; teacher motivation and skills; data use

FACTORS INFLUENCING COLLABORATION IN ASSISTIVE TECHNOLOGY USE IN PRESCHOOL AND SCHOOL INSTITUTIONS: INVOLVEMENT OF EDUCATORS

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C-board is a web Augmentative and Alternative Communication (AAC) application with symbols and text-to-speech intended for persons not able to effectively use speech or writing. Adapted for the Serbian language in 2019 within the project "For every Child: Voice", it is available in open access and is recommended for the promotion of communication, education, and inclusion into regular school of children with complex communication

disabilities. Literature suggests that one of the prerequisites for AAC use in supporting a child's learning and development in different contexts is that it is introduced and implemented through joint efforts and collaborative planning of the child, family, teachers, and other professionals providing support. Starting from the findings of the first evaluation of the implementation of the Serbian version of C-board, an additional formative evaluation was conducted with a focus on implementation in educational institutions, and involvement of educators in the joint partnership for C-board use. This qualitative exploratory study aims to map factors influencing collaboration in C-board use in preschool and school institutions. The data were collected through semi-structured focus group discussions which included a moderator, note-taker, and 6 practitioners working with C-board: special school teachers (n = 2), professional associates in preschool/school institutions (2), and speech therapists (2). Participants discussed viewpoints, barriers, and facilitators regarding the use of C-board, and educators' involvement and experiences in this collaborative partnership. The data were analyzed utilizing inductive content analysis. The research suggests that teaming and collaboration represent one of the major obstacles to developing and providing additional support in educational context in Serbia. The findings reveal that educators' involvement are dependent on several groups of determinants: a. educator related factors (skills and training, motivation), b. AAC related factors (knowledge and expectations on the effectivity of AAC), c. process management and institutional support (support expected from professional associate and/or speech therapist, clear institutional definition of material responsibility for the device), d. parental involvement and attitudes. The absence or weakness of educator's participation is caused by a number of interdependent factors, but clear recommendations can be made for its improvement in order to strengthen the network of support for inclusive education of children with complex communication difficulties.

Keywords: communication difficulties, C-board, Augmentative and Alternative Communication, inclusive education, preschool/school institutions, involvement of educators

ROUND TABLES

NON-INVASIVE NEUROMODULATION AT THE INTERSECTION OF TECHNOLOGY,
PSYCHOLOGY, AND MEDICINE: CURRENT CHALLENGES AND FUTURE
DIRECTIONS

Moderator:

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Non-invasive neuromodulation is an innovative approach in neuroscience that allows for causal investigation of sensorimotor, cognitive, and affective brain functions, and, ultimately, clinical treatment of a wide spectrum of neuropsychiatric conditions. The term refers to a set of techniques aimed at transcranial non-invasive modulation of neural excitability and activity of specific brain areas and inter-connected large-scale brain networks. Typically, physical forces such as magnetic and electric fields, and – more recently – ultrasound and near-infrared light have been used. The most used NIBS techniques are repetitive transcranial magnetic stimulation (rTMS), transcranial direct current stimulation (tDCS), and transcranial alternating current stimulation (tACS). NIBS techniques have become the mainstay of translational human neuroscience research standing at the intersection of technology, psychology, and medicine. From the cognitive neuroscience perspective NIBS is a powerful tool for the causal exploration of cognitive functions. Biomedical engineering and technology allow for better precision and widespread use of NIBS. Medicine, especially neurology, psychiatry, and rehabilitation recognizes NIBS as a cost-effective treatment option, especially in chronic conditions and patients who respond poorly to medication. Despite great progress in recent years, there are still numerous challenges to be tackled before wide practical implementation. The roundtable will be focused on state-of-the-art and current challenges from the perspective of cognitive neuroscience research, technological innovation, and clinical applications, as well as future directions in the field. The roundtable will bring together principal investigators of two projects funded by the Science Fund and recipients of Horizon Europe grant in this field to discuss the perspectives of NIBS research.

Acknowledgement: Science Fund of the Republic of Serbia, PROMIS

THE PROGRAM “IDEAS”: DIRECTION FOR FURTHER
RESEARCH?

Moderator:
Sunčica Zdravković

THE PEER MODEL: A NEW FRAMEWORK FOR PROMOTING COLLABORATIVE
PROBLEM-SOLVING IN YOUNG PEOPLE

PeerSolvers research group¹

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The capacity to engage in constructive peer interaction and collaborative problem-solving (CPS) is one of the core (i.e., soft) skills that young people need to bring to their prospective professional and social environments. Research suggests, however, that this skill does not emerge spontaneously, but needs to be supported and scaffolded as part of the educational process. Thus, the aim of this paper is to present a viable, psychologically based framework to systematically promote adolescents' capacities for CPS. Specifically, a model for designing training programs is proposed, wherein several elements of effective CPS are drawn together and summed up by the acronym PEER. First, the model refers to the role of personality differences (the “P” element) in joint peer activities and highlights the need to teach young people to appreciate and benefit from the participation of different personalities in CPS. The model's second element points to the necessity to introduce adolescents to the rules and values of exchanging ideas in dialogue (the first “E” of the acronym), so as to raise the quality of their interactions and prevent these from turning into persuasion and conflict, or ending in disengagement and withdrawal. Third, the model assumes that—to be able to respect each other's different personalities and follow the rules of constructive dialogue—young people also need to develop their emotional intelligence (the second “E” of the acronym) and socioemotional competencies more generally. Finally, the PEER model proposes that effective CPS also depends on the availability of external resources (the “R” element), such as scaffolding provided by an experienced instructor and digital media. Compiling these four elements, the described model not only provides an original synthesis of available knowledge on the psychological factors contributing to CPS but will serve as the groundwork for developing an evidence-based CPS training program in Project PEERSolvers.

Keywords: PEER model, collaborative problem-solving, dialogue, socio-emotional competencies

Acknowledgment: This research was supported by the Science Fund of the Republic of Serbia, Grant No. 7744729, The PEER model of collaborative problem solving: Developing young people's capacities for constructive interaction and teamwork – PEERSolvers

TESTING AND IMPLEMENTING THE PEER MODEL OF COLLABORATIVE
PROBLEM-SOLVING: PROJECT PEERSOLVERS

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Project PEERSolvers aims at establishing a valid, evidence-based approach to building young people's capacities for collaborative problem-solving (CPS). Specifically, the Project's goal is to design and test an innovative training program based on the PEER model, i.e., targeting four elements of effective CPS: Personality, Exchange in dialogue, Emotional Intelligence, and Resources. In this paper, we outline the methodological framework for achieving this goal. Overall, the Project will employ a mixed-methods approach and include 600 participants. In the first phase, our objective is to develop a PEER model-based training for adolescents based on data about individual and group-level factors of (un)productive peer interaction; personal themes through which these factors appear in CPS; and adolescents' past experiences with and attitudes towards CPS. These data will be collected in two qualitative studies, via individual interviews with participants and observations of their spontaneous behavior during CPS. In the second phase, our objective is to implement the PEER model-based training and test it in two intervention studies. The first study will examine the training's effects on two group-level variables: quality of interaction during CPS; and quality of the solution to the presented real-world (complex) problems. Also, we will use the data from this study to make final adjustments to the PEER model-based training. The second intervention study will test the effects of the final version of the training on two individual-level variables: scientific and civic problem-solving competencies; and participants' subjective experience of CPS. Both intervention studies will use an experimental design with repeated measures (pretest-training-posttest). The experimental group will receive the PEER model-based training and have the opportunity to practice CPS in triads with an experienced instructor providing scaffolding and digital media as resources; the control group will also be engaged in CPS but will not receive any training or scaffolding. The above described implementation of the PEER model should yield major insights into the possibility of developing adolescents' capacities for CPS and using it to promote their individual competencies.

Keywords: PEER model, mixed-methods approach, collaborative problem-solving, intervention study, socio-emotional competencies

Acknowledgment: This research was supported by the Science Fund of the Republic of Serbia (Grant No. 7744729, The PEER model of collaborative problem solving: Developing young people's capacities for constructive interaction and teamwork – PEERSolvers)

REASON4HEALTH: RATIONALE AND IMPACT

Reason4Health research group¹

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Non-adherence to medical recommendations (NAR) leads to increasing mortality/disease rates and raises the costs of treatments, thus it is a burden on the healthcare system. Typically viewed as harmless, the use of traditional/complementary/alternative medicine (TM/CAM) can lead to adverse health events, but also to avoidance of official treatment or undesirable interaction with it. Thus, there is an increasing call in the medical community to promote evidence-based use of TM/CAM and adherence to official advice; understanding why consumers opt for questionable health practices can contribute to this call. We put forward a comprehensive program to study the psychological roots of these two broad categories of questionable health practices. The program offers a framework for concepts from cognitive, personality, social, and health psychology. We propose that an irrational mindset (a system of irrational thinking and beliefs), rooted in basic psychological dispositions (personality, thinking styles) makes certain consumers susceptible to NAR and TM/CAM practices. We plan to: a. explore the media environment the consumers are exposed to (e.g. predatory practices in advertising TM/CAM), b. identify the large spectrum of NAR and TM/CAM typical for the local cultural context, c. test whether irrational beliefs of very different content really form a mindset (how they are interrelated), d. measure the prevalence of NAR and TM/CAM and relate them to irrational mindset and further to personality traits, and e. test whether the TM/CAM proneness can be affected by manipulating irrational beliefs. The results will be useful to stakeholders in different ways: information on the prevalence of TM/CAM and NAR in Serbia is useful by itself, but identifying their underlying psychological mechanisms will help in understanding the most vulnerable portions of the population. In addition, we will provide useful input for designing interventions that will support consumers in making rational health decisions.

Keywords: Health behaviors; Evidence-based health decisions; Adherence to medical recommendations; Traditional/Complementary medicine; Irrational mindset; Individual differences in personality/thinking styles

REASON4HEALTH: METHODOLOGY

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The main project methodology is planned in five stages that inform one another and cross-validate data from multiple methods. These include: (1) A study documenting online media coverage of TM/CAM practices in Serbia. This study will use a qualitative methodology, and conduct a content analysis of news stories from the five most popular news websites in Serbia, focusing on identifying the types of reported practices and content of the advice (e.g., whether risks are addressed) (2) Development of instruments for assessing familiarity and frequency of two types of health behaviors: engagement with different TM/CAM practices, as well as the frequency of NAR. Instrument development will be based on the results of the qualitative study, literature review, input from medical and CAM practitioners. The instrument will be piloted on a convenience sample (3) A study tracking the prevalence and the pattern of TM/CAM usage and NAR during 3 weeks on a community sample. This study will consist of a development of a mobile app and battery for experience sampling of TM/CAM and NAR behaviors over 21 days and their relations with personality and cognitive styles in a community sample (4) Examining the relations between these two types of health behaviors on a general population. This study will explore the relations between TM/CAM, NAR, personality, and cognitive styles on a representative sample in Serbia. (5) Developing interventions aimed at reducing TM/CAM use and NAR through changing the irrational mindset. This study will be experimental and will examine how inducing or reducing irrational beliefs affects health behaviors, and if certain personality traits and/or thinking styles moderate the outcome of these interventions.

Keywords: General population prevalence; Experimental interventions; Content analysis; Experience sampling

GENETIC AND ENVIRONMENTAL INFLUENCES ON PSYCHOLOGICAL
ADAPTATION OF CHILDREN AND ADULTS – GENIUS

GENIUS research group¹

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Almost all behaviors develop due to the influence of genes, and the basic question in science is not whether genes are important, but how they affect behaviors. GENIUS responds to the state of the art in behavioral genetic and epigenetic research using twin studies as methodological background, focusing on examination of the genetic and environmental mechanisms that shape human behavior and adaptation styles. Twin studies rely on the comparison of monozygotic (MZ) and dizygotic (DZ) twins in order to determine the genetic and environmental basis of phenotypic characteristics. The study will include 2000 twins of all ages and their family members, who will participate in the assessment of dispositional characteristics, physical attributes, cognitive abilities, environmental factors, and adaptation styles. All research will be underpinned by the creation of the Serbian Twin Advanced Registry (STAR) and the STAR Biobank containing twins buccal-derived DNA samples. The second segment of the Project will be an epigenetic study, i.e., genome-wide methylation study in MZ adult twin pairs having discordant adaptation styles. Next-generation sequencing (NGS), as the state-of-the-art method in the field, will be used to detect broad regions of DNA methylation. The results of the Project will unravel the nature of interactions among specific and common genetic and environmental factors, and their influences on epigenetic changes and health related habits and characteristics. Introducing Open Science Principles in research practice, GENIUS research team is dedicated to set an overall environment for the exchange of knowledge and education of all stakeholders on how the achievements of behavioral genetics can strengthen and empower mental health and lifestyles.

Keywords: twin study, extended twin family design, epigenetics, biobank

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CLINICAL PSYCHOLOGY

FAMILY FUNCTIONING AND NEGATIVE EXPERIENCES IN THE COVID-19 PANDEMIC AS PREDICTORS OF SUBJECTIVE WELLBEING

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The aim of this study was to investigate dimensions of family functioning and negative experiences in the Covid-19 pandemic as predictors of subjective wellbeing. The sample consisted of mothers (age range 33 to 61, $M = 48.78$, $SD = 6.00$), fathers (age range 35 to 71, $M = 52.00$, $SD = 6.34$) and firstborn children ($M = 20.21$, $SD = 3.40$; 73.5% women) from 87 families; 261 participants in total. The following instruments were used: 1) a socio-demographic questionnaire (monthly income and general health issues as control variables, questions about negative pandemic consequences, including contagion by Covid-19, severe symptoms of Covid-19, death of family member and job/income loss); 2) Family Adaptability and Cohesion Evaluation Scale (FACES IV) measuring eight dimensions of family functioning; 3) Scale of Positive and Negative Experience (SPANE) and 4) Personal Wellbeing Index (PWI). A One-way ANOVA and a post-hoc Scheffe test for multiple comparisons had not found any significant differences in the studied variables between mothers, fathers and children, allowing us to conduct the analyses on the whole sample. To investigate the contribution of predictors (dimensions of family functioning and negative consequences related to the pandemic) in explaining subjective wellbeing (measured via PWI and SPANE) three regression analyses were conducted. As control variables, monthly income and general health issues were included as the first set of variables in all regression analyses. Family functioning and negative consequences of the pandemic were first used to predict Wellbeing index. The results were statistically significant ($R = .538$; $R^2 = .290$; $R^2\text{change} = .175$; $F(9, 252)$ change = 6.638; $p < .001$). The same predictors were also found to be significant predictors of negative emotions ($R = .493$; $R^2 = .243$; $R^2\text{change} = .233$; $F(9, 252)$ change = 8.276; $p < .001$) as well as positive emotions ($R = .450$; $R^2 = .203$; $R^2\text{change} = .199$; $F(9, 252)$ change = 5.726; $p < .001$). Overall satisfaction with family functioning was the only significant predictor of PWI ($\beta = .356$, $p < .001$). Significant predictors of positive emotions were balanced cohesion ($\beta = .346$, $p = .015$), unbalanced disengaged ($\beta = .267$, $p = .007$), unbalanced rigid ($\beta = .161$, $p = .021$) and negative consequences of the pandemic ($\beta = -.113$, $p = .049$), while significant predictors of negative emotions were unbalanced enmeshed ($\beta = .241$, $p < .001$), unbalanced disengaged ($\beta = -.201$, $p = .044$) and negative consequences of the pandemic ($\beta = .160$, $p = .013$). The association between unbalanced dimensions of family functioning and better wellbeing may seem paradoxical at first glance, yet it is understandable from the perspective of systemic family theory and can be explained as a function of maintaining the family system when satisfaction with family interrelations is low and by the specific dynamic of family functioning in a context of crisis. The formulation of certain strategies on how to strengthen families and improve their functioning would be of great social importance. Moreover, the level of family cohesion has been shown to be a generally stronger predictor of positive and negative emotions than flexibility.

Keywords: family functioning, Covid-19, subjective wellbeing

DISTINCT IMPACTS OF STRESSFUL LIFE EVENTS ON THE OCCURRENCE OF MYOCARDIAL INFARCTION IN MEN AND WOMEN

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Research on the relationship between stress and illness began in the early 1970s. Stress can be operationalized as a reaction to life events. Numerous life events bring life changes, which can cause discontinuity in life and the need to adapt. This can provoke stress responses. Infrequent researches imply that distinct life events could impact the occurrence of myocardial infarction. This case-control study aims to determine if different stressful life events in men and women have different predictive contributions to the occurrence of myocardial infarction. The study involved 500 subjects (52.2% male, mean age 54.9 ± 12.5), of whom 200 with myocardial infarction and 300 healthy subjects.

The Scale of Stressful Life Events was used in the Study. This scale included 31 life events. The results of direct logistic regression showed that the model significantly distinguished healthy men from those who had a myocardial infarction ($X^2(31, N = 258) = 95.11, p < .01$). The model explains 30.8-41.4% of the variance in the occurrence of myocardial infarction. Only four life events (Wedding, Childbirth, Partner seriously ill or hurt, and Vacation) contributed statistically to the model. The results of direct logistic regression showed that the model significantly distinguished healthy women from those who had a myocardial infarction ($X^2(31, N = 241) = 55.35, p < .01$), and explains 20.5-28% of the variance in the occurrence of myocardial infarction. Only one life event (Vacation) contributed statistically to the model. It is concluded that Childbirth, and Partner seriously ill or hurt are risk factors for infarction in men. Wedding and Vacation are both protective factors for males, yet Vacation is the only protective factor for women. Distinct gender roles can explain these disparities. Men, in particular, have a decreased risk of infarction in the first year of marriage, which rises when their partner gets ill or injured. Women act as caregivers towards family members, whereas men consider themselves as the family's financial providers. This also explains why a new child in the family increases the risk of the infarction in men - the financial strain increases. Women are more burdened after childbirth, but they receive attention and social support and feel fulfilled in their duty as mothers, whereas men may feel abandoned. We can conclude that the influence of stress experienced following particular life events on the risk of myocardial infarction varies by gender.

Keywords: Stress, Life events, Myocardial infarction

FACTORIAL VALIDITY OF THE BODY PERCEPTION QUESTIONNAIRE - SHORT
FORM (BPQ-SF)

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The Body Perception Questionnaire (BPQ) was created within the framework of polyvagal theory (Porges, 1995, 2011), which conceptually connected subjective experience of the body with its neurophysiological bases. The original BPQ (122 items, Porges, 1993) assessed several aspects, including most frequently used body awareness and autonomic reactivity. BPQ short form (BPQ-SF) includes these two subscales with 46 items. Past studies revealed that BPQ-SF body awareness can be described by a single factor, and autonomic reactivity by two factors representing sub-diaphragmatic and supra-diaphragmatic responses. Therefore, the main aim of the current study was to test the factorial validity of BPQ-SF, which had previously been officially translated into Serbian, using the forward-backward procedure involving four independent bilingual translators and two coordinators. Participants were 795 first-year students from the Faculty of Organizational Sciences and second-year students of psychology from the Faculty of Philosophy (63% of females, mean age $M = 19.03$, $SD = 0.78$) who completed an online form of BPQ in exchange for partial course credit.

A confirmatory factor analysis showed that the three-factor model fit the data acceptably well with $\chi^2(985) = 3494.47$, $CFI = .948$, $TLI = .945$ and $RMSEA = .057$. However, after inspecting modification indices we decided to add one item covariance to the model (between two items related to constipation), which improved model fit substantially, χ^2 difference test (1) = 271.51, $p < .001$. The fit of the modified three-factor model was good, $\chi^2(984) = 3222.96$, $CFI = .953$, $TLI = .951$ and $RMSEA = .054$. Except for two Awareness items, all items had moderate to high loadings on their corresponding factors ($w > .40$). The correlations between BPQ dimensions were in the moderate range from $r = .46$, $p < .001$ for awareness and supra-diaphragmatic reactivity to $r = .51$, $p < .001$ for the two reactivity scales.

Our data confirmed the proposed factor structure of the BPQ, with a single factor for body awareness (presumably reflecting the shared afferent targets of cranial and spinal pathways in the brainstem) and two factors for reactivity (reflecting distinct efferent control systems that give rise to individual differences in physiological responses below and above diaphragm).

Keywords: BPQ, body perception, interoceptive awareness, factorial validity, CFA

RELATIONSHIP BETWEEN EARLY MALTREATMENT AND AUTONOMIC
FUNCTIONING IN ADULTHOOD: PRELIMINARY RESULTS OF AN
INTERNATIONAL STUDY ON BODY PSYCHOTHERAPISTS

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Research shows that early maltreatment impacts the autonomic nervous system (ANS), shaping behavior and habitual reactions to life events in adulthood. Psychotherapists tend to report higher rates of personal experience with trauma and early maltreatment but also less mental problems and disturbances in adulthood, compared to other professions (e.g. non-clinical psychologists, but also accountants, chemists, engineers, etc.). In the framework of polyvagal theory (Porges, 1995, 2011), we explored the effects of practicing body psychotherapy (BPT) on the link between early maltreatment and autonomic reactivity in adulthood, by comparing body psychotherapists to the general population. Unlike other psychotherapy modalities, BPT is primarily focused on direct work with the body, assuming its inseparable relationship with cognitive and emotional aspects of self-experiences. An online study included 570 body psychotherapists from 35 countries ($M_{age} = 52.92$, 81% of females) and 592 participants from the USA general population ($M_{age} = 51.89$, 78% females). Body Perception Questionnaire – Short Form (BPQ-SF, Cabrera et al. 2019) was used for self-assessment of Body awareness, Supra- and Sub- diaphragmatic autonomic reactivity (from 1 never to 5 always). Early maltreatment was measured by Childhood Trauma Questionnaire (CTQ, from 1 never true to 5 very often true). CTQ scores were higher in the BPT sample, than in the general population (Welch's $t(1159.40) = 4.09$, $p < .001$). All correlations between CTQ and BPQ subscales were lower for the BPT subsample ($r = .20-.25$, $p < .001$) compared to the general population sample ($r = .31-.37$, $p < .001$). Thus, we tested three regression models with BPQ dimensions as criterion variables, CTQ total score and sample membership as predictors and their interaction term as a moderator. CTQ was a significant positive predictor of all BPQ dimensions ($B = 0.85-1.15$, $p < .001$) and we also observed a significant interaction ($B = 0.79-0.98$, $p < .001$). Simple slope analysis revealed that slopes were significantly different from zero for both samples, but the relationship between CTQ and BPQ dimensions was consistently lower for the BPT sample ($B = 1.64-2.13$, $p < .001$ for the general population and $B = 0.85-1.15$, $p < .001$ for BPT practitioners). Our results revealed a higher level of childhood maltreatment amongst BPT practitioners compared to the general population, suggesting either real differences or a higher awareness of this issue amongst psychotherapists. BPT practitioners' advanced ANS functioning in adulthood might reflect the efficiency of training to become psychotherapist, also found in past studies.

Keywords: Body psychotherapy, Body Perception Questionnaire, childhood maltreatment, autonomic reactivity, body awareness

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DEPRESSION, SHYNESS AND SELF-ESTEEM AS A PREDICTORS OF INTERNET ADDICTION

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The current study builds on previous research examining Internet addiction, self-esteem, depression, and shyness, and aims to determine whether it is possible to predict Internet addiction based on self-esteem, depression, and shyness in the general population. The sample is convenient, and it consists of 494 subjects (63.4% men), with an average age of 25.95 ($SD=7.62$). Data were collected using the instruments: Young Internet Addiction Test-Short form (IIAT - SF); The Shyness Scale (SS); Rosenberg Self-Esteem Scale; Depression, Anxiety, and Stress Scale (DASS-S) and Sociodemographic Questionnaire constructed for this research. The hierarchical regression analysis were conducted in two steps. In the first step the main effect of sociodemographic variables were examined. Next, the main effect of depression, shyness and self-esteem were included. The results have shown that the first model, consisting of control variants (sex, age, place of residence, marital status) significantly predicts Internet addiction ($R^2=0.177$; $F(4,489)=26.33$; $p=0.00$). Significant predictors were a place of residence ($\beta=.165$, $p=0.00$) and marital status ($\beta=.368$, $p=0.00$). The second model, in which the predictors of self-esteem, depression, and shyness were added, also proved to be significant ($R^2=0.464$, $F(7,486)=60.03$; $p=0.00$). The contribution of additional predictors in this model is also significant ($R^2\text{Change}=0.287$; $F\text{Change}(3,486)=86.55$; $p=0.00$). Within the model, statistically significant predictors were place of residence ($\beta=.099$, $p=0.00$); marital status ($\beta=.247$, $p=0.00$); self-esteem ($\beta=-.213$, $p=0.00$); depression ($\beta=.319$, $p=0.00$) and shyness ($\beta=.109$, $p<.01$). The results shows that the individuals who lives in town, who are single, have lower self-esteem, higher depression and are shy, would most likely use Internet frequently and could develop Internet addiction. The factors predictive incidence of Internet addiction identified in this study, such as place of residence, marital status, self-esteem, depression and shyness, could be provided for the prevention of Internet addiction in the general population.

Keywords: Internet addiction, depression, shyness, self-esteem

MINDFULNESS AMONG EMERGING ADULTS IN SERBIA

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Mindfulness is a multidimensional construct that refers to the consciously focused attention on the present moment, which is exempted from condemnation and mediated by acceptance, openness, and curiosity. This research's main goal is to examine mindfulness among emerging adults, as well as its relation to psychological and interoceptive self-awareness. Previous research have shown that even though mindfulness and self-awareness, are similar constructs, they are not the same. Psychological self-awareness is knowledge about one's emotions, attitudes, goals, and thoughts, while interoceptive self-awareness is knowledge about bodily experience. Mindfulness is measured using the MAAS scale, which measures the attention as an aspect of mindfulness; the FFMS-SQ scale, the five-faceted instrument for

measuring mindfulness (facets: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience), and the BMS scale, which measures bodily mindfulness. Psychological self-awareness was measured by the ISKS scale, while interoceptive self-awareness was measured by the MAIA scale. The sample consisted of 274 respondents (female: 84.7%; age: $M=22.03$, $SD=1.907$) and was collected using the snowball method, via social networks. Emerging adults in our sample had high scores on mindfulness scales, which suggests that they are highly aware of their psychological and physical experiences. Different aspects of mindfulness were moderately correlated (highest correlation: $r=.476$, $p<.001$). Mindfulness is a good predictor of both psychological ($F(4)=51.026$, $p<.001$, $R^2=.431$) and interoceptive self-awareness ($F(4)=62.559$, $p<.000$, $R^2=.474$). Path analysis has shown that the direction of influence goes from psychological self-awareness to mindfulness and from mindfulness to interoceptive self-awareness ($\chi^2(19)=37.030$, $p<.000$, $RMSEA=.045$, $NFI=.928$, $CFI=.962$), and there's an indication that mindfulness can also be a mediator between these two aspects of self-awareness. Results indicate that emerging adults in Serbia are overall mindful, which is expected according to previous research. Mindfulness is different construct, yet connected to both psychological and interoceptive self-awareness and there's indicators that it could be a mediator between these constructs. This conclusion should be investigated further, since it's not a result that could be found in earlier papers.

Keywords: body mindfulness, mindfulness, interoceptive self-awareness, psychological self-awareness

AM I GOOD ENOUGH? THE MEDIATED EFFECTS OF DISTANCE FROM THE IDEAL SELF ON THE WELL-BEING OF EMERGING ADULTS

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Previous research has shown that depressiveness in emerging adulthood represents one of the outcomes of distress regarding the perception of long distance from the ideal self, reflecting poorly on psychological well-being. But what if the stress response could be mediated by people's confidence in their ability to control the distance? This work aimed to examine the nature of the relationship between mentioned distress, confidence to change, depressive symptoms, and psychological well-being. The sample consisted of 364 emerging adults (81.3% female), aged 18-30 ($M = 21.44$, $SD = 2.36$). All participants were students, mostly at the undergraduate level (80%). They completed Self-Discrepancies Scale, listing features of four "self-guides": desired & undesired self, ought & un-ought self (<un>desired for them by the significant others). Participants estimated the extent to which they possess the features and answered (Likert, 1-7) how big they find the discrepancies between desired self-guides (ideal self) and their current self, how much distress this causes (DIS), and how confident they feel to reach the ideal (CONF). The depression score (DEP) was singled out from the 42-item Depression Anxiety Stress Scale (Likert, 1-4). Flourishing Scale (Likert, 1-7), an 8-item summary operationalized through relationships, self-esteem, life-purpose, and optimism was used for measuring well-being (WB). The main analysis was conducted with Hayes PROCESS macro, Model 6. The results showed three significant indirect effects, two simple and one sequential mediation: 1. DIS – CONF – WB ($ae = -.06$, $SE = .01$, $CI [-.09, -.03]$); 2.

DIS – DEP – WB ($dc = -.10$, $SE = .02$, $CI [-.13, -.05]$); 3. DIS – CONF – DEP – WB ($abc = -.04$, $SE = .01$, $CI [-.07, -.02]$). No direct, only mediated effects of distress on well-being were found. Therefore, higher distress regarding perceived discrepancies between ideal and current self only affected psychological well-being through lower self-confidence to change this proportion, higher depression levels, and both. Suggested model explained almost half of the well-being variance ($R^2 = 0.49$, $p = .000$). The higher stress levels could be interpreted as the lower satisfaction with the current self, leading to depressiveness, which is often mediated via feelings of helplessness. Ultimately, this could cause dissatisfaction on the broader well-being level and create a loop, leading recurrently to wider discrepancies, more profound distress, and depression.

Keywords: ideal self, distress, depression, well-being, emerging adults

WHO CARES ABOUT MENTAL HEALTH OF HEALTH WORKERS DURING COVID-19 PANDEMIC- NEW DATA FROM SERBIA

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COVID-19 pandemic put many professionals worldwide in extremely challenging circumstances. Health workers in particular invested enormous efforts to cope with unknown virus, patients' unpredictable health complications, high death ratio and many other stressors. However, research shows that this also contributes to their mental health problems. The research examined mental health of health workers after close to two years of dealing with those increased demands. A cross-sectional online anonymous survey was conducted with 286 health workers (76.7% male) during October 2021; Participants were doctors (78.5 %) and nurses (21.5%) from all regions of Serbia, age range 20-72 ($M=42.9$, $SD=10.51$). Instruments included: questionnaire for socio-demographic data, self-report questionnaire for assessment of specific professional and personal experiences during the pandemic, coping strategies, social support, etc., on 5-point Likert scale; DASS-21 scale and Maslach's Burn-out questionnaire. Results showed that 46.8% of participants had high or moderate level of depressive symptoms; 60.6% reported a high or moderate level of anxiety, while 62.2% experienced high or moderate level of stress. The most prominent problem was burnout. The majority of health workers in our study suffered from emotional exhaustion: 79.7% reported high and 12.2% moderate level of burnout. High or moderate level of compassion fatigue experienced 60.8% of participants. Finally, 60.9% felt a low or moderate level of self-efficacy. Emotional exhaustion positively correlate with the dissatisfaction of organizational aspects in health institutions ($r=-.23$, $p<.001$), absence of clear superiors' instructions ($r=-.37$, $p<.001$), low level of teamwork ($r=-.33$, $p<.001$). Anxiety and stress were significantly associated with the fear of infection ($r_{anx}=.35$; $r_{str}=.31$, $p<.001$). There was a moderate positive correlation between all scales and maladaptive coping strategies, like increased use of alcohol or anxiolytics, self-blame, withdrawal, etc. ($r=.28$ to $.44$, $p<.001$), while social support had a significant protective role ($r=.27$ to $.31$, $p<.001$). Hospital workers experience significant mental health difficulties that imply importance of providing psychosocial support to vulnerable staff to prevent further impairment of their

mental health. Since the problems experienced the majority of health workers, it is necessary to focus intervention to the sources of systemic and organizational problems, instead of addressing it solely to the individual responsibility.

Keywords: health workers, COVID-19, mental health, burn out

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FACTOR STRUCTURE AND PSYCHOMETRIC PROPERTIES OF THE CROATIAN VERSION OF INFORMATION TECHNOLOGY ANXIETY SCALE IN A STUDENT SAMPLE

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The development of new IT technologies has led to the construction of measuring scales adapted to new specific technologies, such as the Internet. However, there are surprisingly few measurement scales focused on IT-related anxiety per se. Therefore, authors López-Bonilla and López-Bonilla (2012) proposed a new measurement scale – Information technology anxiety scale. Since the scale was not adapted or validated on the Croatian sample, this paper aimed to translate and adapt the scale into Croatian and check the factor structure of the scale and metric characteristics of reliability and sensitivity. 147 students from the University of Zadar participated in the research, of which 70% were female. The age of the participants was categorically expressed, and the largest number of participants was between 21 and 23 years old (54.4%). An exploratory factor analysis was performed using the maximum likelihood method. According to the Kaiser - Guttman criterion, the existence of one factor with a characteristic root greater than one was determined. All particles had satisfactorily high saturations with extracted factor ($> .50$), except for the seventh particle ("I do not feel threatened when others talk about ITs"). Due to the low saturation of the 7th particle with the factor, the particle was ejected from the scale and an exploratory factor analysis was performed again. According to the Kaiser - Guttman criterion, the existence of one factor with a characteristic root greater than one was determined. This factor explained 54.5% of the variance of the scale results. All particles had high saturation with the factor ($> .50$). Furthermore, the scale reliability was checked. Cronbach's alpha coefficient was .93. The sensitivity of the scale was measured by the range of results and the distribution of the results. 75% of the theoretical range was covered in this sample. Measures of skewness and kurtosis and the Kolmogorov-Smirnov test were performed. Kolmogorov-Smirnov test found that the results differ from the normal distribution ($KS(d) = .21, p = .003$), but the measures of skewness and kurtosis were within the allowable range according to Kline's (2011) criterion (skewness = 1.04, kurtosis = .4). It can be concluded that the scale of information technology anxiety has good metric characteristics in a sample of Croatian students. Additionally, the scale possesses a factor structure and psychometric properties comparable to the original version of the scale.

Keywords: anxiety; information technology; validity

COGNITIVE PSYCHOLOGY

EMPIRICAL VALIDATION OF TAKE THE BEST MODEL IN JUDGMENTS:
IMPORTANCE OF THE PATTERN OF ADDITIONAL CUES

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„Take the best“ (TTB) is a probabilistic model of decision-making based on Recognition heuristic (RH). Model takes into consideration cue information - whether the object has a certain characteristic (+cue) or not (-cue). Cues are organized in a hierarchy, where cues higher in the hierarchy help make more accurate distinction between two objects. Recognizing a (city) name is the primary cue and when two e.g. cities are both recognized, focus is put on first next cue whose value is different across two cities. The aim of this study was to examine whether humans really tend to make judgments based on this model and is the cue pattern under the first distinctive cue relevant for the decision maker. If the city which doesn't have a stadium has more positive cues of smaller relevance than the city with the stadium, does that play any role in judgment on city size? To test this, we replicated the part of Broder and colleagues study where the respondents had to decide which of the two offered cities is bigger. Replication consisted in comparing recognized cities for which additional cues values are given (R+) with unknown cities (New). Novelty was the comparison of different cue patterns (independent variable) to see whether the position of the positive cue is the only relevant thing, or the number of positive cues even when they are lower in the hierarchy can make a difference on choosing which city is bigger (dependent variable). Participants ($N=75$, 47% female) did the experiment, where in the first phase predictive values of the cues were learned. In the second phase, same respondents learned patterns of specific cities (R+ cities), which were used in the third phase where they judged which city in the pair was bigger (New/New, New/R+ and R+/R+). We replicated the finding that people do find cities they recognize as bigger than the ones they don't know (in 79,2% of cases). By multiple separate chi square analysis, we compared R+ cities with different patterns and the main finding is that there is difference between pattern -++ and --+ ($\chi^2(1, N=75)=7.707$, $p=.006$), which is in accordance with TTB. However, the most interesting finding is that there is no difference between patterns ++- and -++ ($\chi^2(1, N=75)=0.276$, $p=.870$). This indicates that not only the position of the distinctive cue is relevant, but also the number of positive cues, and that the judgment is more complex than TTB would expect. These results lead us to consider that cue processing could be simultaneous rather than sequential.

Keywords: Recognition, Take the Best, cues, decision making

DISTRIBUTED MEANINGS AND SENSES WITHIN DISCRIMINATION LEARNING
FRAMEWORK – PROOF OF CONCEPT

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Discrimination learning (DL), a simple learning mechanism has proven to be a powerful model for describing language processing. In this paper we contribute to describing the semantic phenomena in the light of DL. We do so by continuing to focus on polysemy advantage and homonymy disadvantage. Whereas the former is most dominantly explained by a higher activation through the shared semantic core of multiple related senses, the latter seems to be a consequence of sharing activation across unrelated semantic features of multiple meanings. Filipović Đurđević and Kostić (2021) crossed DL and distributional semantics to demonstrate that the relatedness of polysemous senses could be operationalised as the overlap at the level of the outcomes. Our aim was to test whether this activation pattern can arise in endstate of learning when we simulate learning of polysemous, homonymous, and unambiguous words using a small scale model over which we have full control. We used a toy lexicon containing two entries from each of the three groups. Cues were bigrams made from nine-letter strings randomly generated from five letters, to introduce cue competition. To simulate all aspects of ambiguity, each word had four outcomes. Each unambiguous word and each homonym meaning had four unique outcomes, and each sense of a polyseme had one unique outcome, one shared by only one other sense, and two outcomes shared by all senses. The results revealed that cue-outcome weights were the highest for the polysemous words, thus corroborating the findings of Filipović-Đurđević and Kostić (2021). However, no difference in cue-outcome weights was observed between homonyms and unambiguous words. This simple simulation continues to inform future studies on how polysemous senses could be defined when corpus data is used. The distributional hypothesis (Harris, 1954) states that similar words, or in this case senses, appear in similar contexts. Our simulation suggests that outcomes should be defined in a way where homonym meanings do not share any outcomes, and polysemous words do. However, further simulations on toy corpora are needed in order to more precisely understand the supposed structure of distributed meanings/senses.

Keywords: discrimination learning, distributional semantics, polysemy, homonymy

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DOES TIME PRESSURE MAKE US ILLOGICAL?

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The classic default-interventionist (DI) approach to human cognition has been recently challenged by the hybrid models (HM). Unlike DI that presumes non-logicality of the intuitive answers, HM assume that during initial stages of reasoning multiple heuristic processes simultaneously activate, some of which are the so-called logical intuitions presumed to depend on individual differences in cognitive abilities and mindware instantiation (MI) – automatization of knowledge needed to solve a task. The present study aimed to investigate at what point in time logical intuitions activate, and whether differences in MI, executive functioning, and general cognitive ability drive differences in initial and final stages of reasoning. In the repeated design experiment, participants (N=195) solved Cognitive Reflection Test (CRT) comprising 8 tasks, first with and then without a strict time limit. The time limit for each participant in each CRT task amounted to mean time needed to read 5 sentences of the same structure and length as CRT task + 250, 500, 750, 1000, 1250 or 1500 ms depending on which group they were assigned to. As a measure of MI 21 mathematical problems requiring knowledge of basic arithmetic operations, proportions and the concept of probability were used. As a measure of general cognitive ability a short Raven's matrices test (RM) was used, and as measures of executive functions of shifting, inhibition and updating local-global, Stroop and 3-back tasks were used. The ANOVA revealed no differences in accuracy on CRT with time limit depending on the group ($F(5, 187)=0.177$, $p=.971$) indicating that logical intuitions activate either in the first 250 ms or after more than 1500 ms of reasoning. In line with the DI models and the notion of cognitive miserliness as a general feature of cognitive processing 27.5% of the times participants failed to solve a CRT task regardless of whether a time limit was imposed. However, among 34% of correct trials in unlimited time conditions, half were preceded by correct answers given within a time limit, which is in line with HM, i.e., logical intuitions. Finally, accuracy on CRT in both strict and no time limit conditions significantly correlated only with the scores on RM ($r_{\text{limit}}=.153$, $p=.034$; $r_{\text{no limit}}=.282$, $p<.001$) and MI test ($r_{\text{limit}}=.221$, $p=.002$; $r_{\text{no limit}}=.605$, $p<.001$). In accordance with HM, findings imply that both MI and g-factor are important for deliberate, but also for intuitive logical reasoning.

Keywords: dual process theories, logical intuitions, mindware, executive functions, g-factor, reasoning

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DO HIGHER-LEVEL CHESS PLAYERS TEND TO RELY ON HEURISTICS MORE IN
GENERAL AS WELL AS IN CHESS PROBLEM-SOLVING?

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Chess experts tend to use type 1 processes of thinking (heuristic, intuitive, fast) in familiar chess positions and type 2 (deliberate, reflexive, slow) in less familiar chess positions. It is possible to explore such a tendency, in a broader context, by applying the cognitive reflection test (CRT) which measures one's tendency to override intuitive responses and engage in a more reflexive cognitive process. Using heuristics in general and specific problem-solving might reveal the general nature of a (chess) experts' cognition. This study was based on the results from the broader research project on chess expertise. For this particular study, a correlation research design was deployed. The goal was to investigate the relationship between chess expertise and cognitive styles in solving general and domain-specific problems. It was hypothesised that chess players with a higher rating are more efficient in solving chess and CRT problems and that chess players' problem-solving efficiency will positively correlate with their CRT efficiency in general. The participants' ($N=48$, age $M=30$, 5 female) chess expertise was displayed on the chess national rating system scale (ranging from 1547 to 2270 Elo points). Chess problems were developed in collaboration with an independent group of chess experts, and they varied in difficulty and position motives. The participants solved 24 chess problems followed by CRT, both presented on a computer screen. They had three minutes per chess problem and no restriction time on the CRT (response time was measured by the last click on a problem). The accuracy and decision time in chess and CRT problems was measured and then analysed by Spearman's rho correlation. The analysis revealed that chess players with a higher rating are more efficient in chess problemsolving (solved problems - $\rho = .77$, $p < .001$, decision time - $\rho = -.61$, $p < .001$). Also, more expert players showed shorter decision-time in intuitive responses to CRT problems ($\rho = -.32$, $p < .05$). Furthermore, contrary to expectations, it was shown that the chess players that were more efficient in chess problem solving were less efficient in CRT ($\rho = -.29$, $p < .05$). These results indicate that more efficient chess players tend to have a less reflective cognitive style. In other words, it seems that they are more prone to using an intuitive approach, i.e. heuristics in their decision-making whether in chess or more general problem-solving. We assume that this outcome is the result of advanced players' more automated chess responses for a wider range of problem situations.

Keywords: Chess problem solving, Cognitive Reflection Test, Expert reasoning, cognitive styles, Dual process theory of thinking

THE NUMBER OF SENSES EFFECT IN POLYSEMOUS NOUN RECOGNITION:
EXPANDING THE DATABASE

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Words with multiple related senses (polysemous words) are recognised faster compared to the words with multiple unrelated meanings (homonymous words) and unambiguous words (Rodd et al., 2002). The measure of ambiguity in polysemous words was the number of senses (NoS), derived from the meanings/senses provided by native speakers, as well as the information theory measures, entropy (sense uncertainty) and redundancy (the balance of meaning probabilities). These measures were significant predictors of reaction time in visual lexical decision task (VLDT) experiments (Filipović Đurđević & Kostić, 2021). In spite of differences, multiple models agree in predicting the observed facilitation. Research in Serbian revealed these effects in noun, adjective, and verb processing (Anđelić, Ilić, Mišić, & Filipović Đurđević, 2021; Filipović Đurđević & Kostić, 2008; 2021; Mišić & Filipović Đurđević, 2021). The aim of this research was to conceptually replicate and further generalise the NoS effect on processing of nouns. Also, the goal was to collect native speakers' intuitions of the senses for the novel set of Serbian nouns and thus expand the existing database (Filipović Đurđević & Kostić, 2016). A novel set of 100 polysemous nouns was selected from the dictionary and then included in the normative study, in which 36 participants were instructed to write all of the senses that they could recall. The senses obtained from the participants were categorised according to the dictionary and the NoS along with the entropy and redundancy of senses was calculated. The same nouns were presented in a visual lexical decision task to a novel group of 87 native speakers. The results indicated that polysemous nouns with higher number of senses were processed faster ($\beta = -.02$, $CI = -.03 - -.00$, $t = -2.78$, $p = .005$), which is in accordance with our hypothesis. The results regarding the information theory measures revealed that the effects of entropy (H) and redundancy (T) indicated a non-significant trend in the predicted direction (H: $\beta = -.00$, $CI [-.02 - .01]$, $t = -.597$, $p = .557$, T: $\beta = .01$, $CI [-.00 - .03]$, $t = 1.66$, $p = .097$). These findings concur with the previous findings from the noun, adjective and verb experiments and the SSD model (Armstrong & Plaut, 2016) and together they converge to the conclusion that the effect of number of senses in the processing of polysemous words facilitates recognition in the visual lexical decision.

Keywords: lexical ambiguity, number of senses, nouns, polysemy, word recognition

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CONFIDENT AND WITH GOOD REASON? RELATIONSHIP BETWEEN JUDGMENT
OF TASK-SOLVING ABILITY AND FINAL JUDGMENT OF CONFIDENCE ON
SYLLOGISTIC REASONING TASKS

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Meta-reasoning refers to processes that monitor the progress and outcome of reasoning and problem-solving activities and they come across as feelings of certainty about how accurate the activity is unfolding. This study aimed to examine the relationship between the initial judgment of task-solving ability, a newly proposed process in this research, and the final judgment of confidence regarding syllogistic reasoning. In a repeated design experiment, participants ($N=79$) completed 16 pairs of syllogistic reasoning tasks which were constructed by crossing dimensions of conclusion validity and believability. The tasks were divided into two groups – congruent, compiled of tasks in which conclusion was both logical and believable or illogical and unbelievable, while incongruent group compiled of ones in which logicity and believability of the conclusion were conflicted. Participants' task was to determine whether the conclusion follows logically from the presented premises regardless of the believability. They were instructed to read the premises and conclusion as fast as they could, after which they were asked to estimate how sure they were that they would solve the task correctly on a 50 to 100% scale. They were then given unlimited time to think and solve the task, after which they were asked to rate how confident they were in the provided answer on the same scale. Paired sample T-test revealed a statistically significant difference between the accuracy of congruent and incongruent tasks ($t(78)=8.176$, $p=.000$, $d=1.260$), confirming the classical finding that incongruent tasks were more difficult to solve. Judgment of task-solving ability (pre-solving estimation) of incongruent tasks was lower in comparison to congruent ones but not significantly, contrary to the registered significant difference between the final judgment of confidence regarding two types of tasks ($t(78)=4.449$, $p=.000$; $d=.003$). Judgment of task solving ability highly correlated with overall answer accuracy ($t(77)=.954$, $p=.000$), as well as with final judgment of confidence ($r(77)=.869$, $p=.000$). These results show that incongruent tasks lead to lower answer accuracy, lower judgment of task-solving ability and lower confidence in the final answer. Obtained results also point out that the initial feeling about whether one will be able to solve the task correctly is strongly linked to both answer accuracy and confidence in the provided answer.

Keywords: meta-reasoning, syllogistic reasoning, judgment of task-solving ability, judgment of confidence

PROBING THE ROLE OF THE POSTERIOR PARIETAL CORTEX IN CONFLICT PROCESSING – A TRANSCRANIAL ELECTRICAL STIMULATION (TES) STUDY

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The fronto-parietal network (FPN) has a substantial role in cognitive control, conflict processing, and goal-directed behavior. Transcranial electrical stimulation (tES) is increasingly establishing as a promising tool for cognitive neuromodulation. It has been already demonstrated that tES over frontal areas can modulate processes of conflict processing. However, there is a lack of empirical evidence whether tES over the parietal cortex has similar effects. Forty-two healthy right-handed volunteers (26 f, age $M=24.7$ $SD=3.71$ y) participated in a cross-over sham-controlled experiment. In four experimental sessions participants received stimulation for 20 min over the left posterior parietal cortex PPC (P3, 10-20 International EEG system) in a counterbalanced order: 1) tDCS (constant 1.5mA), 2) otDCS (1.5mA \pm 0.5mA) oscillating at previously determined individual theta frequency (ITF, 4-8 Hz), 3) tACS at ITF (0 \pm 1mA) or 4) sham (placebo). To tap conflict processing, we administered the Simon task during the stimulation. The word “left” or “right” was sequentially presented at the left or right position of the computer screen. Participants were instructed to react as fast as possible by pressing the left or the right key according to the presented word, regardless of its position on the screen. In the congruent trials, position and word were matched while in incongruent trials they were mismatched. Difference RT scores were used as a dependent variable. Simon effect was significant only in the first [$t(41) = -3.633$, $p = .001$] and the third [$t(41) = -2.098$, $p = .042$] session, regardless of the experimental condition. No effects of tES protocols were observed on differential scores [$F(3,123) = .730$, $p = .536$, $\eta^2 = .017$], global mean RT [$F(3,123) = 1.716$, $p = .167$, $\eta^2 = .040$], incongruent trials RT [$F(3,123) = 1.051$, $p = .372$, $\eta^2 = .025$], nor significant contrasts of active stimulations and sham (mean-centered for a session order). The absence of a consistent Simon effect indicates that the task was not demanding enough for the participants, thus limiting the conclusions about tES effects on conflict processing. The null effects of parietal tES in this context can be interpreted in a line of the previous study showing no parietal effects on simple RT or tasks that pose low cognitive demand.

Keywords: transcranial direct current stimulation (tDCS); transcranial alternating current stimulation (tACS); cognitive control, conflict processing, individual theta frequency

SYNTACTIC PROCESSING OF LINGUISTIC AND MUSICAL STIMULI: IS THERE A COGNITIVE OVERLAP?

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Language and music, among other features, are believed to share similarities in structural processing of linguistic and musical stimuli. To test whether this holds true, we designed a word-by-word self-paced reading task, where linguistic and musical stimuli were presented simultaneously. By simultaneous presentation of the stimuli, we aimed to examine if their process of structural integration relied on the same resource networks, as stated by the Shared Syntactic Integration Resource Hypothesis (Patel, 2003). Each segment of a single sentence, that is, each word, was accompanied with a different chord of a single harmonic progression. While linguistic stimuli consisted of sentences that contained either subject-extracted or object-extracted relative clauses, musical stimuli were varied in terms of which key was a single chord played in. In this way, a chord was either "in" or "out" of key with a key dominant for that particular harmonic progression. Presentation of each of the sentence was followed by a comprehension question requiring a "yes" or "no" answer. If there is a shared dependency when it comes to structural integration of linguistic and musical stimuli as proposed by Patel (2003), then any element of a sentence that makes it harder to create a hierarchical structure, in this case, an object-extracted clause, should be particularly noticeable when paired with a harmoniously unexpected chord. This should be observable in longer reading times and more comprehension errors. In a 2x2 experiment, one critical item consisted of 4 stimuli, one for each condition. There were 4 times as many critical items as conditions, which means a total of 16 critical items. We tracked participant's ($N=77$) response times and comprehension accuracy. Results indicate that participants had faster reading times when presented with "in-key" chords than they did when presented with "out-of-key" chords ($F(1,76) = 9.55, p < .01, \eta_p^2 = 0.11$). They were also more accurate in comprehension of sentences containing subject-extracted relative clauses than they were in comprehension of sentences containing object-extracted relative clauses ($F(1,76) = 9.36, p < .01, \eta_p^2 = 0.11$), a phenomena well-known in the literature (Gibson, 2000). Also, we have not observed longer reading times and more comprehension errors when object-extracted clauses were paired with harmoniously unexpected chords. These results indicate that structural integration of linguistic and musical stimuli does not necessarily rely on the same resource networks as stated by Patel (2003).

Keywords: linguistic syntax, musical syntax, syntactic processing, structural integration

EXAMINING THE CONTRIBUTION OF EXECUTIVE FUNCTION „SHIFTING“ TO LYING

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Lying is a process that engages various cognitive mechanisms and is cognitively more demanding than telling the truth. The aim of this study was to examine whether the executive functions of shifting are one of the mechanisms required when lying, by examining the consequences of performing these two tasks simultaneously. Research shows that simultaneously engaging in two tasks that require the same cognitive mechanisms leads to a higher cognitive load. According to the Activation Decision Construction Model, lying requires the activation of various executive functions and the activation of a working memory's central executive system, which is highly related to the EF shifting. According to the model, lying does not require the activation of visuospatial matrix. In order to further investigate the role of EF shifting, a total of 64 respondents (70% female, age $M=18.9$, $SD=1.3$) were randomly assigned to three experimental groups. All groups participated in the lying task and were instructed to either deliberately lie or tell the truth while answering specific questions, i.e. the truthfulness of the answer was a within-subject factor. Between-subject factor was defined as the level of the additional cognitive load: one group engaged in a simultaneous task of shifting, the other in the visual rotation task, while the final group did not have any additional simultaneous task. We measured the RT on the lying task and the accuracy of the answer as indicators of the impact of the simultaneous task on lying. The analysis of variance showed that lying takes more time than telling the truth $F(1, 61) = 12.9$, $p = 0.001$, and in the lie/truth task the accuracy was lower when lying $F(1, 61) = 9.78$, $p = 0.003$. However, we did not find the main effect of the load type on accuracy $F(2, 61) = 2.96$, $p = 0.06$ or reaction time $F(2, 61) = 1.03$, $p = 0.36$, nor the interaction of response and load type on accuracy $F(2, 61) = 0.34$, $p = 0.72$ or reaction time $F(2, 61) = 2.31$, $p = 0.11$. The results support the fact that lying is more cognitively demanding than telling the truth, which is in line with previous research. However, the effect of the additional cognitive load was not registered. Subsequent analysis have showed that lying increases the RT in concurrent tasks $F(1, 38) = 43.5$, $p = 0.001$. One explanation for the findings is that we can successfully lie under the additional cognitive load used in this study, but that the consequences of cognitive load manifest in a parallel task.

Keywords: lying, telling the truth, executive function shifting, cognitive load

POLYSEMY IN CONTEXT: AN EXPERIMENTAL TEST OF THE SENSE ENTROPY EFFECT

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Entropy is a measure of sense uncertainty within polysemous words. The more senses a word has and the more balanced their probabilities are, the sense uncertainty is higher, i.e. the word is more ambiguous (Filipović Đurđević & Kostić, 2016). Previous research revealed the facilitatory effect of entropy on processing latency in visual lexical decision task (VLDT; Filipović Đurđević & Kostić, 2021; Mišić & Filipović Đurđević, 2021). This is frequently attributed to simultaneous activation of multiple related senses. In this paper we test the underlying assumption that if we were to restrict semantic activation to a single sense the advantage of widespread activation of related senses (i.e. the facilitatory effect of entropy) would disappear. One way to achieve this is by putting polysemous words in contexts constructed to evoke specific senses. Our prediction is that the entropy effect would disappear in sentences targeting specific senses, but prevail in ones that manage to maintain semantic ambiguity.

A total of 86 participants took part in the self-paced reading task. Each of 102 polysemous words was presented in three sentences - to evoke the dominant, one of the subordinate senses, and in a neutral context that did not elicit any specific sense, mimicking the VLDT situation. Sentences were presented using the Latin square design between participants and words. Linear mixed effect regression analysis revealed that, compared to the neutral context, target words were processed more slowly in the context pertaining to the dominant sense ($b = -.070$, $SE = .018$, $t(7327.3) = 3.817$, $p < .001$), and even more slowly in the context which evoked the subordinate sense ($b = -.111$, $SE = .019$, $t(7327.5) = 6.232$, $p < .001$). This was in accordance with our prediction that the context would reduce the level of ambiguity and cancel out the facilitatory effect of the related senses. This was further corroborated in the absence of the entropy effect on the processing of the target word in the sense-evoking contexts. Furthermore, we observed an interaction which suggested the reversal of the entropy effect in subordinate sense context as compared to the dominant sense context ($b = .043$, $SE = .019$, $t(7327.4) = 2.338$, $p = .019$), which is in accordance with the models regarding word ambiguity processing in context (Armstrong & Plaut, 2016). However, the effect of entropy was also absent in the neutral context asking for further elaboration of our understanding of processing of polysemous words.

Keywords: polysemy, sense entropy, context, self-paced reading task

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ONE AND ONE AND ONE IS THREE:
MANY GUISES OF CONFIRMATION BIAS COME TOGETHER**Predrag Teovanović**University of Belgrade | teovanovic@faster.bg.ac.rs**Vincent Berthet**University of Lorraine | vincent.berthet@univ-lorraine.fr

Confirmation bias is the tendency to search for, interpret and recall information in ways that confirm the hypothesis at hand (Klayman, 1995; Nickerson, 1998). Several paradigms are regularly used to demonstrate phenomena, including selection task (Wason, 1960), 2-4-6 task (Wason, 1966) and interviewee's personality task (Snyder & Swann, 1978). On these tasks, participants are asked to test a given rule by searching for evidence. Typical finding is that people are far more prone to search for positive evidence that might confirm the rule than for negative evidence that might falsify the given rule. Beside information searching (IS), confirmation bias can be detected in processes such as weighting of evidence (WE) and their recalling from memory (MR). Present study was aimed to examine the pattern of correlations among different measures of confirmation bias in order to inquire if it is more plausible to conceptualize it as a singular or as a multifaceted phenomenon. Each paradigm (cards, 2-4-6, interviewee's personality) was modified in order to measure confirmation bias in three cognitive processes (IS, WE and MR). A resulting total of nine tasks (33 items) was administered to the community sample ($N = 200$). Confirmation bias was detected on 7/9 tasks, i.e., on 27/33 items ($ps < .05$), while an acceptable level of internal consistency of individual differences across items was observed on six tasks ($\alpha s > .70$). Task-level measures of confirmation bias were significantly correlated in 25/36 cases (mean $r = .24$). Confirmatory factor analyses showed that model with three strongly correlated process factors (rs were .50, .67, and .78) fitted the data ($\chi^2(24) = 54.60, p < .001$; CFI = .92, RMSEA = .08, 90% CI [.05 - .11], AIC = 1303.95) significantly better than model with three unrelated process factors ($\Delta\chi^2(3) = 115.47, p < .001$), model with three paradigm factors (both related $\chi^2(24) = 72.03, p < .001$, AIC = 1321.38, and unrelated $\chi^2(24) = 237.52, p < .001$, AIC = 1480.88), as well as model with single factor ($\Delta\chi^2(3) = 26.50, p < .001$). Such a pattern of results indicates that confirmation bias, in spite of a variety of its guises, is better conceptualized as a unitary construct.

Keywords: confirmation bias, individual differences, selection task, 2-4-6, CFA

HAS THE CORONAVIRUS PANDEMIC AFFECTED ASSESSMENTS OF EMOTIONAL
VALENCE AND AROUSAL OF WORDS?**Milica Popović Stijačić**

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In 2020, the world's population faced a severe coronary virus pandemic; as a result, many countries, as a measure to combat the spread of the virus, introduced total population closure. At the pandemic's beginning, we conducted a study in which participants assessed emotional valence (EV) and arousal (P) for words from a normative study conducted during 2017/2018.

Since EV and P estimates are used in research as an indicator of emotional state, regardless of whether it is pictorial material or words, we assumed that there would be changes in the values of EV and P assessments for words related to a pandemic. Forty first-year psychology students estimated EV and P for 803 words selected from a study conducted during 2018. According to the researchers, words were divided into two groups: words related to the pandemic (diagnosis; $N = 232$) and words not associated with the pandemic (interest; $N = 571$). The evaluation was done on a seven-point scale; lower numbers indicated negative and higher positive emotions. Lower values meant words that did not cause arousal on the P scale. Data were analyzed using two-way ANOVA. The dependent variables were the mean values of the EV and P estimates, and the independent was the assessment period (old and new estimates) and relatedness (pandemic-related or unrelated). EV estimates did not change concerning the assessment period; only the effect of association was observed (pandemic-related words are more negative): $F(1, 801) = 22.35, p < .01, \eta^2 = .03$. Analysis of P estimates showed an effect of relatedness ($F(1, 801) = 15.08, p < .05, \eta^2 = .02$; pandemic-related words are more exciting), assessment period ($F(1, 801) = 102.79, p < .01, \eta^2 = .11$; new estimates are lower), as and their interaction ($F(1, 801) = 16.89, p < .01, \eta^2 = .02$; effect of assessment period significant for pandemic-related words - new estimates are lower than old ones). In conclusion, EV of words is stable over time, i.e. the period at the beginning of the pandemic did not induce a change in EV estimation. On the other hand, P estimates are significantly lower than the old ones; thus, P is a less stable measure than EV.

Keywords: Pandemic, emotional valence, arousal, words, ANOVA

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TOWARDS AN ACCESSIBLE ASSESSMENT OF REASONING: THE RELATION OF STATISTICAL REASONING AND CLASSIC REASONING TASK PERFORMANCE

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Classic reasoning tasks regularly require computerized administration, tight experimental control and are overall not accessible to researchers outside the field. While there have been attempts to develop reasoning assessments, these have resulted in comprehensive yet difficult to implement instruments. This study is part of a project with the aim of determining which key factors need to be covered in such an instrument, while being easily administered and accessible. Such an instrument should cover various aspects connected to reasoning performance, one of which is statistical reasoning. In order to assess how a quick and simple test of statistical reasoning (TSR) is related to performance in classic reasoning tasks, it was conducted alongside various standard tasks (Cognitive Reflection Test, Base rate bias, Linda problem bias, and the Covariation detection task). The TSR has previously been found to be a good predictor of success in base-rate tasks. Therefore, it is considered a good candidate as part of a future, easily administrable and widely available instrument within the hybrid dual processing approach to reasoning. The goal of this study was to get better insight in how

performance on different reasoning tasks and the TSR test relate. The correlational study was conducted in two countries and languages (UK and Croatia; $NUK=298$; $NCRO=292$) and the samples were equalized on demographic characteristics. Analyses on both samples showed quite robust relations between performance in the reasoning tasks and on the test. Regression analyses show that continuous scores of all the tasks are significant predictors for TSR scores (both uniquely and as a linear combination) in both samples (UK sample: $R = .58$; $R^2 = .34$; $R_{adj}^2 = .33$; $F(4, 290) = 37.27$; $p < .01$; Croatian sample: $R = .49$; $R^2 = .24$; $R_{adj}^2 = .23$; $F(4, 284) = 22.15$; $p < .01$). An alternative analysis was conducted by simplifying the scores on our classic reasoning tasks (Base rate, Linda problem, Covariation detection). The number of correctly solved tasks was computed for each participant which served as a grouping variable (0-3 correctly solved tasks). The ANOVA shows that there is a significant effect of reasoning scores on TSR scores ($F(3, 586) = 45.42$, $p < .01$, $\eta_p^2 = .19$). We can conclude that one factor which needs to be a part of any future full reasoning assessment has to cover statistical reasoning as it is robustly related to overall performance, however it is not suitable as a sole measure of reasoning performance.

Keywords: dual-process theory, reasoning, statistical reasoning, probabilistic reasoning, rationality

SUBJECTIVE ESTIMATES OF DISTRACTORS WHILE DRIVING, FREQUENCY OF THEIR USE AND THEIR RELATIONS WITH TRAFFIC ACCIDENTS

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Driving requires continuous processing of sensory information, judgment, decision making, and timely execution of motor reactions. A key factor in sensory information processing is attention, which represents directing our mental activity to selected stimuli and ignoring others that are irrelevant. Attention has a limited capacity and its inadequate distribution or distraction will have a negative effect on driving and increase the likelihood of traffic accidents. In this study, we wanted to examine the extent to which drivers feel distracted by common distractors, according to previous research, while driving: phone use, advertisements, and road accident sites, thinking about work and family problems, and conversation with the passengers, and to what extent they are susceptible to them. We also wanted to examine whether the frequency of distractors present in driving is a good predictor of the probability of a traffic accident. We measured subjective estimates of distractors and the number of accidents was determined on the basis of driver's reports. The sample consisted of 1414 drivers (equal in gender) aged 18 to 82 ($M = 33.24$). The results show that subjects estimate that these distractors disturb them a little. On a five-point Likert scale, where 1 indicates never and 5 very often, the average value for using a telephone while driving is 1.86; paying attention to advertisements and accident sites 2.11, thinking about work and family problems 2.45, and talking to passengers 3.95. The correlation between the degree to which phone use interferes with driving and its use is not statistically significant. Subjects

who believe that they are more distracted by advertisements and roadside accidents, as well as subjects who believe that they are more distracted by thinking about work and family problems, also do it more while driving ($r = .153$, $p = .01$; $r = .220$, $p = .01$). Drivers who believe that they are distracted by talking to their passengers, on the other hand, practice it less than those who subjectively estimated that they are less distracted by talking while driving ($r = -.198$, $p = .01$). Variables related to the frequency of phone use while driving, paying attention to advertisements and accident sites, thinking about work and family problems, and talking to passengers are statistically significant predictors of the likelihood of causing accidents ($\chi^2(4) = 88.556$, $p < .001$, Nagelkerke $R^2 = .089$). While the first three variables are positively related to the probability of causing accidents, the practice of talking to passengers is negative. Although subjects estimate that distractors slightly interfere with their driving, they play a significant role in traffic accidents.

Keywords: Driving, Distractors, Attention, Traffic Accidents

Acknowledgement: The data was gathered as part of a large study called "Implicit knowledge of the movement of objects and cognitive bias in the context of traffic," which was funded by the Traffic Safety Agency of the Republic of Srpska.

EFFECTS OF CONSTANT ANODAL TDCS, OSCILLATORY TDCS, AND TACS ON SHORT-TERM ASSOCIATIVE MEMORY

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Different transcranial electric stimulation (tES) techniques showed promise for noninvasive neuromodulation of memory functions. However, previous studies yielded inconsistent effects, while only a few studies directly compared the effects of different types of stimulation. Thus, here we aim to directly contrast three types of tES in the enhancement of short-term associative memory (STAM), namely, constant anodal transcranial direct current stimulation (tDCS), oscillatory transcranial current stimulation (otDCS), and transcranial alternating current stimulation (tACS). Forty healthy right-handed volunteers (25 females, $M = 25.15 \pm 3.66$ years) participated in the cross-over sham-controlled experiment. Participants underwent four experimental sessions in counterbalanced order (at least 7 days apart) in which they received: tDCS (1.5mA), otDCS at individual theta frequency (ITF, 4-8Hz) ($1.5\text{mA} \pm 0.5\text{mA}$), tACS at ITF ($0 \pm 1\text{mA}$), or sham over the left posterior parietal cortex (P3, 10-20 International EEG system). The current was applied for 20min with 30s ramp-up and ramp-down periods. In the sham condition, the current was applied only at the beginning and at the end in a 30s rump up/down fashion. STAM was assessed during the stimulation, 3-4 minutes after the onset of the protocol. The STAM task was designed in four parallel forms and consisted of digit-color association sequences in which single-digits (0-9) were presented sequentially on the cards of different colors. Participants were instructed to try to remember

each digit-color association. The sequence length varied between 3 (low-demand) to 5 stimuli (high-demand) and the sequences were presented in pre-randomized order. At the end of each sequence, the participants were presented with a cue i.e., one of the previously seen color cards and they needed to recall the digit that was presented on a given card. Results showed that relative to sham tDCS improved STAM in low- [$F_{(1,39)} = 7.39, p = .010, \eta_p^2 = .16$] as well as high-demand sequences [$F_{(1,39)} = 4.71, p = .036, \eta_p^2 = .11$], while otDCS [$F_{(1,39)} = 4.79, p = .035, \eta_p^2 = .11$] and tACS [$F_{(1,39)} = 4.42, p = .042, \eta_p^2 = .10$] exclusively improved performance for high-demand sequences. The results indicate that different stimulation protocols potentially facilitate different cognitive processes. Namely, the effects of constant tDCS on STAM appear to be mediated by boosting the lower-level attention processes while the oscillatory protocols seem to directly promote associative binding.

Keywords: transcranial direct current stimulation (tDCS); transcranial alternating current stimulation (tACS); short-term associative memory; individual theta frequency

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CORRECT END-OF-STUDY GUESS IN TRANSCRANIAL DIRECT CURRENT STIMULATION EXPERIMENTS DOES NOT MODERATE THE EFFECTS ON ASSOCIATIVE AND WORKING MEMORY

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Over the last ten years, non-invasive brain stimulation (NIBS) techniques have emerged as promising tools for cognitive enhancement. Transcranial direct current stimulation (tDCS) has become one of the most widely used techniques in NIBS research as it enables causal inferences about neural underpinnings of cognition. However, studies using tDCS to modulate cognitive functions often show inconsistent findings thus increasing the interest in factors that may moderate tDCS effects. One of these factors is participants' beliefs of the tDCS intervention they received. Thus, one of the main questions in this context is whether guessing of sham (placebo) condition moderates the effects of tDCS. In this study, we aimed to explore if participants' beliefs about received stimulation type (i.e., the success of blinding) impacted their task performance in tDCS experiments on associative (AM) and working memory (WM). We analyzed data from four within-subject, sham-controlled tDCS experiments ($N = 83$). AM was assessed using face-word (Exp. 1) and object-location task (Exp. 2), while WM was assessed by verbal and spatial 3-back task (Exp. 3 and 4). In Exp. 1 and 3, the left posterior parietal cortex (PPC) was stimulated, while in Exp. 2 and 4 right PPC was targeted; the dorsolateral prefrontal cortex was stimulated in Exp 3 (left hemisphere) and Exp. 4 (right hemisphere). Each experiment was sham-controlled, i.e., besides active stimulation condition(s), had a sham condition as well. We found no evidence that sham guessing moderated post-tDCS memory performance in experiments in which tDCS effects were observed as well as in those that showed null effects of tDCS. Specifically, we found no evidence for the interaction between actual stimulation condition and correct sham-guessing across all experiments (p -values range .12–.99). Also, correct sham-guessing had no effect on the AM or WM improvement following active stimulation in the joint analysis performed on

a single dataset combined from all experiments i.e., stimulation loci and outcome measures ($F(1,248) = 1.61$, $p = .21$, $\eta_p^2 = .01$, $BF_{10} = 0.31$). The results suggest that the correct sham guessing (i.e., placebo-like effect) is unlikely to influence the results in tDCS memory experiments. We discuss the results in light of the growing debate about the relevance and effectiveness of blinding in brain stimulation research.

Keywords: transcranial direct current stimulation (tDCS); blinding; placebo; sham; associative memory; working memory; end-of-study guess

CAN BRAIN MACROSTRUCTURE BE A RELIABLE MARKER OF COGNITIVE
FUNCTION? ZERO CORRELATION BETWEEN HIPPOCAMPAL VOLUME AND
ASSOCIATIVE MEMORY IN YOUNG HEALTHY ADULTS

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The hippocampus (HC) is traditionally considered the key neuroanatomical hub responsible for memory and forming new associations. Several MRI studies reported a positive correlation between HC volume and associative memory (AM) performance. However, samples in these studies were relatively small (N range 27 – 39) and often not uniform. The current study aimed to reevaluate the robustness of these effects in a large sample of young healthy participants ($N = 246$; age $M = 24.95$, $SD = 4.58$; 56% female). Participants were scanned with 3T MAGNETOM Prisma using a 64-channel head coil. Synthetic T1-weighted images were produced out of relaxometry parameter maps, after which volumetric measures were calculated via FreeSurfer. AM was assessed in the lab setting. To maximize the reliability of AM measures, four paired-associate tasks of various stimuli modalities were used: Face-word, Face-scene, Word pairs, and Scene pairs. AM tasks performance shared substantial amount of variance, with the first principal component accounting for 55.6% of total variance of scores on associative recognition across tasks. The analysis showed that neither left ($F(1, 244) = 1.183$, $R^2 = 0.001$, $p = .278$), right ($F(1, 244) = 1.228$, $R^2 = 0.001$, $p = .269$) nor bilateral ($F(1, 244) = 1.309$, $R^2 = 0.001$, $p = .254$) HC volume predicts the AM principal component, nor any of the single task memory scores, regardless of stimuli (words, faces, scenes) or response type (recognition, recall). The null effects across all measures persisted when controlled for estimated total intracranial volume.

The findings can be interpreted in line with the studies suggesting that different contributions of anterior and posterior HC may lead to a null effect when the whole HC volume is taken as a predictor. The results question the assumption that rough region-of-interest structural

measures, such as the whole HC volume, are adequate to capture the neurodiversity that could lead to differences in memory performance in populations without signs of age-related tissue atrophy or neurological conditions. Current results suggest a need for further segmentation of the HC into its anatomical subdivisions, which may offer additional insights on the memory-relevant structural diversity in young healthy brains.

Keywords: hippocampus, associative memory, MRI, neural mapping

ADAPTIVE MEMORY: THE EFFECT OF DANGER SIGNAL FREQUENCY ON RETENTION VARIABILITY

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In this study, our aim was to investigate whether the frequency of the survival-related signals would affect word retention in a survival-based scenario. The original survival scenario-word retention task by Nairne et al. (2007) was extended with the instruction to the participants that they will be presented with the safety (G) signal (green circle – silence) or predator proximity, i.e. danger (R) signal (red circle – high frequency sound). After the instruction, the visual cues were presented for 500 ms between 4 groups of 8 common nouns (e.g., shoes, book, chair, etc.). The ratio of the signals was varied, resulting in 5 experimental conditions: GGGG, RRRR, and GRRR, RG GG, RR GG, with signal randomly varied in mixed signal groups. The participants ($N = 152$, 76.4% female), University of Banja Luka students, were randomly assigned to the groups. The participants were instructed to assess (on a 5-point Likert scale) to what extent would each of the 32 nouns presented be useful in survival situation. After the completion of the survival task, participants had 2 minutes to write down all of the items they could remember. ANOVA results indicated no significant differences between average number of recalled items per group ($F(4,135) = 0.32$, $p = .862$; means range: from MRRRR = 10.96 to MGGGR = 11.89). However, results of the Levene's test of homogeneity of variance indicated significant difference between the GGGG and RRRR conditions ($F(1, 54) = 7.64$, $p = .008$), with the within-group data variability being lower in the RRRR group ($SD = 2.76$), than in the GGGG group ($SD = 5.50$). Visual inspection of the data indicates that this difference in variability is mainly due to the difference in the upper half of the distribution. In addition, word retention means for the subsample of above the mean scores differ significantly for the GGGG ($M = 14.81$, $SD = 3.64$) and RRRR ($M = 12.72$, $SD = 0.96$) conditions ($t(32) = 2.35$, $p = 0.012$, $g = 0.79$ (one-tail)). Therefore, our preliminary study points to the possibility that the presence of the danger signals reduces word retention capacity by leading to more cognitive resources being invested into the usefulness assessment. This hypothesis needs to be tested on a larger sample by systematically manipulating the cognitive load of the usefulness assessment.

Keywords: danger signal frequency, adaptive memory, survival scenario, retention variability

IS THERE A DIFFERENCE IN THE STROOP EFFECT IN LATIN AND CYRILLIC WORDS?

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In the Serbian language, there is a special phenomenon called bi-alphabetism, which implies the equal use of two different writing systems - Cyrillic and Latin. Reading different writing systems may involve different information processing strategies (Fang, Tzeng, & Alva, 1981). If there is a difference in visual complexity of individual letters, there will be a difference in the perceptual demands of reading these writing systems. The examination of perceptual limitations in reading different writing systems was examined through the Stroop paradigm (Fang, Tzeng, & Alva, 1981; Levitt, Nakakita, & Katz, 2015). The Stroop effect is interference between reading the words in color and the perception of the color in which the words are written. Reading is an automatic process that is initiated by the presentation of words (Moors & Houwer, 2006) and it is faster than naming word properties (MacLeod, 2015). The visual complexity of letters is negatively correlated with the efficiency of their identification (Liu, Chen, Liu, & Fu, 2012; Pelli, Burns, Farell, & Moore-Page, 2006), so it can affect the reading process. The main goal of this research is to examine the Stroop effect in Cyrillic and Latin words. Most Cyrillic letters contain junctions that represent connections between letter lines, which makes them visually more complex. The experiment involved 33 subjects who first learned Cyrillic. Two factors were varied: the alphabet (Latin and Cyrillic) and the congruence of the color and name of the word (congruent and incongruent). Alphabet was between-subjects factor, while congruence was within-subjects factors. The dependent variable was the reaction time. A statistically significant interaction between factors ($F(1, 2642) = 9.331, p < .01, \eta^2 = .004$) was found. In Latin words, there is a difference between congruent and incongruent stimuli (57.90, (95% CI, -101.56 to -14.23), $p < .01$). But in Cyrillic words there is no interference, the reaction time does not differ for congruent and incongruent stimuli (48.79, (95% CI, -4.861 to 102.44), $p > .05$). The results also show that there is a main effect of the alphabet on RT ($F(1, 2642) = 7.671, p < .01, \eta^2 = .003$). Latin words are processed faster than Cyrillic. The obtained results indicate that there is a significant difference in the Stroop effect between two alphabets in the Serbian language, which could be partly explained by the visual properties of individual letters.

Keywords: Stroop effect, Latin, Cyrillic

PERSONALITY PSYCHOLOGY

BEHAVIORAL ACTIVATION, BEHAVIORAL INHIBITION AND IMPULSIVITY IN THE DARK TRIAD

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Gray's Reinforcement Sensitivity Theory, developed on the basis of Eysenck's theory of personality, subsumes two systems underlying behavior: the behavioral inhibition system (BIS) and the behavioral activation system (BAS). The BIS is aimed at controlling feelings of anxiety and fear that arise through the influence of outer stimuli, while the BAS is responsible for the reception of positive cues such as rewards. According to Dickman's model, dysfunctional impulsivity (DI) could be described as the tendency to non-reflective decision-making despite the negative consequences. In contrast, functional impulsivity (FI) reflects the tendency to make quick decisions when doing so is beneficial. Taken together, BIS/BAS system and DI/FI could be useful in understanding malevolent personality traits. Therefore, we aimed to explore the possibility of explaining the individual differences in Dark Triad traits using BIS/BAS and DI/FI. The sample consisted of 140 participants (aged 18 to 65, $M = 26.29$, $SD = 8.10$, 64.3% females) who completed BIS/BAS scales (assessing BIS, BAS-Fun Seeking, BAS-Reward Responsiveness, and BAS-Drive), Dickman's Impulsivity Inventory and Short Dark Triad (assessing Machiavellianism, narcissism, and psychopathy). The study was conducted online, and the participants were recruited through invitations on social media. Three multiple regression analyses were conducted for Dark Triad traits as criterion variables. BIS/BAS scales, FI and DI explained 41% of variance in psychopathy ($R^2_{adj} = .41$; $F(6, 139) = 16.90$; $p < .01$), 33% of variance in narcissism ($R^2_{adj} = .33$; $F(6, 139) = 12.48$; $p < .01$), and negligible amount of variance in Machiavellianism ($R^2_{adj} = .03$; $F(6, 139) = 1.75$; $p > .05$). DI ($\beta = .32$; $p < .01$), BAS-Fun Seeking ($\beta = .26$; $p < .01$) and BIS ($\beta = -.24$; $p < .01$) were significant predictors of psychopathy, while BAS-Reward Responsiveness ($\beta = .22$; $p < .01$), FI ($\beta = .20$; $p < .05$) and BAS-Drive ($\beta = .20$; $p < .05$) were significant predictors of narcissism. Our results suggest that low inhibition and low impulse control, alongside pronounced motivation to seek novel rewards, could be substantial in psychopathy, particularly for maladaptive behavior and erratic lifestyle. In contrast, individuals high in narcissism are likely to be sensitive to pleasant reinforcement in the environment, follow their own goals, and manifest functional impulsivity, which helps them take full advantage of opportunities.

Keywords: BIS/BAS, functional impulsivity, dysfunctional impulsivity, Dark Triad

DEVELOPMENT AND VALIDATION OF THE SCEPTICISM TOWARDS SCIENCE
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Previous research has either been mainly focused on domain-specific scepticism, such as scepticism towards GMO food, vaccination and climate changes or on some of the related constructs which are oftentimes difficult to distinguish from scepticism towards science (e.g. trust in science or conspiratorial thinking). Existing scales are mostly one-dimensional (trust-distrust), and they do not set a clear boundary between scepticism and trust in science. Accordingly, the goal of this study was the development of a scale that would distinguish and measure scepticism towards science in general and include four, qualitatively different, dimensions - healthy and harmful scepticism and healthy and harmful trust in science. In the pilot study, the scale was operationalized as a 5-point Likert scale and it contained 62 items divided into 4 subscales previously mentioned. The sample consisted of 1625 respondents (81.9% women) with an average age of 41.32 years, ($SD = 11.96$). Item selection criteria were based on the unidimensional IRT model (reliability, fit, separation, and item difficulty) and psychometric characteristics of the items using RTT10G macro. The final instrument (Scepticism towards Science Scale) was validated on the sample consisting of 236 respondents (69.4% of women) with an average age of 28.5 ($SD = 11.8$). The final instrument consisted of 28 items - 7 per subscale. Using exploratory factor analysis (ML method with Promax rotation) three factors were extracted - Scepticism ($\alpha = .90$), Dogma ($\alpha = .85$), and Trust ($\alpha = .88$). The percentage of variance explained by each factor was: 31.73% for Scepticism, 8.19% for Dogma and 6.65% for Trust. Intercorrelations between the factors were: $r = -.612$, $p < .01$ between Scepticism and Dogma, $r = -.445$, $p < .01$ between Scepticism and Trust and $r = .457$, $p < .01$ between Dogma and Trust. We correlated our three factors with Trust in Science and Scientists Inventory (TSS, $\alpha = .91$), measuring trust in science, Conspiracy Mentality Questionnaire (CMQ, $\alpha = .70$), measuring conspiratorial thinking and Right-Wing Authoritarianism Scale (RWA, $\alpha = .72$), measuring right-wing authoritarianism. High correlations with TSS ($r = -.502$, $p < .01$ for Scepticism, $r = .541$, $p < .01$ for Dogma, $r = .828$, $p < .01$ for Trust), moderate with CMQ ($r = .214$, $p < .01$ for Scepticism, $r = -.346$, $p < .01$ for Dogma, $r = -.426$, $p < .01$ for Trust) and low with RWA ($r = .214$, $p < .01$ for Trust, for other factors no significant correlations were found) suggest good convergent and divergent validity. We debate the number of factors extracted, their possible interpretations, and the overall psychometric characteristics of the instrument. Additionally, we discuss the practical implications and limitations of the study.

Keywords: scepticism towards science, trust in science, dogma, scale development

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MODELING SHORT DARK TETRAD (SD4): PRELIMINARY FINDINGS ON
CROATIAN VERSION

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In the past 20 years, the popularity of the so-called dark traits in the area of individual differences has been exponentially rising. Firstly, the Dark Triad was introduced, consisting of Machiavellianism, narcissism, and psychopathy, and relatively shortly after that, the Dark Tetrad which includes also sadism was proposed. There are several instruments capturing these traits; and the most promising instrument seems to be the newly developed Short Dark Tetrad (SD4). The aim of the present study was to examine structure of the SD4 that measures all four dark traits with seven items per trait. Structure was examined using latent variable modeling, with two competing models found in the literature on the measures of Dark Triad tested, which were also previously tested in modeling SD4. First of them was strict confirmatory factor analytic (CFA) model, in which items loaded only on their respective trait or factor and factors were interrelated. The second one, bifactor model, included general “dark” factor (on which all items loaded), and four specific factors (on which only their respective items loaded). Data was collected online, on a convenience sample of 439 participants (18.5% male; age range: 18-64, $M_{age} = 25.42$, $SD_{age} = 7.94$). The bifactor model had better fit indices (CFI = .90, TLI = .88, RMSEA = .06, SRMR = .07) compared to strict CFA model (CFI = .85, TLI = .83, RMSEA = .07, SRMR = .08). In strict CFA model, all loadings were greater than .30, with most of them greater than .50. When it comes to bifactor model, factor loadings for the Machiavellianism and narcissism items were stronger in case of their respective factor compared to general factor. Psychopathy and sadism items loaded on general factor to greater degree, indicating that general factor mostly reflected item content of these two dark traits. Although some of the fit statistics fell somewhat below conventional acceptable fit threshold, their values are highly similar to those from the original validation study, as well as the pattern of factor loadings for tested models. Due to our sample composition, invariance across gender could not be tested, so this question remains open for further research, as well as the relationship of each dark trait with external correlates. Nevertheless, our preliminary findings indicate that Croatian version of SD4 is valid and comparable to the original version.

Keywords: narcissism, Machiavellianism, psychopathy, sadism, structural models

PERSONALITY TRAITS, LIFE SATISFACTION AND NEGATIVE EMOTIONAL STATES: GENDER DIFFERENCES AND THE DARK TRIAD

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Personality traits have been identified as important predictors of both psychological distress and wellbeing. While one line of research in this area focused only on the basic personality traits, in the last decade, the focus shifted to the co-called dark personality traits. The Dark Triad traits (i.e., Machiavellianism, subclinical narcissism, and subclinical psychopathy), although socially aversive, from the evolutionary standpoint, are considered to have some adaptive advantages for individuals high on these traits, and these advantages seem to differ across sex. Moreover, there are gender differences in the Dark Triad traits and the incidence of negative emotional states, and some findings point to the gender differences in life satisfaction. Therefore, the aim of this study was to investigate whether the relations of the Dark Triad (above the basic personality traits) with life satisfaction and negative emotional states (i.e., depression, anxiety, and stress) differ across sex. Data were collected within the larger project on a sample of 650 students (60% females, $M_{age} = 21.73$ years; $SD_{age} = 1.94$) from various faculties of the University of Zagreb, Croatia. Negative emotional states were assessed with The Depression Anxiety Stress Scales (α ranged from .79 to .87), life satisfaction with Satisfaction With Life Scale ($\alpha = .77$), while personality traits were assessed with IPIP50 Big-Five Factor Markers (α ranged from .80 to .90) and Short Dark Triad scale (α ranged from .66 to .76). Hierarchical regression analyses showed that gender and the Big Five traits explained 13% of the variance of life satisfaction ($F(6, 564) = 15.28, p < .001$), 29% of the variance of depression ($F(6, 564) = 40.13, p < .001$), 31% of the variance of anxiety ($F(6, 564) = 26.46, p < .001$), and 37% of the variance of stress ($F(6, 564) = 58.56, p < .001$) in the first step. The Dark Triad explained additional 1% of the variance of only stress ($F(3, 561) = 4.50, p = .004$), with psychopathy being the only significant predictor among the dark traits ($\beta = .16, t = 3.61, p < .001$). The interaction of gender and the dark traits significantly contributed only to the explanation of life satisfaction ($\Delta R^2 = .01, F(3, 561) = 3.20, p = .023$). Narcissism moderated the relations between life satisfaction and the Dark Triad: higher narcissism was associated with higher life satisfaction in females ($\beta = .17, t = 2.84, p = .005$), but lower in males ($\beta = -.14, t = -2.84, p = .005$). Taken together, the results point to the importance of both basic and the dark traits in predicting life satisfaction and negative emotional states, and the importance of taking gender differences in these relations into account.

Keywords: gender differences; negative emotional states; life satisfaction; Dark Triad; Big Five

LIGHT AND DARK PERSONALITY TRAITS AS PREDICTORS OF MATING STRATEGIES IN THE CONTEXT OF ONLINE DATING

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In recent years, online dating websites, applications, and social media have become increasingly popular tools for finding romantic or sexual partners. Individual differences in personality traits influence the use of online dating websites and applications and also influence the motives for their use. Previous work regarding mating strategies in the context of online dating has focused on the Dark Triad or Dark Tetrad concept of malevolent personality while ignoring the Light Triad concept of beneficent personality. The current study aimed to explore the utility of both light (i.e., Faith in Humanity, Humanism, and Kantianism) and dark (i.e., Machiavellianism, narcissism, psychopathy, and sadism) personality traits in predicting mating strategies in online context. A total of 216 participants (age range: 20–56 years, $M_{\text{age}} = 29.05$, $SD_{\text{age}} = 7.74$; 25.9 % males) who used online dating sites, applications, and social media for finding partners in the past year, completed the Short Dark Tetrad (α 's ranged from .60 to .81), the Light Triad Scale (α 's ranged from .58 to .75), Sociosexual Orientation Inventory-Revised ($\alpha = .85$), and the Long-Term Mating Orientation Scale ($\alpha = .89$). Two hierarchical regression analyses were conducted for short-term mating and long-term mating orientations as criterion variables, with Dark Tetrad and Light Triad traits as predictors included in the first and the second step, respectively. The Dark Tetrad traits entered in the first step explained 9.4 % of variance in short-term mating ($F(3, 212) = 7.34$, $p < .01$), while the Light Triad traits entered in the second step added 4.1 % to the overall explanation of variance in short-term mating ($F(5, 210) = 6.57$, $p < .01$). Results revealed that sadism ($\beta = .18$, $p < .01$) and Faith in Humanity ($\beta = -.16$, $p < .05$) were significant predictors of a short-term mating orientation. The Dark Tetrad traits did not significantly predict long-term mating. Faith in Humanity ($\beta = .21$, $p < .01$), Humanism ($\beta = .19$, $p < .01$), and Kantianism ($\beta = .14$, $p < .05$) were significant predictors of the long-term mating orientation. Faith in Humanity, Humanism, and Kantianism accounted for 13.9% of the variance of this construct, with R^2 change being significant, $F(5, 210) = 8.80$, $p < .01$. These findings highlight the utility of the Light Triad traits in predicting mating orientations in the online context, pointing to their importance in long-term mating strategy in particular.

Keywords: Dark Tetrad, Dark Triad, Light Triad, mating strategies, online dating

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WHO BLAMES FEMALE VICTIMS OF REVENGE PORNOGRAPHY?

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Revenge pornography refers to any kind of uploading or publishing private photos or videos of someone without their consent. The public can often blame female victims of revenge pornography for engaging in the risky behaviour of taking nude pictures or videos in the first place. Certain individual and socio-demographic characteristics of the public can lead to victim-blaming. We wanted to see if characteristics relevant in the context of blaming rape victims for their victimisation, such as ambivalent sexism, moral foundations, conservatism, age and gender, contribute to blaming victims of revenge pornography. Convenient sample consisted of $N = 364$ participants (73.3% women), with an average age of 38.07 ($SD = 13.74$), and slightly more socio-liberal orientation, according to self-assessment (a broad social attitudes 7-point scale ranging from 1-liberal to 7-conservative ($M = 2.97$, $SD = 1.49$)). In an online survey, participants were presented with a vignette describing a bogus case of a woman whose pictures a man posted on the internet. The participant's task was to assess who should take responsibility for this event on a 7-point scale, ranging from 1, meaning the woman, through 4, meaning both the woman and the man equally, to 7, meaning the man. The distribution of answers was trimodal (on word anchors) and negatively asymmetric because 52.2% of participants said that the man should take responsibility. After attributing responsibility, participants filled out the Ambivalent sexism inventory with 22 items ($\alpha = .91$) and the Moral foundations questionnaire with 30 items (all five subscales, $\alpha = .66-.81$). Regression model with sociodemographics, together with ambivalent sexism and moral progressivity, explained 19.8% of the variance in victim-blaming ($F(5, 354) = 17.22$, $p < .001$). Ambivalent sexism ($\beta = -0.27$, $p < .001$) contributed the most, followed by moral progressivity ($\beta = 0.17$, $p = .01$), while gender, age, and conservatism were not significant predictors. Content analysis of ambivalent sexist attitudes and less progressive moral foundations can help us create a substitute for the victim-blaming narrative around victims of revenge pornography which would still fit the mindset of current victim-blammers (e. g. "women take and share their private photos or videos to special men in their life to please them"). Besides the practical application, the study's findings contribute to the ongoing debate over the theoretical soundness of Moral foundations theory because holding less progressive moral foundations, which are exclusively proposed by this theory, leads to an apology for violence.

Keywords: individual differences, victim-blaming, conservatism, ambivalent sexism, moral foundations

INCREMENTAL CONTRIBUTION OF AMBIGUITY INTOLERANCE OVER
PERSONALITY DIMENSIONS AND WORK-FAMILY CONFLICT IN PREDICTING
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The relations among personality, work-family conflict, and mental health have been extensively discussed in the literature. Available evidence suggests that ambiguity intolerance (AI) represents a vulnerability factor for depression and affects psychological flourishing (PF), but there is little to no evidence whether AI has an incremental contribution in predicting these variables above personality and work-family conflict. We tried to give some of the answers to these questions. The sample was convenient consisting of 925 employed persons from Serbia, and after we removed multivariate outliers and participants with more than 10% of missing values, was reduced to 846 (65% female) participants ($M_{age} = 40.60$, $SD_{age} = 11.18$). The following instruments were used: Brief HEXACO Inventory (BHI-24) (α ranging from .21 to .51), Work-Family Conflict (WFC) ($\alpha = .88$) and Family-Work Conflict (FWC) ($\alpha = .88$) scales, Psychological Flourishing Scale (PFC) ($\alpha = .87$), Patient Health Questionnaire (PHQ-9) ($\alpha = .85$), and Short Ambiguity Intolerance Scale (SAIS-7) ($\alpha = .70$). We conducted two hierarchical regression analyses with Depression and PF as the criterion variables. In both cases, the first block consisted of sociodemographic variables, HEXACO basic personality traits, work-family (WFC) and family-work (FWC) conflict dimensions, while AI was in the second block. Some of the values on the sociodemographic variables were missing and were not imputed, so regression analysis was done on the sample of participants without missing values. Both models explained a significant amount of variance. AI demonstrated small incremental value in predicting both Depression, [$F_{ch}(1, 716) = 6.55$, $p = .011$, $\Delta R^2 = .007$, $\beta = .09$], and PF [$F_{ch}(1, 716) = 21.20$, $p < .001$, $\Delta R^2 = .021$, $\beta = .15$]. The final model explained 21.7 % of variance of Depression, [$F(14, 716) = 14.14$, $p < .001$], and 30.5% of variance of PF, [$F(14, 716) = 22.43$, $p < .001$]. AI has a significant unique contribution in predicting Depression and PF. AI was a positive predictor of PF which was not in line with theoretical expectations. We discussed possible explanations of this finding, data structure, method effects, and the complex nature of relations between AI and PF. We tried to give perspective on the topic in the context of personality, WFC, and AI by including both positive and negative indicators of mental health. However, results regarding the relations of AI and PF should be treated with caution.

Keywords: ambiguity intolerance, personality, depression, psychological flourishing, work-family conflict

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SHAALA-22: CONSTRUCTION, PSYCHOMETRIC CHARACTERISTICS AND VALIDATION OF QUESTIONNAIRE FOR ACADEMIC SELF-HANDICAPPING

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Academic self-handicapping (ASH) refers to usage of self-handicapping strategies in order to preserve self-esteem by externalizing the causes that could lead to potential failure in academic context. The aim of this study was to validate the SHAALA-22 which intends to measure ASH. The items were generated to reflect the most frequently discussed ASH strategies found in the literature. Convergent validity was tested with instruments HEXACO-60 (specifically, with Conscientiousness), Self-Liking and Self-Competence Scale (SLCS, 16 items) and Self-Handicap Assessment Questionnaire (SH, 34 items) which assesses four types of self-handicapping (External handicaps in interpersonal relationships (EIR), Internal handicaps in interpersonal relationships (IIR), Internal handicaps in achievement situations (IAS), External handicaps in achievement situations (EAS)). Divergent validity was tested by correlation analysis with the traits of Honesty, Emotionality, Agreeableness, Extraversion, and Openness. Regarding diagnostic validity, we expected no differences between males and females, but expected that pupils would have higher scores than students on SHAALA-22. Subjects were recruited using the snowball method. Total of 249 participants (69.9% female), aged 15-51 years ($M = 19.35$, $SD = 3.31$), completed the questionnaires. The method conducted for exploratory factor analysis was Principal components analysis by the means of which we identified one component that accounts for 27.85% of total variance. Factor analysis indicated that it's justified to use the total score on the instrument ($\alpha = .871$, $KMO = .933$, $H^2 = .626$). The following significant correlations were obtained between the summary score of SHAALA-22 and the subscales of the used instruments: with Conscientiousness ($r = -.532$, $p < .01$), with Honesty ($r = -.234$, $p < .01$), with Extraversion ($r = -.241$, $p < .01$), with Agreeableness ($r = -.141$, $p < .05$), with Self-Liking ($r = -.342$, $p < .01$), with Self-Competence ($r = -.432$, $p < .01$), with EIR ($r = .267$, $p < .01$), with IIR ($r = .273$, $p < .01$), with IAS ($r = .64$, $p < .01$), with EAS ($r = .409$, $p < .01$). No significant differences in ASH were observed between males and females, nor between students and pupils. The obtained results indicate good psychometric characteristics of the test and confirm its convergent and discriminant validity, opening new theoretical and practical questions related to this construct.

Keywords: academic self-handicapping, self-handicapping, questionnaire construction, questionnaire validation

EFFECTS OF COVID-19 CONTEXT-RELATED CHARACTERISTICS AND
PERSONALITY TRAITS ON PERCEIVED RISKS OF COVID-19 PANDEMIC

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Recent studies revealed various factors that impact behavior during the COVID-19 pandemic. Perceived risk stands out as one of the most important factor. This study aimed to explore the effects of both COVID-19 context-related characteristics (beliefs in conspiracy theories and fear of coronavirus) and personality traits (HEXACO, selfishness and Dark Tetrad traits) on perceived risks during the pandemic. As pre-analysis, relationships between perceived risk of COVID-19 and compliance with protective measures were explored. A study was conducted from December 2020 to January 2021 on 372 participants (48.4% males), aged between 18 and 70 ($M = 27.14$, $SD = 11.06$). Participants completed a new COVID-19 Risk Perception Scale, COVID-19 Protective Behaviors Scale, 2 items from the Fear of the Coronavirus Scale, Conspiracy Theories about COVID-19 Scale, Brief HEXACO Inventory, Selfishness Questionnaire (adaptive, egoistic and pathological), Dark Triad Dirty Dozen and Assessment of Sadistic Personality. Parallel analysis on the COVID-19 Risks Perception Scale resulted in two factors and after the principal axis and promax rotation, factors were named as perceived global risk (GR; refers to systematic and economical risks, e.g., health system collapse) and perceived health risk (HR; e.g., getting infected by a virus). The correlation between the factors was .42. Both factors showed significant and low correlations with compliance with protective measures (.18 and .16). Hierarchical regression analysis with global and health risk as a criterion was conducted in 4 steps. In the 1st step gender and age were entered as control while context-related characteristics, HEXACO, Dark Tetrad traits and selfishness facets were entered in separate steps, respectively. Results showed that a set of used predictors explained 16.8% of GR and 20.2% of HR. Furthermore, GR could be predicted by both context-related factors, fear of coronavirus dominantly ($\beta = .26$, $p < .001$) and beliefs in COVID-19 conspiracy theories ($\beta = .13$, $p < .05$). Among personality traits, only Honesty-Humility ($\beta = .13$, $p < .05$) had a significant effect in a positive direction. Perception of HR could be predicted based on the female gender ($\beta = .19$, $p < .001$), fear of coronavirus ($\beta = .16$, $p < .01$), Honesty-Humility ($\beta = .13$, $p < .05$), Emotionality ($\beta = .15$, $p < .05$), narcissism ($\beta = .13$, $p < .05$) and adaptive selfishness ($\beta = .30$, $p < .001$), all in a positive direction and on pathological selfishness ($\beta = -.22$, $p < .05$) in a negative direction. Overall, it can be concluded that both COVID-19 context-related and personality traits contribute to the prediction of risk perception.

Keywords: COVID-19, risk perception, HEXACO, selfishness, Dark Tetrad

THE PATH TO THE „HAPPILY EVER AFTER“: THE ROLE OF LOVE STYLES IN THE QUALITY OF THE RELATIONSHIP

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A quality relationship can be the path to our „happy end“ in love - do love styles play one of the important roles on that path? The Color Wheel Theory of love is an idea created by psychologist John Alan Lee that describes six styles of love and each of them represents a different approach in love relationships - Eros, Ludus, Storge, Pragma, Mania and Agape. The aim of this study was to examine whether the quality of a relationship can be predicted based on love styles. The sample consisted of 230 students ($M = 52$; $F = 178$) of the University of Nis, aged 18-31 ($M = 23.15$, $SD = 2.67$) who were in heterosexual love relationships. The instruments used in this research were: The Love Attitude Scale: Short form ($\alpha = .43$ to $.85$) and Perceived Relationship Quality Questionnaire ($\alpha = .25$ to $.81$; total $\alpha = .91$). The quality of the relationship was viewed in this research as a global concept, even though it is a complex phenomenon that consists of satisfaction, commitment, intimacy, trust, passion, and love. The statistical procedure included multiple regression analysis as well as correlation analysis. The results of multiple regression analysis showed that the quality of the relationship could be predicted on the basis of love attitudes. The model was statistically significant [$R^2 = .50$, $F(6, 223) = 37.77$, $p < .001$], Eros ($\beta = .61$, $p < .001$) and Ludus ($\beta = -.25$, $p < .001$) were significant predictors. Eros showed a statistically significant positive correlation with all the components that create a quality relationship [satisfaction ($r = .56$, $p < .01$), commitment ($r = .46$, $p < .01$), intimacy ($r = .59$, $p < .01$), trust ($r = .30$, $p < .01$), passion ($r = .59$, $p < .01$), and love ($r = .55$, $p < .01$)]. In contrast, Ludus demonstrated a statistically significant negative correlation with these components [satisfaction ($r = -.28$, $p < .01$), commitment ($r = -.42$, $p < .01$), intimacy ($r = -.30$, $p < .01$), trust ($r = -.22$, $p < .01$), passion ($r = -.13$, $p < .01$), and love ($r = -.43$, $p < .01$)]. We concluded that love attitudes are important variables when predicting the quality of a relationship. This research demonstrated that individuals with Eros love style who have intense emotional experience, described as passionate and strong physical attraction and commitment to the romantic partner, tend to have quality relationships, unlike people with Ludus love style who perceive love, primarily, as a desire to have fun with each other.

Keywords: relationship quality, love styles, Eros, Ludus

ADVERSE CHILDHOOD EXPERIENCES AND THE DIMENSIONS OF THE MORAL FOUNDATIONS THEORY

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Adverse childhood experiences (ACEs) are disadvantageous early experiences that occur before becoming a legal adult and include various aspects of neglect, abuse, and family dysfunction. Previous research showed that ACE score correlates with the propensity for antisocial behavior, including criminality. There is limited evidence of the correlation between ACE and decreased moral sensitivity, which could be one of the mechanisms underlying the link between ACEs and antisocial behavior. This research aimed to explore the relationship between the ACE score and the comprehensive set of moral judgment criteria or “foundations”, as postulated by the Moral Foundations Theory (MFT). The survey was conducted on a sample of 432 participants (71% women; average age: $M = 25.91$, $SD = 9.16$ years) from B&H. ACEs were measured using the ACE-14 questionnaire. The moral criteria were measured by the MFQ-30 questionnaire, which comprises five basic moral criteria/foundations according to MFT, which are “intuitions” people use while making moral reasoning and judgments. The five criteria can be further grouped into two general factors: Binding (which includes: ingroup loyalty/betrayal, authority/subversion, and sanctity/degradation moral foundations), and Individualizing (which includes: care/harm and fairness/cheating moral foundations). We found small, but significant negative correlations between ACE score and all of the Binding facets of morality: $r = -.24$ ($BF_{10} > 100$, $p < .001$) with loyalty, $r = -.22$ ($BF_{10} > 100$, $p < .001$) with sanctity, and $r = -.18$ ($BF_{10} = 69$, $p < .001$) with authority. There were no correlations between the ACE score and the individualizing moral facets, albeit with some indications of possible negative correlation with the fairness criteria: $r = -.10$ ($BF_{10} = 0.55$, unadjusted $p = .035$). These results imply that higher ACEs are related with a slight but significant decrease in reliance on moral criteria that aim to maintain social unity, i.e., reflect the importance of belonging to groups and institutions. In other words, the sense of “broken trust” in family and society, which allowed the ACEs to happen, could diminish the perceived importance of community norms to some degree. This implies that it might be of some merit to explore the dimensions of the moral foundation theory as potential mediators between the ACEs and undesirable social and criminal behaviors in future research.

Keywords: adverse childhood experiences (ACEs), moral foundations theory (MFT), binding moral judgment criteria, individualizing moral judgment criteria

A BRIEF PICTORIAL INSTRUMENT OF THE EMOTIONAL ASPECT OF
CORONAPHOBIA (PICT-CORONA)

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In this exploratory study, we developed the Brief Pictorial Instrument of the Emotional Aspect of Coronaphobia (Pict-Corona), a new instrument for measuring the emotional aspect of coronaphobia proposed as an alternative to self-report measures. This instrument consists of 5 photos showing non-compliance with protective measures (i.e., not wearing a mask, coughing or not maintaining physical distance) along with ratings of the level of feeling upset by each of them. When testing construct validity, we expected to find high correlations with emotional and behavioral aspects of coronaphobia (compliance with protective measures) and lower correlations with other aspects of coronaphobia. We anticipated a significant incremental contribution in the explanation of the behavioral aspect of coronaphobia over and above the remain aspects, including self-report of the emotional aspect and other factors that have often been linked to this kind of behavior (e.g., demographics, personality traits, and knowledge about the coronavirus). The sample included 371 participants (56.5% female, $Mage = 29.08$, $SD = 9.45$). In addition to non-compliance photo ratings ($\alpha = .86$), ratings of 5 photos showing compliance with protective measures were included as controls in order to check whether the medium of the instrument (visual) might affect the results or its content. Furthermore, we applied the Mini IPIP, Knowledge About the Coronavirus, the COVID-19 Protective Behaviors Scale, and a measure of 3 coronaphobia aspects (emotional, physiological, and cognitive) obtained via a joint factor analysis of 11 scales measuring various aspects of coronaphobia. The correlation of Pict-Corona with the emotional aspect of coronaphobia was .50, with the physiological aspect was .26, with the cognitive aspect was .34, and with protective behaviors was .57 (all $p < .001$), which confirmed its construct validity. A hierarchical regression analysis showed a significant incremental contribution of Pict-Corona in the prediction of protective behaviors ($\Delta R^2 = .07$, $\Delta F(1.333) = 49.17$, $p < .001$; $\beta = .32$, $p < .001$), over and above demographics, personality traits, knowledge about coronavirus and three aspects of coronaphobia (emotional, physiological/somatic, and cognitive). The ratings of control photos did not make a significant incremental contribution, indicating that the content of the photos is relevant. The results show that Pict-Corona is a valid measure of the emotional aspect of coronaphobia and could serve as an alternative way to measure this aspect.

Keywords: COVID-19, coronaphobia, upset, fear, protective behaviors

EFFECTS OF POLITICAL ORIENTATION AND DARK TRIAD TRAITS ON PRESIDENT LEADERSHIP STYLE PREFERENCES

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With the rise of “dark leaders” among presidents, this research aimed to explore the effects of Dark Triad traits and political orientation on presidential leadership style preferences. Since political orientation is expected to be the main predictor, we explored the incremental contribution of dark traits over and above political orientation. Sample included 233 young voters ($M = 21.95$, $SD = 3.10$, 56.2% men). Data were collected on the eve of the parliamentary election in Serbia (June 21st, 2020). Presidential leadership preferences were measured using vignettes that described 4 styles: charismatic or coaching-inspirational, avoiding or distrustful-withdrawn, autocratic or directive-authoritarian, and democratic or yielding-participative leadership. For each vignette participants had to answer 5 questions related to their preference for that style (e.g., Would you want this person to be your president?). Political orientation was measured using 3 questions (economic left-right, progressive-conservative, importance of religious values in politics) with higher scores indicating a more right-wing orientation. Dark traits were measured using the Serbian adaptation of the Short Dark Triad. A hierarchical linear regression was conducted with age and gender (control variables; 1st block), political orientation (2nd block), and dark traits (3rd block). Results showed that dark traits explained 6% of the incremental variance of autocratic and 5% of charismatic style, with psychopathy showing a positive relation with the preference for an autocratic ($\beta = .16$, $p = .04$), and Machiavellianism a negative relation with the preference for a charismatic style ($\beta = -.15$, $p = .05$). Although right-wing political orientation was positively related to the preference for an autocratic style ($\beta = .13$, $p = .04$), with the addition of dark traits it became nonsignificant ($\beta = .11$, $p = .09$). The preference for an avoiding style was predicted by male gender ($\beta = -.14$, $p = .05$) and psychopathy ($\beta = .16$, $p = .05$), although the 3rd block did not show a significant contribution (2%). Finally, only left-wing political orientation ($\beta = -.15$, $p = .03$) showed a significant contribution in the explanation of the preference for a democratic style. Although narcissism had a significant positive correlation with the preference for an autocratic style, it did not show a significant contribution in the regression analysis. Results showed that among dark traits, psychopathy and Machiavellianism explained significant incremental variance in the explanation of leadership preferences.

Keywords: president, political leaders, leadership style, leadership preferences, political orientation, Dark Triad

DEVELOPMENT AND VALIDATION OF THE APOPHENIA QUESTIONNAIRE

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Apophenia is defined as a propensity for perceiving meaningful patterns where there are none or as a tendency for type I errors, i.e., finding meaning where none exists. Apophenic experiences occur in all sensory modalities (e.g., visual and auditory apophenia) and beliefs (e.g., temporal apophenia, i.e., finding connections between independent events; hypermentalization, i.e., attributing mental states to objects which do not possess them). Since apophenia is traditionally operationalized through objective tasks which only measure it in one sensory modality our goal was to construct a self-report measure of apophenic tendency in the general population using formerly listed forms of apophenia as indicators. Validation of the APF scale was conducted on 251 participants, age range of 18 to 83 years ($M = 25.12$, $SD = 9.24$), consisting of 71.3% female participants, 26.7% male, and 2% undeclared. Alongside the APF (20-item 5-point Likert scale; $\alpha = .88$), participants were also given the following inventories: Modified Snowy Picture Task (24-item test of visual apophenia; $\alpha = .76$), DOT Object 2020 (30-item test of visual apophenia; $\alpha = .93$), and Delta-20 (20-item 5-point Likert scale of disintegration; $\alpha = .89$); HEXACO-60 (60-item scale of six basic personality traits; trait average $\alpha = .78$). Predictive validity of APF was examined by Likert scale bibehavioral items which measure superstitious beliefs (5) and vaccination attitudes (1). Latent structure of APF was examined via factor analysis with principal axis factoring and promax rotation, and Velicer's MAP test for factor retention. Factor analysis yielded a two-factor solution: General and Temporal apophenia ($r = .424$, $p < .001$). The factor of General apophenia was saturated by items from every indicator with the exception of temporal apophenia, which was singled out as a separate factor. The scale showed good convergent validity with both General ($r = .40$, $p < .001$) and Temporal apophenia ($r = .146$, $p < .05$) relating to the Modified Snowy Picture Task and to disintegration (General– $r = .53$, $p < .001$; Temporal– $r = .28$, $p < .001$). The discriminant validity was demonstrated against HEXACO-60 (General– $r = .037 - .186$; Temporal– $r = .006 - .167$). Both General and Temporal apophenia successfully predicted behavioral tendencies for superstitious beliefs ($R^2 = .034 - .145$), and vaccination attitude ($R^2 = .038$). Considering latent structure, psychometric and validity measures, we conclude that psychometric quality and validity of APF are sufficient.

Keywords: apophenia, validation study, factor analysis, hypermentalization, Modified Snowy Picture Task

EDUCATIONAL PSYCHOLOGY

TEACHERS' DIGITAL COMPETENCES – THE ROLE OF PERSONAL AND CONTEXTUAL FACTORS

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One of the consequences of the COVID19 pandemic is the requirement for teachers to make extensive use of various digital and on-line tools for distance teaching and learning. It follows that development and improvement of digital competences is essential for teachers. The aim of this study was to explore the differences in teachers' digital competences in relation to personal (age, years of experience, subject, continuous professional development (CPD)) and contextual factors (type and size of schools, colleagues and school support). The questionnaire was based on the European Digital Competence Framework for Educators (DigCompEdu), including a self-assessment instrument which distinguishes 22 teacher digital competences and six proficiency levels. The questionnaire was administered online via EU Survey. The study sample consisted of 689 in-service teachers from 27 secondary schools (vocational and general) in Serbia. Data analyses were conducted using IBM SPSS Statistics Software (v.21). The comparison of means were conducted (one way ANOVA test) in order to explore the differences in teachers' digital competences regarding their proficiency score. The results show that the teachers in the age group 25-29 years ($M=53.51$) obtained the highest proficiency score, while the lowest score was obtained by the teachers in age group 50-59 years ($M=47.91$) and those who had 60+ years ($M=46.24$, $F(4)= 4.53$, $p < .001$). Teachers who teach computer science, informatics and programming have the highest proficiency score in comparison to teachers of all other subjects ($M=63.14$ and $M=49.66$, $F(1)= 60.11$, $p < .001$). Teachers who had more opportunities to participate in CPD have a higher proficiency score. For example, teachers who participate in online training many times had highest proficiency score while teachers who reported that they have not participated in CPD have the lowest proficiency score ($M=61.26$ and $M=45.77$, $F(3)= 29.62$, $p < .001$). Teachers from general schools have a higher proficiency score than those from vocational schools ($M=53.94$ and $M=48.93$, $F(1)=20.60$, $p < .001$). There is no statistical difference regarding teaching experience, school size or colleagues support. The results stress the importance of the CPD for the advance of teachers' digital competence, especially for those at the end of their professional carrier and teachers from vocational schools.

Keywords: DigCompEdu, teachers, self-assessment, continuous professional development, digital competences

THE RELATIONSHIP BETWEEN EXTERNALIZING BEHAVIOR AND SCHOOL, FAMILY, AND COMMUNITY BONDING

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Externalizing behavior, when present in adolescence, is a strong risk factor for more severe problems in adulthood, such as involvement in crime and addiction behaviors. Social bonding is recognized within the leading theoretical and practical prevention frameworks as a central

protective factor that affects externalizing behavior in children and young people. Guided with the premises that positive social bonding to family, school and community reduces the risk of developing externalizing behavior, a study was conducted during first half of the 2020/2021 school year with an aim of exploring the predictive strength of positive social bonding on externalizing behavior of elementary school students. Research data were collected on a sample of 637 students (51% of boys) aged 12 to 15 ($M = 13.16$, $SD = 1$) from six Belgrade primary schools. The Communities That Care – CTC Youth Survey (Arthur et al., 2002) was used to examine positive social bonding in the family, school and community domain. Scale for Externalizing problems (combined scales Behavior Problems and Hyperactivity) was taken from the Strengths and Difficulties Questionnaire (SDQ-Srp), version for adolescents' self-assessment (S 11-16). The results of the research show that, in the regression model, positive social bonding explains 23% of the variance of externalizing behavior ($F = 57.38$, $df1 = 3$, $df2 = 584$, $p < .001$, $R^2 = .23$), with strongest individual contribution from school bonding ($\beta = .27$, $p = .000$), followed with positive social bonding to family ($\beta = .23$, $p = .000$), while bonding to the community did not prove to be a significant predictor of externalizing behavior in students ($\beta = .07$, $p = .12$). Based on the research findings, it can be concluded that there are confirmations of protective effects of bonding in family and school, but they lack in the community domain. Based on the obtained results, general preventive efforts should be aimed at fostering positive family and school social bonding. Research data also suggests that other factors should be taken into account, considering that family and school bonding covers for 23% of the variance of externalizing behavior in students, leaving room for working on a number of other factors in efforts to prevent externalizing behavior.

Keywords: bonding, externalizing behavior, protective factors, primary school students

THE EFFECT OF STUDENTS' PERCEPTION OF TEACHING PRACTICES AND PARENT'S EDUCATIONAL STATUS ON STUDENTS' SELF-EFFICACY IN TELEVISED INSTRUCTION

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The COVID-19 pandemic induced distance learning worldwide. To overcome the „digital divide“ between students from socio-economically advantaged and those from disadvantaged families and schools, 68% of the 127 countries for which data are available (UNICEF, 2020) used televised instruction. Given the indirect and asynchronous nature of televised instruction, it brought concerns that students whose parents are less-educated can lag behind those from more educated parents. However, given the international consensus that quality of teaching is a vital factor of students' achievements and motivational beliefs (Hattie, 2009, Ladd and Sorensen, 2015; Muijs & Reynolds, 2000; OECD, 2019; Rivkin, Hanushek and Kain, 2005; Scheerens, 2016) we wondered if the quality of teaching practice could compensate for those inequalities? Considering these two presumptions, the main objective of this study is to examine the relative predictive effect of students' perception of teaching practices in TV classes (SPTP) and parents' educational status (PES) on one of the most important students outcomes – academic self-efficacy. The sample consisted of 1202 students from primary (23.84% of the sample) and lower secondary education (76.15% of the sample). The students evaluated the frequency of ten teaching practices in the science and humanities

classes they were just watched, as well as their self-efficacy about the subject of the class. We used a general measure of students' self-efficacy about the subject (OECD, 2009). PES was measured as the average schooling years of parents and SPTP was measured by a composite scale made of ten statements. The scale is somewhat similar to the *Students' Views on Engaging Teaching scale* from TIMSS 2015 but adapted for televised instruction. We conducted hierarchical multiple regression, starting by adding PES as the first predictor, and in the next step, we added SPTP. The R-square change (increment) from Model 1 ($F(1201) = 29,51, p < .00, R^2 = .024$) to Model 2 ($F(1201) = 107,10, p < .00, R^2 = .151$) indicates that students' self-efficacy is more affected by their perception of teaching practices than family educational level, although both predictors are significant. The results indicate that teachers can nurture students' self-efficacy even in indirect and asynchronous televised instruction.

Keywords: televised instruction, academic self-efficacy, teaching practices, parents' educational status

DIFFERENCES IN THE LEVEL OF EXPRESSION OF POSITIVE ATTITUDE TOWARDS INCLUSION BETWEEN EDUCATORS AND STUDENTS OF VOCATIONAL STUDIES FOR EDUCATORS

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Inclusion in practice often means only the physical involvement of the child, but not his actual presence in the activities. The aim of the research was to examine the attitude of educators of preschool institutions in Serbia and students of vocational schools for educators towards inclusion, as well as to examine the differences between these two groups of respondents. The difference in the level of expression of a positive attitude towards inclusion in relation to sociodemographic and control variables of research (age, education, number of attended training, institution where he works, experience in working with children with developmental disabilities) was also examined. Attitudes towards inclusion were measured through an adapted validated scale used in the previous research, that consisted of three subscales (Cognitive component of attitude, Conative component of attitude, and Sense of competence of educators). The scale ranges from 1 to 5. The research was conducted on a sample of 155 respondents, of which 102 (65.8%) are educators, while 53 (34.2%) are students. There were more female respondents in the sample (150; 96.8%) and the average age of the respondents was 35.28 (range 18-60). The research showed that the respondents have a positive attitude towards inclusion in the global ($M = 3.60; SD = 0.51$), but also on the subscales ($M = 3.09; SD = 0.50; M = 4.10; SD = 0.74$ and $M = 3.85; SD = 0.69$). Furthermore, the conducted analyses showed that there is no statistically significant difference between educators and students in the level of expression of a positive attitude towards inclusion, nor on the subscales. When it comes to control and sociodemographic variables, differences were obtained on the Cognitive component ($\chi^2 = 11.77; df = 3; p = 0.01$) and on the whole scale Attitude towards inclusion ($F = 2.54; df = 3; p = 0.05$), in the case of the number of trainings that respondents attended. Respondents who attended 5-10 trainings compared to them who didn't attend any, and those who attended up to 5 (at the level $p = 0.01$) have more knowledge of what inclusion represents. Respondents with a smaller number of trainings have a more positive attitude towards inclusive (respondents with 5-10 trainings vs. without

trainings and those with up to 5 (at the level $p < 0.05$). Furthermore, the difference on the same subscale and scale was obtained when it comes to the institution in which the respondent works (Cognitive component $\chi^2 = 7.15$; $df = 2$; $p = 0.03$; Attitude towards inclusion $F = 3.03$; $df = 3$; $p = 0.05$). In both cases, respondents from a private preschool lead. They have more knowledge about inclusive education and their attitude is more positive (the level $p < 0.05$). Educators who have experience with a child with developmental difficulties feel more competent ($U = 2316.00$, $p = 0.02$). The connection between the age and education and the attitude towards inclusive (and its subscales) has not been obtained. The main conclusion that emerges here is that earlier experience with child with developmental difficulties and the number of training that the practitioner attends is a key element that shapes the attitude towards inclusion.

Keywords: inclusion, educators, high school students for educators, training, attitude

STUDENTS' EXPERIENCES OF THE EFFECTIVENESS OF THE TEACHING PROCESS DURING THE SHORTENED LIVE SCHOOL CLASSES FOLLOWING THE ONLINE TEACHING PHASE OF THE COVID-19 PANDEMIC

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During the 1st wave of the COVID-19 pandemic schools across the world were closed and classes went online. Educational experiences from that period are decently described in the current literature. However, experiences from the subsequent pandemic stages are less understood, partially due to countries adopting different strategies of transitioning back from the online classes. In the Republic of Srpska (RoS) specifically, in the 2nd semester of 2021/22, students were sent back to schools to shorten 20-30 instead of standard 45-minute live classes. It is unknown how students perceived the education process during this period. Thus, to better understand some of the relevant students' experiences and fears, during February 2021 we online surveyed 673 RoS' high school students (65.8% girls) of all four grades. In this paper we focused on the students' fears about being able to get good grades & their satisfaction with the knowledge received during the shortened classes, and their perceived chances of being competitive on job markets or universities with that knowledge. This was measured via five standard Likert-type items. Additionally, students were asked a single question directly comparing their opinion about shortened classes to pre-pandemic full-length classes (where: 1=shortened classes are much worse, 3=about equal, 5=shortened classes are much better). Since answers on a five-item set were highly intercorrelated, they were reduced to a single latent factor dubbed 'Dissatisfaction with the knowledge received during shortened classes' (55.8% explained common item variance). The average value of this dimension was 2.56 ($SD=0.88$), i.e., significantly below the theoretical mean value of 3.00 ($d=0.50$, $p<.001$). This suggests a moderately low level of students' dissatisfaction. On individual item level, students were the least worried about obtaining good grades during shortened classes ($M=2.00$, $SD=1.19$) and the most worried about getting insufficient knowledge to succeed at university ($M=2.82$, $SD=1.24$). Students' opinion of shortened classes compared to full-length classes before the pandemic was significantly below 3.00

($M=2.42$, $SD=1.19$; $d=0.58$, $p<.001$), i.e., below the cutoff for equal satisfaction with shortened and full-length classes. Taken together, these results show that RoS' high school students were only slightly dissatisfied with the shortened classes that took place in the transitional period following the online teaching phase of the pandemic.

Keywords: COVID-19 pandemic, shortened live school classes, high school, Republic of Srpska

OPINIONS OF STUDENTS, TEACHERS, AND PARENTS ABOUT ONLINE TEACHING IN HIGH SCHOOLS DURING THE INITIAL STAGES OF THE COVID-19 PANDEMIC

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Online teaching was implemented for the first time in Republic of Srpska (RoS) in Mar 2020 when the COVID-19 pandemic hit. This mixed-method research aimed to examine the opinions about the online teaching process in the RoS during the initial stages of the pandemic (i.e., Apr-June 2020) from the perspective of high school students ($N=540$). Additionally, students' perspective was compared to perspectives of high school teachers ($N=48$), and parents of high school children ($N=54$). Participants rated their opinions via online survey on 22 Likert items (mainly measuring perceived difficulties and fears regarding online teaching), which were supplemented with three open-ended questions (about the experiences with implementation and suggestions for improvement of online teaching). The results show that students (1), compared to teachers (2), and especially compared to parents (3), achieve higher average scores in several aspects, most notably related to: a) the amount of obligations students received from teachers during online classes (1-2: $g=1.22$, $BF_{10}>100$; 1-3: $g=1.08$, $BF_{10}>100$), b) fear of students "breaking under pressure" due of higher school workload (1-2: $g=0.39$, $BF_{10}=2.83$; 1-3: $g=0.72$, $BF_{10}>100$), c) perceived difficulty of students mastering the school material in the modality of online teaching (1-2: $g=0.54$, $BF_{10}=51.23$; 1-3: $g=0.58$, $BF_{10}>100$), d) perceived students' relief ("battery charging") due to not having to go to school (1-2: $g=0.55$, $BF_{10}=37.90$; 1-3: $g=0.61$, $BF_{10}>100$). Teachers, compared to parents, but also students, more emphatically believed that high school students did not have a quiet place at home during the pandemic where they can follow online classes (2-3: $g=0.86$, $BF_{10}>100$; 2-1: $g=0.69$, $BF_{10}>100$). The most common suggestion given by students, but also echoed by teachers and parents, was to make online teaching more interactive and engaging. However, students report that the cumulative frequency of using platforms that do not have direct video calling and interaction functionalities (e.g., Google Classroom – 69%, email – 49%,) was much higher than the frequency of platforms with these features (e.g., Zoom – 29% or Google Meet – 7%). This research provides several useful insights that could be used to inform and build a more optimal approach to the online teaching process in possible new extraordinary circumstances in the future, that would force the teaching process back to online modality again.

Keywords: COVID-19 pandemic, online classes, high school, Republic of Srpska, quantitative-qualitative mixed-method research

PROBLEMS OF ROMA CHILDREN FROM BELGRADE WHO ARE AT RISK OF
DROPPING OUT OF PRIMARY SCHOOL

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Roma population in Serbia and Europe continues to face complex problems. One of them is poor access to quality education, high absenteeism, and school drop-out rate that consequently lead to poorer chances for social, cultural, economic, and political inclusion into the mainstream population, and this pattern prevails for generations. With the help of the field workers in ADRA Serbia (who work with children in Roma substandard settlements), we compiled a questionnaire that contained 20 (mostly a Likert scale of 1 to 5) questions, in order to explore the prevalence of various psychosocial problems of children who are in risk for school drop-out, and to try to identify possible reasons for their absence from school. The research included pupils who are not formally withdrawn from school but do not attend classes for more than two months. The sample included 84 respondents (53.6% female) from 12 to 15 years of age ($M = 13.7$; $SD = 0.58$), enrolled in public primary schools in Belgrade. Data were collected in the fall of 2019. The results showed that over 50% of respondents reported that they were hindered from school as they have to take care of younger siblings ($M = 3.17$; $SD = 1.07$). This was more frequent among girls ($F = 104.99$; $p < .001$). 77.4% of respondents stated that they did not have decent clothes and shoes for school ($M = 3.54$; $SD = 0.87$). For over 38% of them, poor knowledge of the Serbian language presented a significant problem for attending school ($M = 2.99$; $SD = 0.99$). Over half of the respondents think that school cannot help them to find a good job ($M = 3.31$; $SD = 0.85$). Poor social relations are another aspect of the problem: 38.1% of respondents stated that teachers treated them badly ($M = 2.92$; $SD = 0.92$); also, they frequently stated that children from the general population treated them badly at school (48.8%) and out of school (42.8%). On the other hand, slightly more than 40% of respondents stated that they socialize with children from the general population, and only about 20% of Roma children stated that they had peer support in learning ($M = 2.64$; $SD = 0.82$). The findings suggest that a large number of these children have a problem with the attitude that teachers and children from the general population have towards them, and that the risk for their dropout probably increases due to their poor financial status, as well as due to their family situation. The findings also suggest the need for extracurricular classes of Serbian language for Roma children who do not speak Serbian fluently.

Keywords: school drop-out, Roma children, substandard settlements, primary school

HOW OFTEN DO TEACHERS USE DIGITAL TECHNOLOGIES IN THEIR WORK? -
THE ROLE OF SELF-CONFIDENCE AND TECHNOLOGICAL-PEDAGOGICAL
KNOWLEDGE

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Due to the COVID 19 pandemic many educational systems worldwide shifted to remote education, which required teachers to use digital technologies (DT) more actively in their work. This paper sought to investigate how often teachers use DT in their work and to determine if the self-confidence in using DT and technological pedagogical knowledge relate to the frequency of using DT. Additionally, we compared the frequency of using DT among teachers of different work and professional development experience. Participants were 100 Serbian teachers (85% female, 41% over 16 years of work experience) who filled in the online questionnaire including SELFIE subscale on self-confidence (4 items, 1-5 Likert scale), TPACK subscale on the technological pedagogical knowledge (5 items, 1-5) and the scale created for this study addressing the frequency of using DT in different domains of teacher work (9 items, 1, indicating almost never – 5, indicating almost all the time). They also reported the number of hours of professional development in usage of DT they collected in the last two years. Results indicate that teachers use DT relatively often ($M = 3.56$, $SD = .67$), predominantly to motivate students and evoke positive emotions while learning. Teachers show a similar degree of self-confidence ($M = 3.91$, $SD = .83$) and technological pedagogical knowledge ($M = 3.6$, $SD = .62$). Frequency of using DT is positively correlated with both self-confidence in using DT ($r(95) = .379$, $p < .001$) and technological pedagogical knowledge ($r(98) = .447$, $p < .001$). A model with self-confidence in using DT and technological pedagogical knowledge as predictors explains 23.2% of variance in frequency of using DT; however only technological pedagogical knowledge represents a significant predictor ($t = 4.273$, $p < .001$, $r = .41$). No significant differences in frequency of using DT in teaching were found between teachers of different work and professional development experience. Our results show that teachers' knowledge of how various technologies can be used in teaching significantly determines DT-related teaching practices, which is in line with previous studies. Self-confidence in using DT plays a less important role, probably because our measure of this construct implies more practical use of DT in both teaching and communicating, while the TPACK subscale assesses a deeper understanding of interplay between learning, teaching and technologies. Application of knowledge from continuous professional development training should be further explored.

Keywords: teachers, digital technologies, self-confidence, technological pedagogical knowledge, SELFIE

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WHERE DID HIGH SCHOOLERS FOUND SUPPORT FOR LEARNING DURING THE PANDEMIC?

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This study focused on the support of the learning process during the first wave of the COVID-19 pandemic. We specifically aimed to identify the principal support providers and describe the characteristics of their aid. We analyzed the responses of 160 high school students ($M_{age} = 16.78$; $SD_{age} = 1.067$; 77.5% female) who filled in our questionnaire at three different time points during the first wave of the COVID -19 virus pandemic, between March and early July 2020. At each time point, students answered who helped them with learning (teachers, school counselors, parents, and/or their peers) and what that support consisted of. The obtained data were analyzed both qualitatively (inductive content analysis) and quantitatively. Our findings show that during the three months of long-distance learning, students received learning support from teachers (about 85%), school counselors (7%), parents (40%), and their peers (about 90%). Regarding the content of the support, qualitative analysis of the data indicated that teachers provided learning materials, homework, working materials and audio lectures. Despite the fact that students reported to a lesser extent that they received support from school counselors, the content they received from them was diverse including topics such as learning strategies, organization of free time, how to behave in an emergency situation, mental health care advice, and service information on distance learning and Covid-19 virus. Parents provided support through helping with the learning schedule organization, reduction of household work, trying to motivate students, and increasing their interest in studying. Finally, during the first weeks, students received the most support from their peers regarding the use of digital technologies and the technical aspects of online classes. The results of this study indicate that even in emergency situations that demand reorganization of teaching and learning processes, students recognize the activities of teachers and their peers as significant support in the learning process. These findings will be discussed within the framework of sociocultural theory and role of the asymmetric and symmetric interaction in the learning process.

Keywords: covid-19, longitudinal study, high school students, long distance learning.

LEARNING STRATEGIES DURING COVID-19 PANDEMIC: HOW WELL DO THEY PREDICT SCHOOL ACHIEVEMENT AND HOW THEY DIFFER IN CLASSROOM AND REMOTE-LEARNING SITUATION?

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Covid-19 pandemic has called for urgent adaptation of the remote-learning environment that is rather different from traditional classroom setting and it has hence caused the need to modify previous academic and learning habits that are inevitably linked to school

achievement. The aim of this research was to examine which learning-strategies the secondary high-school students use during the new remote learning environment and how well do these strategies predict school achievement, while also taking into the look how these strategies differ in the newly created environment. For that purpose, we adapted four scales from the instrument MSLQ (Motivated Strategies for Learning Questionnaire; Pintrich et al., 1993). The questionnaire contains 26 questions, organized in four subscales representing different learning strategies: Elaboration, Organization, Critical thinking and Metacognitive self-regulation. In addition to these questions, students were asked to explain the difference in how they learn when classes are in schools and when they are online, if there is any. The sample collected by the snowball method was convenient, comprising 135 secondary school students – 1st to 3rd grade (82% of girls; $M=16$; $SD=6.45$), who took part in an online survey. Linear regression analysis showed that learning strategies can predict school achievement ($\beta=.375$, $t=3.590$, $p<.001$), but only Elaboration was a statistically significant predictor ($R^2=.105$; $F(4,130)=3.807$, $p=.006$). Conducted qualitative analysis of the answers to the additional (open-ended) question about the difference of learning in the classroom and remote learning situation showed that students report better attention and concentration during learning, a better understanding of learned material, better organization of classes, as well as greater engagement and greater effort during learning activities in a traditional, classroom teaching setting. Remote learning via Google Classroom was found better only for organizing free time and activities after "school time". Not only do these results indicate that elaborative learning is a prerequisite when it comes to school achievement, but they also point out that students find classroom learning environment more stimulating and beneficial, suggesting that the remote learning should be more engaging and involving.

Keywords: learning strategies, elaboration, remote learning, school achievement

FEAR OF COVID-19 IN PRIMARY SCHOOL TEACHERS: A SURVEY STUDY IN SERBIA

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The advent of COVID-19 worldwide has led to consequences for people's health, both physical and psychological, such as fear and anxiety. Following their important role in the fast adjustment of the education system, teachers are seen as a possible vulnerable category for enhanced negative consequences of this crisis. The aim of this cross-sectional study was to identify the level of fear of COVID-19 in teachers working in primary schools in Serbia and to determine whether there are any differences in fear levels according to gender, age, and working category. A total of 817 teachers (15.2% male) from public primary schools in Serbia, age from 23 to 64 ($M = 45.56$, $SD = 9.35$), took part in the study via an online survey

from February to April 2021. From the sample, 34.4% teachers teach in the first education cycle and 65.6% in the second. Teachers were contacted through email addresses of schools, including the invitation letter with information about the study, and the link to the online questionnaire. All the participants completed the survey anonymously and gave their informed online consent. Data on fear of COVID-19 were collected using the Fear of COVID-19 Scale (FCV-19S). The instrument consists of seven items, and the internal reliability of the scale was good, with a Cronbach's alpha of .84. The mean global FCV-19S score was 16.00 ± 6.06 . Female teachers ($M = 17.15$, $SD = 6.21$) express slight, but statistically significant higher levels of fear ($t(795) = 2.98$, $p < .01$, $g = 0.29$) than their male colleagues ($M = 14.50$, $SD = 5.96$). Teachers of the first education cycle ($M = 16.25$, $SD = 6.02$) express similar statistically significant higher levels of fear ($t(788) = 3.95$, $p < .001$, $g = 0.29$) than those of the second cycle ($M = 15.38$, $SD = 5.96$). Results show that age and FCV score correlate slightly positive ($r = .13$, $p < .001$). Emotional and physical responses were compared regarding these sociodemographic variables. Results show that the same differences are present in both emotional and physical response to fear of COVID-19: female teachers, teachers of the first education cycle and older teachers express slight, but statistically significant higher levels of both emotional and physical fear. Collected data can serve as a base-line for future exploration of vulnerable groups of teachers.

Keywords: fear of COVID-19, pandemic education, teachers, primary school

BENEATH THE SURFACE OF LEARNING PREFERENCES IN MUSIC EDUCATION:
THE STRUCTURE OF THE ADAPTED KANEVSKY'S POSSIBILITIES FOR
LEARNING QUESTIONNAIRE

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The education of musically gifted students is dominated by teaching as individualized practice which meets students' musical capacities and developmental needs. From this perspective, teaching starts by exploring students' preferences in terms of learning content, and ways and conditions of acquiring knowledge, as well as how a teacher can support students in acquiring expert skills and reaching high-performance levels. Because of the specific educational goals and outcomes of music education, it is expected that musically gifted students also develop learning preferences that are different from those of gifted students in other fields. Aiming to support the educators in acknowledging musically gifted students' learning preferences and integrating them into teaching practice, in 2018 we began developing a scale intended for assessing musically gifted students' learning preferences in music education. In the first step we adapted Kanevsky's Possibilities for Learning-Version 3b questionnaire into a 67-item checklist for music education context. In the second step, fine-tuning some of the items, and adding 10 more from Kanevsky's questionnaire resulted in Adapted Possibilities for Learning-Version 3b Questionnaire (APL-V3bQ). APL-V3bQ consists of 77 7-point Likert-type items which need to be answered bearing only music-related subjects in mind. From March 2021 to January 2022, a convenience sample of 204

students from the Faculty of Music in Belgrade (156 undergraduate, 48 postgraduate; 63 male, 140 female, one other; 67 from theoretical departments, 137 from performing departments) filled in APL–V3bQ administered online. Aiming to explore the latent structure of APL–V3bQ, we have conducted exploratory factor analysis on all 77 items (Maximum likelihood method, Oblimin; $N = 184$; $KMO = .75$, $\chi^2(2926) = 73132.11$, $p < .001$). Although 22 factors had eigenvalues over 1 (Kaiser’s criterion), in the final analysis, we retained five factors suggested by the scree plot (accounting for 31.42% of the variance). The factors describe students’ preferences regarding different aspects of the learning process: process of learning, $\alpha = .87$, evaluation of learning, $\alpha = .78$, content of learning, $\alpha = .85$, pace of learning, $\alpha = .75$, and autonomy in learning, $\alpha = .65$. These patterns within the data are seen as outlines of the subscales constituting APL–V3bQ. Based on the obtained results, we will discuss possibilities for further improvements of APL–V3bQ, the dominant learning preferences of musically gifted students, and the implications of those for music education of musically gifted.

Keywords: learning preference, musically gifted, education of musically gifted, scale development

PARENTAL PRACTICES RELATED TO LEARNING MATHEMATICS: DO PARENTS DIFFER?

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Parental involvement in children’s schoolwork is associated with academic achievement, enhances intrinsic motivation for learning and reduces its developmental decline. However, not every parental practice is equally beneficial. The current study is part of an international project Co-constructing mathematics motivation in primary education - A longitudinal study in six European countries (MATHMot), which focuses on children’s motivation for learning math. This research aims to identify groups of parents by the similarity of their practices related to mathematics learning and test if identified groups differ in their beliefs about mathematics ability (Dweck, 2008) and attitudes toward mathematics. The sample consisted of 153 parents of third-, four-, and five-graders, primarily mothers (79%) with higher education (80%). Three questionnaires: parental practices (18 items, 5 subscales), math attitude (9 items) and mindset (8 items, 2 subscales) set on a 4-point scale, were developed for the study and administered online. Cluster analysis (Ward’s method) and discriminant analysis showed that three groups of parents could be identified (Wilks’s $\Lambda = .19$, $\chi^2(10,153) = 247.47$, $p = .00$; Wilks’s $\Lambda = .66$, $\chi^2(4,153) = 60.94$, $p = .00$). The first group, *High achievers* (parents focused on math tasks execution and insisting on hard work), gathers 60% of the parents. They help children organize their time for learning math and teach them math-learning strategies. They rarely use practices intended to make mathematics more engaging, relatable and challenging. These practices are highlighted in the second group, labelled as *Math enthusiasts* (12%), parents oriented toward task-intrinsic practices. They try to show how fun and relevant math can be through different everyday activities. The third group, labelled as *Passive parents* (27%), rarely use any practices. The three groups significantly

differed in attitude toward mathematics ($F(2, 150) = 2.90, p = .04$). Post hoc tests show that the Math enthusiasts had a more positive attitude toward mathematics than the High achievers ($p = .02$) and the Passive parents ($p = .02$). The groups did not differ in beliefs that math ability can develop (growth mindset; $F(2, 149) = .15, p = .87$), nor in the beliefs that it is determined at birth (fixed mindset; $F(2, 149) = 1.28, p = .28$). The results are discussed from the perspective of supporting parents in becoming more aligned with patterns recognised in the *Math enthusiasts* group compared to *Passive or High achievers*.

Keywords: parental practices, mathematics, attitude toward learning mathematics, mindset

WHAT CAME FIRST? EXPLORING DIRECTIONS OF INFLUENCE AMONG ACADEMIC EMOTIONS, MATHEMATICS IDENTITY AND ACHIEVEMENT

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Although the relationship between academic identity, academic emotions, and achievement has been confirmed on numerous occasions, the direction of influence between these constructs is less clear. The current study is part of an international project Co-constructing mathematics motivation in primary education- A longitudinal study in six European countries (MATHMot), which focuses on children's motivation for learning math. This study aimed to test whether academic emotions mediate the relationship between mathematics identity and mathematical achievement or if that relationship is diverse. The sample consisted of 437 third-, fourth- and fifth-grade students (33% third grade, 39% fourth grade; 49% male) in primary schools across Belgrade. Three academic emotions related to mathematics: Boredom, Anxiety, and Enjoyment, were measured by using the AEQ-ES scale, which consisted of 28 items that were answered on a 5-point Likert scale. The mathematics identity scale consisted of 6 items created for this study. Finally, a mathematics test covering major curricular topics for each grade was used for measuring achievement. All measures were administered to students in a paper-and-pen format. In order to analyse the relationship between academic emotions, mathematics identity and achievement, two path models were specified in AMOS. In the first model, emotions were mediating variables between mathematics identity and achievement. The specified paths assumed that mathematics identity affects academic emotions, which in turn affect achievement. Fit measures showed a poorer fit of the first model ($\chi^2/df = 9.66$, RMSEA = .14, CFI = .98, NFI = .77, TLI = .77). The second model proposed mathematics identity as a mediating variable between emotions and achievement. It assumes that academic emotions affect mathematics identity, which then impacts achievement. The second model had significantly better fit statistics ($\chi^2/df = 1.84$, RMSEA = .04, CFI = .99, NFI = .99, TLI = .98). Boredom was the only emotion that did not significantly influence identity ($r = .04, p = .53$). Anxiety had a significant negative impact ($r = -.13, p = .02$), while Enjoyment had a significantly positive impact ($r = .43, p = .00$) on mathematics identity. Finally, mathematics identity positively influenced achievement ($r =$

.22, $p = .00$). It was concluded that emotions, especially Enjoyment, significantly impact academic achievement through mathematics identity, and not vice versa. Implications for the theory and practice will be discussed.

Keywords: academic emotions, mathematics identity, mathematical achievement

THE AGONISTIC SELF MODEL: STABILITY AND TRANSITION OF TEACHER IDENTITY

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We explore teacher identity, starting from the model of agonistic self, which implies that the experience of oneself is based on the struggle of voices to impose one's own value position and direction of action. In this paper, we will show how broad patterns of power relations between voices of the self, exterior voices and social context, which we call constellations, can be used in order to understand the constitution and mutability of teacher identity. Based on interviews with 9 teachers (all teaching social subjects; years of experience: 1-10 ($N = 3$), 10-20 ($N = 4$), > 20 ($N = 2$) from two primary schools, we conducted multiple cases study analysis, which led to categories for the description of the functions and relations of voices. The next iteration of cross-case synthesis was aimed at mapping constellations. The process involved multiple changes as a result of intersubjective agreement and participant validation. Six constellations have been defined: 1) 'King and his kingdom'; 2) Crisis intervention; 3) Defense of purpose; 4) Conflict of ideologies; 5) Temporary inclusion of sidelined perspectives and 6) Subsequent evaluation. The example of the King's constellation shows that identity is most often the result of the relatively stable domination of certain voices, which implies the continuous defense of the prevailing subjectivities from those that would create an alternative experience of themselves in the changed power relations. However, identity can also be the result of the temporary prevalence of certain voices, which is evident in the constellations related to the "crisis" dynamics of the agonistic self. For example, teacher identity is constituted situationally, when voices that personify socially and personally undesirable behaviors prevail (as is the case with Crisis Intervention), voices that personify alternative ideologies (as in Conflict of Ideologies and Temporary inclusion of sidelined perspectives) or subversive and questioning voices (as in the case of Defense of purpose and Subsequent Evaluation). Finally, when constellations related to crisis dynamics are too frequent, that can indicate an identity crisis or identity transition.

Keywords: teacher identity, agonistic self, constellation, identity stability, identity transition

PERCEPTION

FOUR COMPUTATIONAL MODELS OF LIGHTNESS PERCEPTION VS. FOUR LIGHTNESS ILLUSIONS

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Lightness of a surface depends on its physical characteristics, but also on the properties of the surrounding context. As a result, varying solely the context can significantly alter surface lightness, an effect exploited in many lightness illusions. Theoretical models of lightness perception attempt to explain lightness illusions by using wide range of mechanisms (i.e. lateral inhibition, decomposition, perceptual grouping). Computational models implement algorithms that operationalize proposed mechanisms, thus allowing us to calculate precise quantitative predictions for each input stimuli. In a previous study (Nedimović et al., 2021) we tested two traditional computational models (ODOG (Blakeslee & McCourt, 1999) & RETINEX (McCann, 1999)), along with two contemporary models (High-Pass (Shapiro & Lu, 2011) & Markov Illuminance and Reflectance (Murray, 2020)). These models were tested on four illusions: Simultaneous lightness contrast (SLC), SLC version by Maniatis (2015), White's illusion (1979), and Reverse contrast illusion (Economou et al., 2015). The results showed that these models were able to predict the classical contrast effects, but were not able to predict the reversal of the contrast effect.

In this study, we tested four additional computational models of lightness perception (ODOG-2, LODOG, FLODOG (Robinson et al., 2007), and Dynamic decorrelation (Lerer et al. (2021)) on same four illusion displays. We evaluated models by comparing their predictions with empirical data from an online experiment with 85 participants. Our results show that these models were overall better at predicting obtained effects than the models tested in a previous study. Newer variations of ODOG by Robinson were able to predict the classical contrast effects (SLC and SLC version by Maniatis), but were also able to predict the obtained effect for Whites illusion. However, Robinsons ODOG variation models were not able to simulate obtained effects for the Reversed contrast illusion. Interestingly, the newest computational model (Dynamic decorrelation) was not able to predict the obtained effects for classical contrast illusions. However, this model was able to simulate obtained effects for both Whites and Reversed contrast illusions, suggesting that this model is better at simulating obtained effects for displays that produce reversal of classical contrast effect or lightness assimilation than all previously tested models.

Keywords: Computational models of lightness perception; lightness illusions; ODOG, Dynamic decorrelation

THE EFFECT OF COLOR, EXPECTATION AND GENDER ON SWEET TASTE PERCEPTION

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The information we receive through the senses of taste greatly contributes to the quality of life. It provides us with important information about food, but it also allows us to enjoy different tastes. Numerous studies have shown that, besides the basic physiological mechanisms, there is a significant effect of other, psychological factors on taste perception. Visual cues such as color, shape and size can change the taste sensations (Spence, 2015). Color contributes to the creation of associations in terms of product acceptance or rejection (Fizman et al., 2012; Hoppu et al., 2018). Research has also shown that red color are most often associated with a sweet taste and yellow with a sour taste (O'Mahony, 1983). On the other hand, perception is greatly affected by cognitive factors. One of these factors is the expectation that directs the subject to the desired interpretation of sensory information (Summerfield, Egner, 2002). The main goal of this research is to examine the effect of color and expectation on perception within the gustatory sensory modality. We also want to check whether there are gender differences in the assessment of taste depending on the color or expectations, because previous research has shown that there is a difference in taste-guided behavior between males and females (Bartoshuk, Duffy, & Miller, 1994; da Silva et al., 2014). Three factors were varied: intensity of red color (dark and light shade), expectation defined by the instruction given to the subjects (instruction that suggests the taste of sweet and "neutral instruction") and gender (male and female). The dependent variable was an estimate of the intensity of sweetness defined by a value on a seven-point scale. The sample consisted of 100 subjects, students of the University of Banja Luka, with an equal number of male and female. The results show that there is a statistically significant interaction between color and gender in taste assessment ($F(1,92) = 4.577, p < .05, \eta^2 = .035$). Female subjects rated as a sweeter drink that had a more intense red color (dark shade), while in male subjects the results showed the opposite. There was no statistically significant effect of cognitive factor (expectations) on the taste sensation. The obtained results indicate important psychological determinants of taste perception.

Keywords: color, expectation, gender, sweet taste perception

AVERAGE LIGHTNESS PERCEPTION — EFFECTS OF ENSEMBLE SIZE AND VARIANCE

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Ensemble perception is an ability to extract summary statistical information (e.g. M or SD) from visually presented sets. This ability was previously demonstrated on a variety of visual features, such as size, orientation and hue, and an increased precision of judgment was found on smaller and less variable ensembles. In this study, using average lightness judgements, we tested the importance of the set size and variance. In addition to classical statistical measures, we also modeled our data using an ideal observer model (Solomon, Morgan & Chubb, 2011), calculating the number of averaged stimuli. In the *baseline* condition, using a brief exposure (500ms), 26 participants were shown a display with 10 circles of variable gray shades ($SD=20$). In the *high-variance* condition ($N=26$), we increased the SD of the set distribution to 35, keeping the number of circles at 10. In the *small-set condition* ($N=29$) we decreased the set size to 5, keeping the SD at 20. In all conditions, participants' task was to adjust a probe to match the mean of the previously presented set, after which we compared the actual mean with their estimate. Classical statistical measures of precision (M and SD of error, R^2 , slope and intercept) offered no difference between the first and latter conditions. However, the ideal observer model does register a difference between the conditions, where integration is more efficient on smaller sets ($d=4.65$; $t(46)=16.1$; $p<0.001$) and sets with larger variance ($d=-1.71$; $t(50)=-6.34$; $p<0.001$). In the small-set condition more of the stimuli were integrated (35.4%) than in the baseline condition (21.1%). Also, more stimuli were integrated in the high-variability condition (28.2%) compared to the baseline condition. Although results show that participants are sensitive to the manipulations, in our paradigm this was not observed with classical statistical measures used previously (Chong & Treisman, 2003). While the expected effect of set size was observed, it seems that participants attend to more stimuli when presented with a more varied set which might point towards the use of an adaptive subsampling strategy. When presented with a low-variance set, participants need not attend to a high number of stimuli to respond accurately. However, when the variability is increased, participants opt to attend to more stimuli, while keeping the accuracy the same.

Keywords: ensemble perception, lightness, modeling

WHICH FAMOUS FACES DO WE ALL KNOW?

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One of the most sophisticated visual skills is face recognition. It develops slowly but enable us to identify a large number of different people solely by visual inspection of their faces. Though the face perception, in its mature form, is a holistic process i.e., a face is processed as a Gestalt, still it has been shown that the recognition of familiar faces is based on internal characteristics (the most important being eyes, lips and nose). On the contrary, unfamiliar faces processing relies on external features. Some people, so called super-recognisers, can recognise an immense number of human faces. Unfortunately, this important visual capacity can also be compromised and this is known as prosopagnosia or an inability to recognize faces (hair, ears, neck, earrings...).

Since 2010, we have been testing the face recognition on the population of our first year Psychology students, and in the ten tested generations, 829 students participated in our study. Each year, they were shown 40-52 photographs of famous faces (i.e., celebrities). The stimuli were balanced in number of features: black & white vs. colour photographs, showing people of different ages, genders and races, depicted from different angles.

In our sample, we found 2.53% of people (21 participants) with less than 10 correct answers, which is in correspondence with the previously reported prosopagnosia incidence of 2% in general population. We also found 1.93% of super recogniser.

Additionally, we asked our participants for self-assessment of their face-recognition ability, trying to establish the quality of introspection for this important capacity. To our surprise, the obtained correlation with their correct answers was only $r = 0.34$ ($p < .001$).

Given that our participants were young ($M_{age} = 19.47$; $SD = 1.92$), we've always insured that the celebrities stayed relevant to this population, therefore we regularly scrutinized and refreshed our stimuli pool. Over the years, some of the most recognized celebrities were entertainers (Brad Pitt, Svetlana Ražnatović, Nikola Kojo, Novak Đoković, Marija Šerifović). Lately, there was a shift and the most recognized celebrities became politicians (2020, 2021: Donald Trump, 2018, 2019: Aleksandar Vučić). The least recognized celebrities were those obviously no longer interesting for our relatively young participant's sample (such as Zoran Cvijanović, Branka Katić and Milorad Čavić).

Keywords: Prosopagnosia, recognition, famous faces

ORGANIZATIONAL PSYCHOLOGY

PSYCHOMETRIC PROPERTIES OF THE SERBIAN VERSION OF WORKPLACE
ARROGANCE SCALE (WARS) IN THE SAMPLE OF MEMBERS OF STUDENTS'
ORGANIZATIONS

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Workplace arrogance is defined as a stable belief in superiority and increased feeling of self-importance that is manifested by excessive and arrogant claims within the workplace. It encompasses a set of behaviors in which a person expresses an excessive sense of superiority, which is often achieved by belittling others. In its extreme form, arrogant behavior boils down to the perception of oneself as invincible. We have translated the WARS instrument from English to Serbian. The instrument contains 26 items that we transposed from the third to the first person, so that the items would not refer to superiors, since we wanted to examine the existence of arrogance among students who are members of the student organizations. Although this instrument was originally made for workers, the aim of this study was to determine the psychometric characteristics of the WARS scale on a sample of students who are members of student organizations. The sample was convenient and it was assembled through contacting the various students' organizations. Total of 56 respondents (82.1% women), completed the questionnaire. The method conducted for exploratory factor analysis was Principal components analysis by the means of which we identified one factor that accounts for 24.48% of total variance which corresponded to the total score of the instrument ($\alpha = .85$, $KMO = .92$, $H5 = .39$). Subjects achieved very low scores on the instrument and the distribution of scores differed significantly from normal ($zSk = 4.9$, $zKu = 7.19$). The analysis guided by the theory of item response determined that the average Infit for items was 1.09, while the average Outfit for items was .96. The average Infit for respondents was 1.08, and the Outfit was .96. The items proved to be very difficult for the respondents. Most informative items were those below average. Problematic items that are not informative enough for students within student organizations can be excluded. The instrument shows good metric characteristics, although it is necessary to acquire a much larger sample and more male respondents, as number of 56 respondents is not recommended for applying complex statistical procedures. Convergent and divergent validity should also be tested in order to give a final assessment of the usefulness of this instrument in the students' population.

Keywords: workplace arrogance, workplace arrogance scale, Serbian adaptation

BASIC PSYCHOLOGICAL NEEDS AS MEDIATORS BETWEEN PERCEIVED
CHARACTERISTICS OF THE WORK ENVIRONMENT AND ORGANIZATIONAL
COMMITMENT

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The influence of the perceived characteristics of the work environment and basic psychological needs on commitment to the organization is a topic that has been much researched in the literature so far, but with contradictory results. In this paper, Basic psychological needs (autonomy, competence and relatedness) are examined as mediators between perceived characteristics of the work environment (perceived organizational prestige and perceived supervisor support) and organizational commitment defined by Klein's target-free model. The sample consists of a total of 287 respondents, and the survey process itself was conducted through a paper-pen version and an online questionnaire. Two models of mediation were conducted: the first, which refers to basic psychological needs as mediators of the effect of Perceived prestige of the organization on commitment to the organization, and the second, which refers to basic psychological needs as mediators of the effect of Perceived supervisor support on organizational commitment. The results of the first mediation indicate that basic psychological needs are significant partial mediators of the effect of Perceived Prestige on Organizational commitment, $b = .79, p < .05$, 95% BCa CI = [.45, 1.17], with the independent variable having a significant effect through Autonomy and Relatedness, $b = .45, p < .05$, BCa CI = [.20, .74] $ib = .12, p < .05$, 95% BCa CI = [.15, .62], while the effect not significant over the Competence variable, $b = -.03, p > .05$, BCa CI = [-.22, .14]. The results of the second mediation indicate that basic psychological needs are significant partial mediators of the effect of Perceived supervisor support on Organizational commitment, $b = .78, p < .05$, 95% BCa CI = [.52, 1.04], with the independent variable having a significant effect through Autonomy and Relatedness, $b = .34, p < .05$, BCa CI = [.13, .57] $ib = .43, p < .05$, 95% BCa CI = [.24, .64], while the effect not significant over the Competence variable, $b = .01, p > .05$, BCa CI = [-.07, .07]. The findings indicate the importance of fulfilling the needs for autonomy and relatedness as they are a key factor in the perceived prestige of the organization and quality leadership to lead to a more stable development of organizational commitment among employees.

Keywords: work environment, basic psychological needs, regression, organizational commitment, mediation.

RELATION BETWEEN JOB DEMANDS, JOB RESOURCE AND WORK ENGAGEMENT OF HEALTHCARE WORKERS DURING THE COVID-19 PANDEMIC

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Many studies have confirmed that job resources mostly influence work engagement and that job demands do not affect work engagement. However, some studies have shown that high job demands may preclude the mobilization of job resources. In a similar vein, high job resources may reduce job demands. During the COVID-19 pandemic, healthcare workers face high job demands, like work overload, higher emotional and cognitive demands etc. This study tried to investigate the relationship between the job demands, job resources and work engagement of healthcare workers during the COVID-19 pandemic. Specifically, what determines work engagement, job demands or job resources to a larger degree? The sample consisted of 257 healthcare workers (74.7% female) from three hospitals in Bosnia and Herzegovina, mean age of 40.75 ($SD=11.71$), with a mean length of service of 15.03 years ($SD=11.47$). The data were collected during the March-end of May 2020. We used Work Engagement Scale and Job Demands Resources Questionnaire (1. job demands: work overload, emotional demands, cognitive demands, role conflict; 2. job resources: co-worker support, supervisor support, participation in decision-making, opportunities for professional development). Results of the hierarchical regression analysis show that the basic demographic variables (gender, age), introduced in the first step, explained 3.6% of the variance of work engagement ($F(2,244) = 4.471, p < .05$). Age proved to be a positive predictor of work engagement ($\beta = .180, p < .01$). In the second step, when added the job demands were, the proportion of the explained variance of work engagement increased to 13.9% ($F(6,244) = 6.429, p < .001$), and role conflict ($\beta = -.278, p < .001$) were found to be negative predictors of work engagement. In the third step, when added the job resources were, the proportion of the explained variance of work engagement increased to 34.5% ($F(10,244) = 12.348, p < .001$), and the participation in decision-making ($\beta = .180, p < .01$) and opportunities for professional development ($\beta = .401, p < .001$) were found to be positive predictors of work engagement, in addition to age as a positive predictor, and role conflict as negative predictors. Results imply that, during the COVID-19 pandemic, the impact of job demands on healthcare workers' work engagement is significant. However, job resources determine healthcare workers' work engagement more than job demands. More interventions on job resources are required to optimize healthcare workers' work engagement.

Keywords: Job Demands, Job Resource, Work Engagement, Healthcare Workers, COVID-19 Pandemic

PREDICTING JOB PERFORMANCE WITH ADAPTIVE SELLING AND SALES ORIENTATION - CUSTOMER ORIENTATION SCALE

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Previous studies results show that customer-oriented salespeople express care toward customers through listening, which helps them adapt selling behaviours to fit customers' demands. Adaptive selling behaviour (ASB) explains the changing of the sales approach when the salesperson encounters different sales situations. It was observed that a sales approach in comparison to adaptive selling does not directly contribute to sales performance. The current study aims to discover if there is a differential effect of ASB when applying different sales approaches on sales performance measured by average bonuses earned. The current study had 80 respondents (73.8% women), 21 to 62 years old ($AS = 12.5$, $SD = 9.99$), who answered on 16 items of Serbian Adaptive Selling Scale (ADAPTS) using a 7-point Likert scale ($\alpha = .85$). The Sales Orientation - Customer Orientation (SOCO) scale consists of 24 items and is divided into two aspects SO and CO – sales approaches. Respondents gave answers on a 9-point Likert scale ($\alpha = .86$ and 0.83). Respondents also provided the information about the average bonus amount earned in the past six months. PROCESS matrix was used to conduct two moderation analysis using ASB as a moderator in predicting sales performance (average bonus) - criterion, using both sales orientations (separately) as predictors. Both models appeared to be insignificant. Previous results suggest that changing the sales approach is generally effective in facilitating sales performance. In particular, the customer orientation approach has a positive impact on sales performance. Customer orientation drives ADS. Having this in mind, future research should incorporate different operationalisations of sales performance, such as subjective measures.

Keywords: adaptive selling, customer orientation, sales orientation, ADAPTS, SOCO, job performance

GAME-BASED ASSESSMENT USED IN ORGANIZATIONAL CONTEXT - LITERATURE REVIEW

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The assessment of psychological attributes has great importance due to predictive power regarding future job performance. Recent technological developments, in particular video game-based assessments (GBAs), enable the use of alternative data sources. Despite the rising interest and practical usage, there is a lack of empirical evidence of their reliability and

validity. GBA are being created without proof they are really measuring what they say they do. Focusing on this problem, we are conducting a literature review of available empirical literature to better understand what empirical evidences are missing and which kind of research should be done in the future to make this innovative approach more efficient. We undertook a systematic approach to the literature review in five sequential steps—search, selection, quality control, extraction, and synthesis. We focused our search on papers regardless of the year of the publishing (there is no older article than 2015.), because the GBA development process lasts sometimes for a few years, so we wanted to incorporate the initial phases and included not just the scientific articles. Databases for articles included EBSCO, Google Scholar and PsychInfo. The keywords used for searching within the databases included 17 keywords and their combinations. The key concepts are: game, assessment, workplace, recruitment, selection. The search and selection process resulted in 52 relevant scientific papers so far (14 papers are reviewed and 38 are to be reviewed). The reviewing coding categories for reliability and validity statistics, were created, but considered open for further modification. At this point, the categories are: Alpha, Retest, Omega, Criterion and Construct validity. Only two research papers reported alpha value, retest reliability was mentioned in one, criterion validity in three and construct in five. Seven articles (50% of reviewed papers) haven't reported any data regarding their validity or reliability. About in half of the papers (29) terms related to GBA were used. The gamification (mentioned in 25 papers) is predominantly used in the selection process (52%), followed by training purposes (12%), onboarding (8%) and other HR functions. Further empirical data was not available. This raises great concern about commercialised assessment and their practical usage - are those tools really measure what they say or just make the process more fun?

Keywords: gamification, literature review, organisation, game-based assessment, selection

JOB SATISFACTION PREDICTORS IN EMPLOYEES FORCED TO WORK FROM HOME DUE TO THE COVID-19

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There is a relative consensus in the literature that job satisfaction derives from individuals' characteristics, specific job factors, and factors related to the work organization. Since the Covid-19 epidemic forced many employees to start working from home, we aimed to explore the role of some variables which, to our best knowledge, could help understand job satisfaction in such circumstances. Precisely, we selected personality traits, life satisfaction, salary satisfaction, housing conditions (workroom, number of household members), marital status, parental status, and compatibility of work as a set of predictors. The sample consisted of 154 snowball-recruited participants ($M_{age} = 34.53$, $SD_{age} = 8.17$; 72.7% females) who were forced to work from home instead of from the workplace. The following instruments were used: modified Index of Job Satisfaction, BFI-44 and SWLS. Salary satisfaction and compatibility of work and personality were measured using a one-item assessment on a 7-point scale. We ran hierarchical regression on job satisfaction with age, gender and

personality traits included in the first step, housing conditions, marital and parental status in the second step, life and salary satisfaction in the third step, and compatibility of work and personality in the fourth step. The results showed that conscientiousness ($\beta = .24$; $p < .01$) and extraversion ($\beta = .17$; $p < .05$) are predictive of job satisfaction in the first step ($R^2_{adj} = .21$; $F(7, 153) = 6.78$; $p < .01$), while housing conditions, marital status and parental status, added in the second step, are not significant predictors ($\Delta R^2 = .02$, $p > .05$). Both salary satisfaction ($\beta = .23$; $p < .01$) and life satisfaction ($\beta = .34$; $p < .01$), included in the third step are shown to be predictive of job satisfaction ($\Delta R^2 = .16$, $p < .01$). The final model ($R^2_{adj} = .61$; $F(14, 153) = 18.42$; $p < .01$) showed that compatibility of work and personality ($\beta = .58$; $p < .01$), included in the fourth step ($\Delta R^2 = .23$, $p < .01$), is the strongest predictor, while conscientiousness ($\beta = .15$; $p < .05$) and salary satisfaction ($\beta = .13$; $p < .05$) are weaker but also significant predictors. Therefore, two conclusions can be made. First, our findings suggest that conscientiousness might have an essential role in job satisfaction in working from home conditions – people with higher conscientiousness may have better task-management skills, which leads to higher productivity and lower procrastination, and in turn, contributes to job satisfaction. Second, compatibility of work and personality has a crucial role in job satisfaction, which is in line with self-determination theory.

Keywords: Work from home, job satisfaction, personality traits, compatibility of work and personality

THE ADAPTATIVE SELLING SCALE: VALIDATION ON A SERBIAN SAMPLE

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Perceived importance of sellers' adaptability is important for sales organizations, practitioners and sales researchers. Adaptation is made by changing either negotiation strategies or one's needs and expectations. Psychologists are interested in how sellers adapt to interaction with customers and how this affects sales success. For that reason, additional work on adaptive sales scale (ADAPTS) (Spiro & Weitz, 1990) is required. Originally, adaptive sales was considered a one-dimensional construct, while ADAPTS revised versions indicated the existence of two factors. This scale has five facets: (1) recognition that different sales approaches are needed for different customers, (2) confidence in ability to use a variety of approaches, (3) confidence in ability to alter approach, (5) collection of information to facilitate adaptation, and (6) actual use of different approaches. The aim of this research is to evaluate the psychometric properties of the scale in order to further explore the issue of dimensionality ADAPTS scale, as well as what could be the dimensions of this construct. Our sample was convenient, collected via online platform (Google Forms). Using filter question, we took into consideration only participants who had previous sales experience. There were 80 respondents (73.8% women), 21 to 62 years old ($AS = 12.5$, $SD = 9.99$), who answered on 16 items of Serbian ADAPTS using a 7-point Likert scale (1 - not agree at all, 7 - completely agree). The mean total score in our study was 5.47 ($SD = .83$), compared to the original scale which was 5.51 ($SD = .66$). Reliability was the same as in the original study ($\alpha = .85$). Factor

analysis was performed using Maximum Likelihood extraction and Oblimin rotation, showing a three-factor solution 48.12. Parallel analysis showed a two-factor solution and additional analysis with two fixed factors explained 44.2% of the variance. Most of the variables had loadings on the first factor, as the second one mostly represented facet six. The saturations on the factors showed a theoretical tendency, with the first factor measuring motivation and abilities, and the second real behaviour. Higher-order analysis showed convergence to one factor, confirming the unidimensionality of the construct. Shortened version (ADAPTS-SV) with 5 items ($AS=5.86$, $SD=1.00$) showed the reliability of .81, having one factor that explained 46.96% of the variance. The reliability of the original ADAPTS-SV was .84, explaining 62.23%. In conclusion, it is justified to use ADAPTS-SV, especially in conditions of reduced resources. Still, analysis are conducted on a relatively small sample of participants, which is why the obtained results should be interpreted with caution and replicated within future research.

Keywords: adaptive selling, sales, validation, ADAPTS, shortened version

SUPPORTIVE LEADERSHIP AND AFFECTIVE ORGANIZATIONAL COMMITMENT: MODERATING ROLE OF ORGANIZATIONAL JUSTICE

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Affective organizational commitment (AC) reflects emotional attachment, identification with the organization, and involvement in the organization. Employees are involved in exchange relationships with their immediate supervisors. Previous studies show that the leader's care and understanding of employees, i.e., supportive leadership, results in employees' AC. In addition, employees are also involved in exchange relationships with the larger organization. Previous studies, which examined this relation, showed that organizational justice is an important predictor of AC. This study aimed to determine whether the relationship between supportive leadership and AC is moderated by organizational justice. The sample consisted of 319 employees (51.75% male), age 19 to 69 ($M=33.76$, $SD=10.64$), with a length of service from 1 to 40 years ($M=10.15$, $SD=9.44$). The participants were employed in small and medium-sized enterprises, and participation was voluntary and anonymous. We used the Affective Commitment Scale, Supportive Leadership Scale and Organizational Justice Scale (overall justice judgments). Results of the hierarchical regression analysis show that supportive leadership explains 2.5% of the variance of AC ($F(1,317) = 9.154$, $p < .01$; $\beta = .168$, $p < .01$). Introduction of the organizational justice results in a significant increase in the amount of explained variance of AC ($\Delta R^2 = .096$, $F(2,316) = 22.445$, $p < .001$; $\beta = .403$, $p < .001$), but also in a decrease in the standardized regression coefficient of supportive leadership ($\beta = -.089$, $p > .05$). The introduction of the interactive effect of supportive leadership and organizational justice led to a significant increase in the amount of explained variance of the AC ($\Delta R^2 = .023$, $F(3,315) = 8.151$, $p < .01$; $\beta = -.157$, $p < .01$). These results show that organizational justice is a significant moderator in the relationship between supportive leadership and AC. This moderation pattern was tested with Hays' (Hayes) "Process" SPSS macro. Results showed that supportive leadership has a statistically significant effect on AC only among employees with high experience of organizational justice. At them, AC decreases as perceptions of supportive leadership decline ($\theta(X \rightarrow Y) | M=78.442 = -.136$, $t(315) = -2.457$, $p = .015$). This study revealed that the

relationship between supportive leadership and AC is not simple, and it partially depends on the perceived organizational justice.

Keywords: Affective organizational commitment, supportive leadership, organizational justice, moderator

THE FACTORIAL VALIDITY AND RELIABILITY OF THE SERBIAN VERSION OF THE “BURNOUT ASSESSMENT TOOL” (BAT)

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In response to some serious problems to the conceptualization and assessment of burnout, Schaufeli, DeWitte and Desart developed the Burnout Assessment Tool (BAT). The BAT measures the four core dimensions of burnout: exhaustion, mental distance, and cognitive and emotional impairment (BAT-C, 23 items), as well as the two secondary burnout symptoms: psychological distress and psychosomatic complaints (BAT-S, 11 items). The aim of this research was to explore the psychometric properties of the Serbian version of the BAT. The sample consisted of 450 employees (64.7% women), mean age 39 years, 31.6% managers, and 59% from private companies. Almost two thirds of participants work in education (12.7%), IT (18.9%), public administration (17%) and the service sector (13.9%). In order to assess the factorial validity, three models of core symptoms (BAT-C) were tested using CFA: 1) a one factor model with all 23 items loading on one factor; 2) a 4-factor correlation model that included the four core dimensions that were allowed to correlate, 3) a second-order model in which all four core dimensions refer to one underlying factor (burnout). Also, two models were tested concerning the secondary burnout symptoms; a one factor model and a correlated two-factor model. The results show that both the 4-factor model (CMIN/df = 2.96; .CFI = .90; TLI = .89; RMSEA = .07), and the second-order model (CMIN/df = 2.98; CFI = .90; TLI = .89; RMSEA = .07) for BAT-C resulted in an acceptable fit. This means that, when it comes to core burnout symptoms, the BAT could be used both as a one dimensional or a four dimensional questionnaire. The composite reliability for the second-order model is .84, and, for exhaustion .86, for mental distance .70, cognitive impairment .86, and emotional impairment .85. Regarding the secondary burnout symptoms (BAT-S), the best fit was achieved with the 2-factor model (CMIN/df = 2.86; .CFI = .95; TLI = .94; RMSEA = .06). Composite reliability for psychological distress is .75 and for psychosomatic complaints is

.82. Based on the results of CFA we conclude that BAT is a reliable and valid questionnaire for measuring burnout in Serbia.

Keywords: burnout, Serbia, BAT, validation, CFA

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DEVELOPMENTAL PSYCHOLOGY

HOW DO ADOLESCENTS PERCEIVE THEIR INTELLIGENCE?
CORRELATES OF SELF-ESTIMATED INTELLIGENCE IN PERSONALITY AND
INTELLIGENCE DOMAIN

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Self-estimated intelligence (SEI) has been extensively studied in the adult population, however, findings regarding the way adolescents perceive their intellectual abilities remain limited. This research aimed to fill this gap by investigating the relationship between SEI, personality traits, and psychometric intelligence in the adolescent population. Total of 239 Belgrade high-school students ($M_{AGE} = 16.9$, $Sd = 1.1$; 60.3% female; 49.4% fourth grade) filled out HEXACO-60 (60 items; $\alpha = .47 - .80$), Narcissistic admiration and rivalry questionnaire (18 items; $\alpha = .80$), Raven's progressive matrices (16 items; $\alpha = .66$) and two single-item assessments of one's intelligence – on the percentile and on the IQ scale. Although both measures of the self-estimated intelligence yielded comparable results, we found IQ scale scores to be more stable and reliable. Low correlations between psychometric and self-estimated intelligence were obtained ($r = .13$, $p < .05$) which indicates weaker relationships between the two constructs compared to the adult population. Furthermore, regression model predicting the intelligence estimation with honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, openness, narcissism and intelligence proved to be significant ($F(238, 8) = 4.10$, $p < .001$, $R^2 = .16$). Despite explaining a similar percentage of variance as in adults, on adolescent samples different sets of predictors emerged as significant. Namely, only conscientiousness ($\beta = .13$, $t = 2.17$, $p = .031$), grandiose narcissism ($\beta = .27$, $t = 3.41$, $p < .001$) and intelligence ($\beta = .15$, $t = 2.34$, $p = .027$) showed significant contribution to the prediction of SEI score. Additionally, adolescents showed the tendency to overestimate their intellectual abilities, and again, neither one of the expected personality traits (emotionality and extraversion) contributed to this prediction. Instead, only conscientiousness ($\beta = .14$, $p = .035$) and grandiose narcissism ($\beta = .27$, $p < .001$) contributed to the prediction of overestimations. The strong association between SEI and narcissism is particularly interesting given that narcissism does not correlate with psychometric intelligence. It suggests that the high estimation of one's intelligence serves as an important resource in gaining other people's admiration and helps adolescents retain a positive view of themselves. On the other hand, the lack of correlations between SEI and most personality traits and low correlation with intelligence are discussed in terms of adolescents' development and interpreted through specific factors that determine their view of intelligence.

Keywords: self-estimated intelligence, conscientiousness, grandiose narcissism, adolescents

"WE JUST WANTED TO GO OUT, HAVE A DRINK, MEET EVERYONE, HUG..."
- YOUTH NARRATIVES ABOUT LIFE DURING THE PANDEMIC

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The outbreak of the Covid-19 pandemic at the beginning of 2020 brought great changes in the daily lives of people of all ages. The initial empirical research conducted during the pandemic in many countries indicated an increased tendency of young people to develop psychological problems. The pandemic and preventive measures that followed, including lockdown, as well as changes in social and school activities, affected adolescents and young people in a specific way, interrupting developmental tasks typical of their age. This research aimed to shed additional light on young people's perspectives on the crisis and give them the opportunity to share their experiences of the pandemic. In order to gather adolescents' and youth's experiences during the pandemic, we constructed an online form with the instruction to describe their perception of life during the pandemic, their positive and/or negative experiences and how those experiences affected them. We collected 70 written narratives from young people (85.7% female), aged 14-26 ($M_{\text{age}} = 20.1$; $Sd = 2.9$), in the period from March to May 2021, one year after the pandemic outbreak. We conducted a thematic analysis in order to identify the main topics present in youth's narratives. Collected narratives differed in length, coherence, valence, and content, which reflected young people's complex and diverse experiences during this pandemic crisis. In total, 775 segments were coded. Thematic analysis revealed ten major themes, with several subthemes within each. These major themes referred to 1) effects of the pandemic on the sense of self; 2) coping strategies; 3) positive 4) negative experiences; 5) negative emotions; 6) worries; 7) longing for; 8) evaluation of others; 9) opinions about vaccination; 10) the temporal dimension of the experience. These findings can help us "*hear their voice*" (UNICEF, 2011) and gain a better understanding of adolescents' perspectives and experiences during the pandemic. The meaning and content of identified themes will be discussed from a developmental perspective, pointing out the challenges and needs of adolescents and young people in times of crisis.

Keywords: adolescents and youth, narratives, crisis, qualitative study

EARLY CHILDHOOD DEVELOPMENT STIMULATION: ONE WAY OF MEASURING

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Starting from the first days, supportive, warm, and psychologically simulative interactions between caregivers and children are seen as a very important factor of the child's development and represent an indicator of care quality. It becomes necessary to develop direct or self-reported instruments for estimating the quality of early childhood stimulation. This research aims to (1) construct an instrument for assessing the frequency of the stimulative activities in child's environment, (2) determine psychometric properties of the constructed instrument, and (3) investigate the correlation between the frequency of these activities, socioeconomic status, and the developmental status of the child. The sample consisted of 1388 parents (90% mothers) of children aged from 1 to 60 months (53% boys and 47% girls). Parents were examined in 22 Serbian districts, out of a total of 24. The number of parents per district was determined to be proportional to the total number of young children. The education level in the sample was relatively high (41% of parents had secondary education, 39% had higher education), as well as the economic status (on a scale from 1 to 10, the average score was 6.28). An expert group of developmental psychologists formulated activities that would be supportive for child development based on the Early Learning and Developmental Standards for children in Serbia. After the pilot study, the Inventory of stimulative activities for child development (ISCAD) was designed for 8 age intervals (from 1 to 60 months). The parents indicated how frequently (on the five-point scale from never to almost every day) in the past 15 days they were involved in the listed activities with the child. The developmental status of the child was measured using the Ages & Stages Questionnaires® (ASQ-3). The obtained results indicate good psychometric properties of the ISACD (Cronbach's alpha ranging from .77 to .97). Rush analysis shows that ISCAD is a reliable instrument (reliability for participants is about 0.8 and for items 0.98), which measures one phenomenon and does not have many items with poor metric characteristics. There was no significant correlation between the mother's education or economic status, and the frequency of stimulative activities with the child. On the other hand, there were significant positive correlations between the ISCAD and the developmental status of the child, at each age interval except on 42 and 60 months (correlation coefficient ranging from $r=.232$, $p<.05$ to $r=.511$, $p<.05$). The obtained results emphasize the importance of early childhood stimulation. The appropriateness of using self-report instruments for care quality assessment will be discussed.

Keywords: early childhood development, care quality, simulative activities, ISCAD questionnaire

FOCUS ON HOBBIES OF ACADEMICALLY MOTIVATED ADOLESCENTS

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This research aimed to explore why academically motivated adolescents engage in certain hobbies and what they mean to them. The empirical findings of a broader study about the everyday life of adolescents in Serbia showed a positive connection between adolescents' hobby engagement and academic achievements and motivation. Therefore, the sample of this research consisted of selected academically-oriented secondary school students, participants of the extracurricular educational program in Petnica Science Center. A Focus group was conducted with a whole psychology program group (12 female, 2 male; average age 17) in February 2020. The semi-structured discussion about hobbies was encouraged and the answers were categorized into 222 codes in consensus of two researchers. The thematic analysis revealed six major themes concerning hobbies: 1. Personal growth, 2. Professional development, 3. Factors supporting engagement, 4. Dedicated time, 5. Managing resources, 6. Promoting products. The benefits of the hobbies were recognized in emotional regulation, fun, health, improving memory and concentration, identity and skills development. For some, hobbies were a source of early incomes and preparation for future profession. Intrinsic motivation, creativity, facultative nature of hobbies, and talent were recognized as the most important factors of engagement and perseverance in these activities. Furthermore, most participants had started practicing hobbies in childhood, and according to their experiences, it was more important what hobby meant to them than how often or regularly they practiced it. Participants recognized that required resources for practicing hobbies depend on the type of the activity and could be managed or compensated in accordance with motivation. Finally, social media and public appearances were predominantly used for product promotion, exchange of ideas, and feedback. The most important outcome of group discussion was the co-construction of the definition of hobbies as creative, self-structured, enjoyable, productive activity that requires interest and continuous effort. The aforementioned definition was supported by the theoretically framed conception of a hobby. This focus group contributed to a better understanding of the role of hobbies in everyday lives and positive development of academically motivated adolescents.

Keywords: academic motivation, adolescents, hobbies, focus group, positive development

DELAY OF GRATIFICATION AND SPONTANEOUS FOOD INTAKE: A FEASIBILITY
OF AN ONLINE DEVELOPMENTAL STUDY¹

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Much like in other fields of research, online data collection methods in developmental psychology have soared during the COVID-19 pandemic. However, online data collection with children requires some unique adaptations and additional issues to consider than is the case with adult participants. This includes designing methods for both unmoderated, i.e., without direct interaction with researchers, and moderated research, i.e., with researcher interaction using video-conferencing software. This presentation aims to explore the feasibility of adapting a developmental health psychology experiment for moderated online research. An experiment where 200 5-6 and 7-8-year-old children were assigned to a delay of gratification condition or a spontaneous food intake condition in an at-home setting, with the session moderated by a researcher via video-conferencing software. The study was conducted online in five countries: China, Brazil, Slovenia, Italy, and Germany. Decisions around adapting the study design will be presented as well as the overall feasibility of the procedure. Feasibility outcomes include recruitment of families, the number of families discontinuing participation, practical problems associated with delivering the study at home, assessment procedures, and collection of data, e.g. problems related to child compliance with remote study instructions at a home setting, and awareness of the study aim. The overall study procedures proved feasible. This study demonstrates a novel approach of adapting some staple developmental paradigms (i.e., delay of gratification) in online settings and cross-cultural contexts. The benefits and limitations of online data collection in developmental research will be discussed.

Keywords: online research, delay of gratification, development, inhibition, feasibility

IF PARENTS DON'T GET ME, MUSIC WILL: ADOLESCENTS' ATTACHMENT
STYLES AND THE ROLE OF MUSIC IN MOOD REGULATION

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In a very turbulent period of adolescence, the regulation of emotions is considered an important function. This paper discusses the regulation provided by listening to music.

Besides, relationships with parents become staggered in adolescence, but still based on the foundations laid in childhood. The study aim is to find out whether there is a relationship between the mechanisms of mood regulation through music and different styles of adolescent attachment to parents. The sample of an online survey is convenient, consisting of 445 primary and secondary school students (aged 12 to 18), from Serbia. AUAQ (West et al., 2000) and a revised version of AAQ (Bodfield et al., 2020; West et al., 1998) were used to measure adolescent attachment characteristics, and B-MMR (Saarikallio, 2012) for mood regulation by music. The Principal axis factoring with Promax rotation was conducted separately on attachment and music in mood regulation items. First EFA identified 2 factors that explain 54% of attachment style variance ($KMO = .944$, $\chi^2(120) = 3200$, $p < .001$): External (practical) attachment (EPA), related to the behavior through which attachment to a parent is expressed and Internal (emotional) attachment (IEA), related to feelings in that relationship. Second EFA extracted 3 factors explaining 63.5% of music in mood regulation variance ($KMO = .944$, $\chi^2(120) = 3822$, $p < .001$): Regulation of emotions, Strong sensation of music and Entertainment. Two groups (securely and insecurely attached) were made based on the first and third quartiles separately from the factor scores on two attachment latent variables. A t-test shows that there is a significant difference between securely attached and insecurely attached IEA groups regarding two mechanisms: Regulation of emotions ($t(209) = -2.405$, $p = .017$, $d = 0.323$) and Strong sensation of music ($t(200) = -2.492$, $p = .014$, $d = 0.334$). EPA groups didn't differ respecting the mood regulation mechanisms. Concisely, insecurely attached adolescents on EPA dimension use mechanism of Regulation of emotions more often and Stronger sense music than securely attached adolescents, while both groups use music for Entertainment equally. The results indicate a certain association between attachment style and music as emotions regulating factor. They are discussed in a light of the previous studies as well as their potential implications. Nevertheless, as this is new research field, further investigations are needed.

Keywords: adolescence, music, attachment styles, mood regulation

ALONE TOGETHER: YOUTH AND THEIR RELATIONSHIPS DURING THE COVID-19 PANDEMIC

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Youth represents a group of teenagers and emerging adults who have specific needs regarding relationships with significant others. While teens place their focus on peers, emerging adults tend to have stable relationships with partners and parents, whose nest they (prepare to) leave. Nevertheless, relationships play a vital role in the lives of youth and are accordingly affected by the course of the pandemic. This work is part of a broader qualitative study designed to “give voice” to young people in Serbia during the Covid-19 global crisis. Participants were instructed to write about their experiences online. The initial sample of 70 narratives was subjected to thematic analysis, and only those that contained codes about relationships with others (family, friends, romantic partners, community) were taken into account. The final sample consisted of 41 participants (aged 14-24, $M = 19.85$; 88% female).

Seven major themes were extracted: 1. Quality time with family; 2. Tensions between household members; 3. Missing close friends; 4. Missing social life; 5. Re-evaluating the role of others; 6. Benefits of romantic relations; 7. Connecting with the community. Ten emerging adults noticed improvements in family relations, as an increase in mutual support and closeness. However, for teens who used to go out frequently pre-pandemic, the lockdown led to tensions between household members. Most codes related to missing friends and their emotional support, attainable online to some extent. Other participants longed for their social life and group interactions (e.g., cafes, school), unattainable online. During this time, participants re-evaluated the role of others in their lives, concluding that social contact was necessary, although its absence could prove beneficial. Moreover, social distance helped some realize who their true friends were. Few participants who reported being in a romantic relationship found spending time with partners valuable during the pandemic. Relationships with the community also improved, in terms of increased empathy toward vulnerable groups, complying with proposed measures, and even volunteering. In accordance with the results of similar studies concerning Covid-19 pandemic, physical distancing affected young peoples' quality of contact with significant others, their relational values and expectations. They mostly appreciated alone- and family- time, as well as exchange via social media, while simultaneously dealing with hardships of reduced live contact with peers. Young peoples' relationships during crisis represent an important research field, due to the relevance of social support for realization of their developmental potential.

Keywords: youth, Covid-19, relationships, qualitative study, narratives

HOW DID THE COVID-19 PANDEMIC ALTER THE FUNCTIONS OF MUSIC AND NIGHTLIFE FOR YOUNG ADULTS?

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Young adults' lives have been severely affected by the ongoing COVID-19 pandemic. Their social lives have been particularly impacted by the cancellations and restrictions of social gatherings such as concerts, parties and other forms of nightlife. Socio-cultural theory as well as empirical studies suggest that cultural elements such as music and music events can serve as valuable resources in dealing with challenges in times of crises and personal transitions. The aim of our study was to understand whether, and in what manner, the functions of music and nightlife have changed for youth during the pandemic. Moreover, we explored the ways in which nightlife restrictions affected young people and their habits. We conducted in-depth semi-structured interviews with thirteen young people (seven male, aged 18-29). The interview transcripts were analyzed using thematic analysis. Themes were identified by both researchers independantly, with the final set of themes being a product of joint discussion on the overlaps and inconsistencies in the interpretation of data. In some aspects, music was employed in the same manner as before the pandemic, particularly as background for daily tasks, as well as a resource for creating and maintaining relationships and identity development. On the other hand, during the pandemic, music had a greater retrospective function and was used to reminisce on periods of "normality". Music was also used more often as a way to dissociate and normalize one's experiences, particularly pathological

emotional states such as anxiety. However, during lockdown some emotional states were too overwhelming, thus limiting this function of emotional regulation. Restrictions of public gatherings unveiled the multiple functions parties can have for youth as an irreplaceable multimodal experience. As most participants refrained themselves from going out, they reported a loss of a valuable resource for connecting with others and managing stress. Interestingly, parties organized in accordance with public measures did not provide the participants who attended them with the typical benefits as they reported dissatisfaction and the inability to “feel normal”. Four participants continued to attend illegal parties and gatherings that they used as a resource for managing stress related to the pandemic. Illegal party-goers also emphasized feeling a greater level of connectedness with other attendees than at pre-pandemic parties. The findings suggest that nightlife can serve functions that are hard to substitute, thus helping us understand some of the underlying motives behind young people’s noncompliance with necessary restrictions.

Keywords: COVID-19 restrictions, illegal nightlife, youth, emotional regulation, qualitative study

HOW ADOLESCENTS REPORT ABOUT THEIR EDUCATION EXPERIENCES DURING COVID-19?

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The Covid-19 pandemic has significantly affected everyday life activities, relations, experiences and well-being of students. This paper is a part of a broader study in which the adolescents’ narratives about their experiences during the pandemic were collected online. Adolescents were asked to write about their experiences during the pandemic. Unlike studies that explicitly deal with the interruption of formal schooling caused by pandemic, the aim of this work is to investigate if and in what context adolescents spontaneously mention organizational changes in schooling during pandemic. From the initial sample which consisted of 70 adolescents’ narratives, only those which contained educational experiences were selected for further analysis. Thus, the final sample included 36 participants (5 male and 31 female) aged 14-25 ($M = 20$), both high school (18) and university students (18). Writing about their different experiences participants cited benefits of online study / teaching related particularly to organizational changes in schooling such as reduced amount and complexity of school requests, more efficient studying (e.g. enough time for preparation, higher grades), more comfort (e.g. taking online exams). Thus, they emphasized having more free time for non-formal learning, hobby practicing, reading, watching TV. Focus on education was also a coping strategy they used for dealing with uncertainty and disruption caused by pandemic. Only one student mentioned on-line schooling as protection from Covid-19. However, negative estimation of organizational changes in schooling were more prominent in adolescents’ narratives. Participants reported that online learning was more stressful, complicated and demanding due to online communication, lack of teachers’ skills and too compressed timetable of exams. They also reported problems with concentration and self-efficiency as well as grief about missed opportunities, worry about the future of their education and lack of company in the school setting. In comparison university students’

narratives are more related to positive aspects of online learning and advantages of self-organizing expressing concerns about educational aspirations, while secondary school students' narratives refer more to this new practice as difficult and with significant impact on daily routines, social aspects, particularly relationships with peers. These findings have practical implications concerning organizing schooling for all educational levels.

Keywords: adolescents, Covid-19, education, narratives, qualitative study

THE EXPERIENCE OF COMING OUT PROCESS OF THE LESBIAN, GAY AND BISEXUAL YOUTH IN SERBIA

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Contemporary studies have conceptualized the coming out process as a multidimensional, non-linear process that seeks to encompass all of the different and unique ways by which lesbian, gay or bisexual (LGB) people form and disclose their non-heterosexual identity, both to themselves and to others. Most of the previous research, using a quantitative approach, was aimed at inspecting aspects such as the number of people who have come out in a certain country, associations between psychosocial factors, mental health and the coming out process, or to develop a model that would explain the process of non-heterosexual identity formation. This qualitative study aimed to extensively explore the experience of coming out as a process. Participants who took part in this study were 10 LGB persons between the ages of 18 and 25. Only one interviewer conducted the data collection, each interview lasted between 30 and 55 minutes, and was constructed of the following interview axes: overall experience of being an LGB person in Serbia; process of coming out; impact of coming out; follow up questions. By using thematic analysis to analyze the data obtained from semi-structured, face-to-face interviews, four main themes emerged: (1) identity development and identity integration; (2) the strategies participants used in order to prepare themselves for the coming out conversations; (3) the feedback received from important people after the disclosure of their non-heterosexual orientation; (4) how has the coming out process been constructed and formulated within the social and cultural context. The findings imply that the coming out process of LGB youth in Serbia encompasses the intersection of both sociocultural, intra- and interpersonal factors. The difference in the salience of identity was noticeable among different genders: female participants tended to see their sexual orientation as just a small fragment of their overall identity, whereas most male participants found their sexual orientation to be an integral part of their identity. Becoming aware of one's sexual attraction was for most female participants a gradual, relatively slow process, whereas all male participants reported that they always knew that they had a non-heterosexual orientation. The complexity of the coming out process highlights the importance and the need for deeper and more comprehensive understanding of this phenomenon, by both qualitative and quantitative methodological approaches. Hence, it would enable the creation of guidelines for family, friends, and counselors working with LGB clients which would further enhance the provision of sexual identity sensitive support.

Keywords: LGBT+, coming out process, sexual identity, qualitative research, thematic analysis

FEAR OF DEATH AND FEAR OF AGING IN THE CONTEXT OF ATTACHMENT:
EXPLORING THE MEDIATION ROLE OF COGNITIVE-EMOTIONAL REGULATION
STRATEGIES

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Attachment styles are assumed to result in different strategies for dealing with attachment-related distress, as well as with a generally distressing or challenging situation. According to attachment theory, people with a secure attachment style acquire more reasonable views about themselves and the world, whereas people with an insecure attachment style develop irrational beliefs and unconstructive regulating systems. Studies exploring the relationship between attachment styles and fear of death confirmed that secure individuals would experience less fear of death than insecurely attached. Additionally, the strongest relationship is associated with preoccupied attachments (high anxiety), while avoidant attachments (high avoidance) are more likely to express fear through more indirect forms. So, fear of aging, as an implicit form of fear of death, was introduced as another construct. This study aims to examine the mediating role of regulation strategies in the relationship between attachment style and fear of death and fear of aging. A total of 134 participants were grouped into two age groups - early adulthood (19 to 25 years; $N=70$; 51.4% male, $AS=21.11$; $SD=2.18$), and middle age group (40 to 50 years; $N=64$; 81.3% female; $AS=44.08$; $SD=3.46$). The following instruments were used: Questionnaire of cognitive-emotional regulation, Scale of experience in close relationships, Multidimensional scale of fear of death, and the Aging-Related Anxiety Scale. The relation between fear of death and high anxiety, as well as between fear of aging and high avoidance, has been confirmed. However, only anxiety correlates with the dimensions of cognitive-emotional regulation: Self-blame (early adults), Rumination (early adults and middle age), Thinking ahead (early adults), Catastrophe (early adults and middle age), and Blaming others (middle age). Results indicate that anxiety has an effect on the fear of death, fully mediated ($ab=.078$ [.038-.178]) by the strategy of cognitive-emotional regulation - rumination, on a subsample of early adults. It can be assumed that by using Rumination, the attachment system is constantly kept active to strengthen the connection with the attachment figure and prevent eventual abandonment. Limitations of the study are discussed and further analysis are suggested.

Keywords: fear of death, fear of aging, attachment, cognitive-emotional regulation

SOCIAL PSYCHOLOGY

THREE FACES OF DEMOCRACY – VOTERS' SATISFACTION WITH OUTCOMES OF THREE VOTING SYSTEMS

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Throughout the world, many different democratic systems can be found, including around 15 different electoral systems. According to Arrow's impossibility theorem, every ranked voting method is flawed. We compared 3 electoral systems, including first past the post (choice of 1 most preferable option), instant-runoff (options are ranked with redistribution of last-ranked votes to remaining options until one pass 50%), and new proposed Šenk's balanced approval system (including likes and dislikes, but a number of likes must be larger than dislikes). We asked 213 psychology students to choose between 5 candidates for potential elections in the online questionnaire. Each candidate was named by one letter (A, B, C, D, E), shortly described as currently or previously holding office, 2 current authority satellites (politically left or right-oriented), and one independent candidate. Descriptions contained some usual topics in recent elections in Serbia, economy, crime, corruption, EU. Candidates were presented in 3 different campaign scenarios: full attack (everybody attacks each other), partial attack (only authority satellites attack an ex-authority candidate), and attack absence (nobody attacks no one). These scenarios were chosen as a potential control variable that might affect the voting outcomes. Candidate descriptions, campaign scenarios, and types of the voting system were randomized by Latin square and presented in a different order to different participants with one-week time intervals. Participants would first vote according to one of the systems, and after they would estimate, on a 5-point scale for each of the candidates, the satisfaction level if a certain candidate would win at the end of voting. Results show that in full attack as well as in attack absence scenario, balanced approval, and first past the post voting systems lead to the choice of an independent candidate, while instant-runoff system leads to previously holding office candidate choice. In the partial attack scenario, all voting systems lead to the choice of an independent candidate. We found statistically significant differences in participants satisfaction with final choice, in all scenarios, full attack ($F=55.6$; $df=4$; 252; $p<0.01$; $\eta^2=0.47$), partial attack ($F=52.19$; $df=4$; 316; $p<0.01$; $\eta^2=0.40$) and attack absence ($F=71.97$; $df=4$; 272; $p<0.01$; $\eta^2=0.51$). In all scenarios and voting systems, participants expressed the highest satisfaction if an independent candidate would win. We can conclude that final option choice depends more on candidate description than on the voting system. Some systems such as instant-runoff might lead to unsatisfactory choices, maybe because voters are not familiar with the process of votes redistribution or maybe because the algorithm itself contains a fallacy.

Keywords: electoral systems, first past the post, instant-runoff, balanced approval, voters' satisfaction

PUBLIC REACTIONS TO RAPE IN THE CASE OF DANIELA STEINFELD - THE ROLE
OF THE RAPIST'S POPULARITY AND GENDER

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Rape is a widespread problem and it is little addressed. When it is, its significance is underestimated and most commonly the rapist is being justified. This is in accordance with the just-world hypothesis - people believe that if something bad happened to someone, that is because they deserved it as the world is a just place. This paper aims to provide an analysis of public reactions to rape allegations in the case of Daniela Steinfeld present in the Facebook comments with special regard to the content of the comments that express the negative reactions, the role of the accused's popularity and the commentator's gender in expressing the negative reactions in the comments. A content analysis of comments on the post of Serbian tabloid's *Blic* Facebook page was conducted. The post was about Steinfeld revealing the identity of the accused rapist. This particular post was the one with the most direct comments (those not replying to some other comment) on this topic on the day of the research. In the sampling process, every other direct comment was selected until the number of 300 comments was reached. The variables that were used for coding were: gender of the commenter (male, female, other), the quality of the comment related to the victim (supportive comment, unsupportive comment), justification of the accused (the popularity of the accused is emphasized in the justification, the popularity of the accused is not emphasized in the justification) and quality of the unsupportive comment related to the victim. Based on previous research, we extracted seven categories of unsupportive comments: she was asking for it, emphasizing the victim's characteristics, lack of resistance, it's trivial, giving instructions to the victim, humour and the victim is lying and manipulating for the benefit, which was the most frequent explanation used in media rape cases. Although the supportive comments were also present, they were not analyzed in this study. The results confirmed three out of four hypotheses: unsupportive comments towards victim ($N = 214$) were more frequent than supportive ($N = 34$) ($\chi^2 = 130.645$, $df = 1$, $p < .001$), unsupportive comments were more frequent among males ($N = 145$) than females ($N = 69$) ($\chi^2 = 18.406$, $df = 1$, $p < .001$) and the main theme of unsupportive comments was mostly assumption that victim lied and manipulated ($N = 107$) ($\chi^2 = 305.876$; $df = 7$; $p < .001$). Contrary to the fourth hypothesis, it was shown that popularity was not used to justify the accused rapist ($\chi^2 = 1.190$; $df = 1$; $p > .05$). We discuss methodological aspects of the study, possible theoretical explanations of our findings including the just-world hypothesis, and the practical implications of the study.

Keywords: public reactions, rape, gender, just world hypothesis, content analysis

BIG FIVE PERSONALITY TRAITS AND BEHAVIORAL PROBLEMS AS
DETERMINANTS OF THE EXPERIENCE OF OSTRACISM AMONG ADOLESCENTS

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Ostracism is ignoring and excluding a person from the activities of a certain group. Personality traits and behavioral problems may be risk factors for being ostracized. Earlier research shows relationship between being ostracized in the work place and Big Five personality traits (lower Extraversion, Conscientiousness and Agreeableness; higher Neuroticism). It has also been shown that children with externalized symptoms tend to have difficulties with peer interaction. This research examines the contribution of personality traits, internalized and externalized problems to the experience of ostracism in adolescents within their peer group. Internalized problems are psychopathological problems that cause disturbances in emotions and mood, while externalized problems manifest as behavioral dysregulations (Graber, 2004). Research involved 105 high school students of legal age (71 female, mean age 18.2). Students filled out the following questionnaires: Big Five Inventory (John, Donahue & Kentle, 1991) with scales: Extraversion ($\alpha=.808$; Mean=26.44; Std.Dev.=6.55), Agreeableness ($\alpha=.508$; Mean=34.14, Std.Dev.=4.41), Conscientiousness ($\alpha=.746$; Mean=30.47, Std.Dev.=5.89), Neuroticism ($\alpha=.740$; Mean=24.25; Std.Dev.=6.02) and Openness ($\alpha=.577$; Mean=36.03; Std.Dev.=5.30); Youth Internalizing Problems Screeners (Renshaw & Cook, 2018. ($\alpha=.889$; Mean=21.85; Std. Dev.=7.35)), Youth Externalizing Problems Screeners (Renshaw & Cook, 2018. ($\alpha=.750$; Mean=17.87; Std.Dev.=4.86)) and Ostracism Experience Scale for Adolescents (Gilman, Carter-Sowell, DeWall & Adams, 2013. ($\alpha=.924$; Mean=24.55; Std.Dev.=9.40)). Hierarchical regression analysis showed that personality traits (first step) are significant predictors of being ostracized ($R^2 = .18$, $F(5,99) = 4.35$, $p=.001$), while internalized and externalized problems (second step) were not significant in the prediction ($\Delta R^2 = .03$, $F(2,97) = 1.79$, $p = .173$). When it comes to individual traits, Extroversion was significant in predicting the experience of being ostracized ($\beta = -.47$, $t = -4.31$, $p < .001$), while other traits didn't show significant individual contribution. Results of this study partially confirm earlier findings by indicating that introverted individuals are under greater risk of being ostracized, although it is also possible that being ostracized additionally reinforces social withdrawal. However, independent effects of lower Conscientiousness and Agreeableness, as well as higher Neuroticism have not been confirmed. Furthermore, it seems that the effect of internalized and externalized problems could be explained by personality traits and that these behavioral problems do not give unique contribution to the experience of being ostracized. Limitations of this study include small sample size and predomination of female participants which could have affected the findings.

Keywords: ostracism, Big Five, internalized problems, externalized problems

ANXIOUS-OBSESSIVE RELIGIOUS BELIEFS AS MEDIATORS OF THE EFFECTS OF GENERAL RELIGIOSITY ON ETHNOCENTRISM AND NEGATIVE OUTGROUP ATTITUDES

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Religious teachings purport to represent the important source of intergroup tolerance. Paradoxically, religious persons usually tend to hold more negative attitudes toward outgroups, which can also lead to condoning and instigating violence against such groups. The aim of our study was to examine our hypothesis that anxious-obsessive religious beliefs – specifically, those related to punishment religious orientation (CROI, Krauss & Hood, 2013) – drive religious persons to identify with ethnocentric attitudes and negative attitudes toward outgroups. The final sample consisted of 487 youth (age 18-28, 77.1% females) from the Republic of Srpska, Bosnia and Herzegovina, all of which self-identified as belonging to the Serbian ethnic group and 97.9% of them declaring themselves as Orthodox Christians. They responded on the following self-assessment measures: eleven-point affect thermometers toward six out-groups (Catholics, Muslims, Buddhists, Atheists, Bosniaks, Croats), an eight-item scale of ethnocentrism ($\omega = .92$), a five-point single-item measure of general religiosity, and a three-item measure of anxious-obsessive religious beliefs (e.g. fear of God punishing the person or her/his close ones for not observing religious rituals in a proper way; $\omega = .75$). As expected, we found a moderate positive correlation ($r = .32$) between general religiosity and ethnocentrism, while general religiosity was negligibly related to outgroup attitudes apart from a small positive correlation toward Catholics ($r = .14$), and a negative correlation toward Atheists ($r = -.18$). After that, we identified consistent moderating effects of ethnocentrism on the relation between the general religiosity and attitudes toward outgroups, where higher ethnocentrism clearly amplified the correlations irrespective of the target group. Using path analysis, we found support for the hypothesis that ethnocentrism mediated the effect of the general religiosity toward outgroups, in that partialized coefficients of this effect became largely positive (i.e. negligibly negative when it comes to the attitude toward Atheists). To test our main hypothesis, we added anxious-obsessive religious beliefs to the model, and found that they have a strong tendency to mediate the links between general religiosity on one side, and ethnocentrism and outgroup attitudes on the other side (both when it comes to simple mediations among the constructs and serial mediations where ethnocentrism predicts outgroup attitudes). Although we did not test this explicitly, our results indirectly speak in favor of the terror management theory in the context of developing religious fundamentalism; namely, for some people, religiosity makes anxious awareness of death more bearable, by simultaneously empowering the ego through belonging to social identities and channeling own aggression.

Keywords: religiosity, outgroup attitudes, ethnocentrism, youth

OUTCOME BIAS IN JUDGING REVENGE PORNOGRAPHY TOWARD WOMEN

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Revenge pornography refers to any kind of uploading or publishing private photos or videos of someone without their consent. At the beginning of 2021, the public in the Balkans region found out about private groups on social networks, counting around 30,000 participants, mostly men, involved in revenge pornography toward women. Laws in Serbia do not explicitly prohibit revenge pornography. In this study, we wanted to examine whether legal consequences for the perpetrator would affect the negative public opinion of revenge pornography acts. The sample consisted of 509 participants (70% women), with an average age of 36.5 ($SD = 13.2$), and slightly more liberal according to self-assessment on a broad social attitudes scale ranging from 1 - liberal to 7 - conservative ($M = 3.1$, $SD = 1.5$). Firstly, all participants read a vignette describing a bogus case of a woman whose pictures a man posted online. Further, half of them read the second part about the legal consequences the perpetrator has suffered for his act - imprisonment, while the other half of participants read that he was not punished due to revenge pornography not being officially prohibited in our country. All participants provided judgment of the act itself on a 7-point scale ranging from 1 - very bad to 7 - very good, as well as their opinion on who is to blame for this act, also on a 7-point scale: 1 - the woman, 4 - both equally, 7 - the man. These judgements were provided twice, once after reading the first part of the vignette and after reading the second part. We expected that change in judgments would be led by outcome bias. Actually, in both of the judgment measurements, 90% of participants marked the act of the man as very bad. Due to the ceiling effect, we did not proceed with the planned analysis of change. The distribution of answers on the responsibility scale was trimodal (on word anchors) and negatively asymmetric because 52% of participants said that the man should take responsibility. We did not test if the change in victim-blaming is moderated by gender because of the insufficient number of men per experimental group. Whatsoever, a Wilcoxon signed-rank test ($W = 50.50$, $p = .007$) showed that all participants who read about the legal consequences blamed the perpetrator slightly more afterwards, which did not happen in the other group ($W = 47.00$, $p = .054$). Legal consequences can reduce victim-blaming and consequently form a social norm by which revenge pornography toward women is perceived as deviant behaviour.

Keywords: revenge pornography, online abuse, judgment, victim-blaming, public opinion

CROSS-CULTURAL DIFFERENCES IN CONFLICT MANAGEMENT STRATEGIES IN POTENTIALLY FRUSTRATING SITUATIONS

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According to the dual concern model, the choice of conflict management strategies varies, regardless of culture, depending on the extent to which persons in conflict take into account their own goals (self-concern) and those of the opponent (other-concern). On the other hand, numerous studies reveal that conflict management strategies are not understood and used identically in all cultures. The aim of this study was to determine cross-cultural differences in personal and prototypical conflict management strategies in potentially frustrating situations. The hypothesis is that participants from collectivist cultures will utilize more cooperative strategies than those from individualist cultures. The sample included 767 (63% female) students from universities in Serbia (RS - 38%) and Italy (IT - 52%), age 18-30 ($M=21.54$, $SD=2.80$). Conflict management strategies were examined by 5 hypothetical scenarios which described different conflict situations (work and leisure activities) in individual (friend, colleague and boss) and group (peers, team) relations. For each conflict scenario, participants were asked to determine a personal and prototypical reaction (how the majority of people would react in that situation) by choosing one of six management strategies. Based on the data analysis, conflict management strategies were reduced to: disengagement (avoiding and accommodation), cooperation (compromising and problem solving) and coercion (forcing and verbal aggression). Results show that in peer-conflict Serbian students report a higher use of the cooperation strategy than Italian students (76.9% vs. 59.2%) while Italians report more use of disengagement (22.5% vs. 12.1%) and coercion (18.3% vs. 11%); ($\chi^2(2)=25.138$, $p < .001$). Respondents in the two countries differently perceive prototypical reactions in conflict with peers ($\chi^2(2)=6.027$, $p < .05$)– Serbian respondent stress the use of cooperation (53.1% vs. 45.5%) and Italian the use of coercion (32.6% vs. 24.7%). In conflicts with a friend, Serbian students use more disengagement (33.7% vs. 25.2%) and less cooperation (60.5% vs. 68.5%) than Italian ($\chi^2(2)=6.362$, $p < .05$). Perceptions of prototypical reactions in conflict with friends in the two countries differ only regarding the use of cooperation $\chi^2(2)=5.853$, $p < .05$ – Italian students think, to higher extent, that other people would use cooperation as a conflict management strategy (48.3% vs. 39.5%). No differences were found in the responses (both individual and prototypical) in conflict situations with colleagues and boss. The results of this study partially confirmed our hypothesis, but also pointed out that the choice of conflict management strategy depends on the conflict situations.

Keywords: interpersonal conflicts, conflict management strategies, cross-cultural differences, hypothetical conflict scenarios

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PREDICTORS OF AFFECTIVE AND BEHAVIORAL COMPONENTS OF
INTERCULTURAL INTERACTION

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Previous studies indicated a lack of acceptance of different ethnic groups among Serbian youth, while right-wing political parties, informal groups, and media promote ethnic and political tensions and negative attitudes towards minorities in Serbia. The aim of this study was to explore the role of different psychological factors in predicting affective and behavioral components of intercultural interaction, namely Feeling thermometer and Social distance towards other common ethnic groups in Serbia (Albanians, Croats, and Roma), with special focus on the predictive power of intercultural sensitivity (IS) in the context of other predictors. The authors postulated IS as a psychological disposition that bases one's willingness to interact, understand and respect other cultures related to both behavioral and affective aspects of intercultural interaction. Other commonly used predictors of intercultural interaction usually tend to successfully predict its behavioral (right-wing authoritarianism) or affective aspects (social dominance orientation), while low self-esteem is considered to influence one's disposition to degrade others. A total of 111 high schoolers (MAGE = 16.32, SDAGE = 0.68, 29.4% male) completed Social Dominance Orientation scale (SDO; 5 items, $\alpha = .61$), Right-Wing Authoritarianism (RWA; 9 items, $\alpha = .81$), Rosenberg Self-esteem scale (SE; 10 items, $\alpha = .85$), Intercultural sensitivity scale (ISS; 15 items, $\alpha = .82$) and Feeling thermometer (FT, 1 item per group, $\alpha = .81$ for all three items combined) and Social distance (SD, 4 items per ethnic group, $\alpha = .94$ for all ethnic groups combined). SD and FT towards three ethnic groups were combined into one composite score for each criterion variable that was used in further analysis. To examine exclusive relations between predictors (SDO, RWA, ISS, SE) and intercultural interaction variables (FT and SD), a regression model based on the zero-order correlations was tested, and it showed an acceptable fit [$\chi^2(4) = 5.853$, $p = .210$, CFI = .99, RMSEA = .07, TLI = 0.93]. The model involved correlated predictors on the one hand, and correlated criteria on the other (FT and SD; $r = .53$). The results show that SDO predicted FT ($\beta = -.227$, $p < .05$), RWA predicted SD ($\beta = .252$, $p < .01$), while ISS predicted both FT ($\beta = .336$, $p < .01$) and SD ($\beta = -.469$, $p < .01$). Predictors accounted for 24.1% of the variance of FT and 40.9% of the variance of SD. These findings are largely in compliance with previous research, while the results highlighted the importance of intercultural sensitivity in predicting intercultural interaction. Practical implications of the study results are discussed, as well as the differential role of SDO and RWA in predicting intercultural interaction.

Keywords: social distance, feeling thermometer, intercultural sensitivity, psychological predictors, ethnic groups

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THE MODERATING ROLE OF CIVIC ORIENTATIONS IN PREDICTING YOUTH
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It is well established that various psychological variables, including cognitive-affective evaluations of politics (e.g., political interest), contribute to civic participation of youth. Those variables, however, are not sufficient in predicting youth participation as some civically inactive youth still report considerable levels of civic knowledge and psychological engagement with civic/political issues. Consequently, it is important to also consider how young people construe themselves as members of the community. Towards this end, Ohme (2018) proposed four distinct civic orientations (dutiful, optional, individual, collective) that represent how young people perceive citizenship and the role of citizens in politics. Those orientations are related to civic participation, but how they might influence the relationship between the psychological predictors and participation remains to be examined. In this study, our aim was to contrast two possible pathways towards civic participation. First, we tested whether political interest, satisfaction with democracy, and political efficacy (psychological predictors) contribute to the formation of civic orientations which, in turn, influences participation (mediational model). Secondly, we considered the four civic orientations as preformed positions that moderate the relationship between the psychological predictors and civic participation (e.g., if individuals feel obliged to participate, they would be more likely to do so, irrespective of their self-efficacy or satisfaction). The responses of 375 Slovenian emerging adults aged from 18 to 29 years ($M = 21.51$, 53% females) were collected as part of a larger online study on citizenship. While the relationship between psychological predictors (each measured using a single Likert-type scale) and civic participation (engagement in 22 activities) was not mediated through civic orientations, the results support the moderated relationship. Higher levels of dutiful orientation strengthens the relationship between political interest and civic participation ($b_{+1SD} = 4.31$, $p < .001$ vs. $b_{-1SD} = -0.42$, $p = .64$), and higher levels of optional orientation cancel out the predictive power of political efficacy ($b = -1.34$, $p = .03$). On the other hand, neither individual nor collective orientation moderated the observed relationship between psychological predictors and participation. Even though single-item measures of psychological predictors might not fully capture the nuances in the constructs (and introduce measurement error), our preliminary results might be useful in further exploration (modelling) of the role civic orientations have in youth civic participation.

Keywords: civic participation; political interest; civic orientations; political engagement; emerging adults

WILL THIS COST US VOTES? VOTING PREFERENCES IN LIGHT OF PUBLIC
SUPPORT OF THE PREVENTIVE MEASURES

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While not (entirely) grounded in voting data, there is a pervasive common-sense belief that politicians tend to avoid unpopular policies (e.g., those lowering the standard of living) to retain voters. This issue might be especially problematic in emergency situations such as the COVID-19 pandemic that require swift and stern governmental response, as many of the implemented policies, are likely to cause unease within the population, that can also result in civil unrest, currently observed in different countries. The study tested whether unpopular political decisions during the pandemic are related with changes in voting preferences. A multilevel probabilistic sample of 853 Slovenians ($M_{\text{age}} = 50.7$; 47% male) was used, which might be especially interesting as both the political landscape and epidemiological situation in Slovenia has been rather volatile since the beginning of the pandemic (e.g., change of the government, numerous protests, ever-changing measures). The data was collected as part of the Slovenian Public Opinion 2020/1 survey between April and May 2020. To test whether lower support of the measures is predictive of change in voter preference (a difference between the current party preference and self-reported voting choice in the past elections), we ran a logistic regression and controlled for perceived effectiveness of the measures, political orientation of the respondents, their trust in the government, and their satisfaction with various aspects of life in Slovenia (economy, education, healthcare, democracy). The complete model had weak predictive power (pseudo R^2 s = .04–.05). The reported support of the measures was unrelated to the change in voting preference (both on party, $b = -.03$, $p = .79$, and coalition level, $b = -.08$, $p = .68$), but related to the satisfaction with the present condition ($b = -.14$, $p = .02$; $b = -.18$, $p = .05$). In separate models, those who perceived the measures as effective were less likely to change their vote, as were those ideologically closer and more trusting towards the government. While our findings suggest that politicians have little to fear in terms of voter retention when implementing the protective measures in the early stages of the outbreak, the results are undoubtedly affected by the epidemiological and political zeitgeist. The early timing of data collection might explain the weak predictive power of the model, and – along with self-reported change in voting preference, prone to reporting error and bias – presents a limitation to the study design. To enable any generalisation, future studies should thus employ a cross-national design and account for differences in severity of the outbreak and measures at various stages of the pandemic.

Keywords: voter preference; COVID-19 pandemic; protective measures; trust in government; political orientations

CHANGE MY MIND: COUNTERACTING COVID-19 FAKE NEWS WITH THREE
DIFFERENT FORMS OF CORRECTION

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In the two years since the emergence of the new coronavirus, the world has seen a proliferation of misinformation on social media. It was spread even by government officials (the US president recommended drinking bleach) and health professionals (certain medical doctors claimed that the vaccine against COVID-19 leads to infertility). Misinformation in the pandemic is especially troubling as it can directly impact behavior and have detrimental effects on public health. Typical social media platforms' response to this upsurge was to focus on discrediting the content, either by flagging it as fake or by debunking the false information with facts. We wanted to test the efficacy of these content-based interventions in a single design and added a third one aimed at debunking the misinformation by discrediting its source (e.g. by pointing to their vested interest). We first exposed all participants ($N=206$) to three pieces of fictitious news - about a new miracle cure Bamlanivimab, death in a vaccine trial, and the efficacy of colloidal silver in combating the virus. Depending on the experimental group, the news was then countered with either flagging, debunking, or source questioning. We measured the interventions' effects on the perceived accuracy of the news, willingness to share it on social media, and to discuss it with friends; we assessed all three dependent variables before and after the interventions. Our results indicate that corrections of misinformation, regardless of their type, affected belief in the accuracy of misinformation. The participants believed in misinformation less after the corrections were presented, in the case of news regarding death in a vaccine trial ($F(1) = 8.98, p < .01, \eta^2 = .04, M1-M2 = .65$) and a new miracle cure ($F(1) = 11.84, p < .01, \eta^2 = .055, M1-M2 = .71$). The effects of the corrections, regardless of their type, on the willingness to share news on social media were found, albeit inconsistently. Participants were less willing to share a piece of news regarding Bamlanivimab on social media after correction ($F(1) = 7.68, p < .01, \eta^2 = .036, M1-M2 = .36$), but more willing to share the one about death in a vaccine trial ($F(1) = 9.20, p < .01, \eta^2 = .043, M1-M2 = -.43$), contrary to our predictions. Corrections did not affect the willingness to share misinformation with friends, and there was no statistically significant difference between the three types of corrections in their efficacy. We offer potential methodological improvements for future research and discuss implications for public communication.

Keywords: Fake news, Misinformation, Debunking, Coronavirus, Infodemic

PRELIMINARY FINDINGS ON THE VALIDATION OF THE 7C SCALE OF VACCINATION READINESS IN SERBIA

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The 7C scale of vaccination readiness (Geiger et al., 2021) is a newly introduced instrument that distinguishes between seven components determining the likelihood that an individual will be willing to get vaccinated: Confidence (trust in vaccines and health authorities), Complacency (low perceived disease risk), Constraints (structural and psychological barriers), Calculation (weighting personal costs and benefits), Collective Responsibility (desire to protect others), Compliance (support for societal monitoring and punishment of the unvaccinated), and Conspiracy (belief in misinformation). We wanted to test the reliability of the forward-backward translated 7C scale in Serbia and how it relates to existing measures (construct validity) and reported vaccination behaviors (concurrent validity). Data were collected in an online survey distributed on social media in December 2021. We administered the 7C scale with three items per component (rating scale from 1 = strongly disagree to 7 = strongly agree). In the sample of $N = 404$ participants residing in Serbia (aged 18–77 years, $M = 48.4$, $SD = 12.9$), 56.44% reported being female; 2.48% had elementary or no education, 44.06% a high school education, and 53.46% higher education. Internal consistency was high for the full scale (Cronbach's $\alpha = .95$) and satisfactory for all components (.79–.94), except Calculation (.63). Confidence was related to trust in health care providers ($r = .53$), health care institutions ($r = .50$), and science ($r = .56$, all $ps < .001$). Complacency was related to subjective danger invulnerability ($r = -.35$, $p < .001$). Compliance was related to support for COVID-19 vaccine certificates ($r = .91$) and mandatory COVID-19 vaccination for adults ($r = .89$, all $ps < .001$) in Serbia. Conspiracy was related to conspiracy mentality ($r = .66$) and general vaccine ($r = .90$) and COVID-19 pandemic conspiracy beliefs ($r = .79$, all $ps < .001$). The total score was related to past vaccine hesitancy ($r = -.54$) and future intention to get vaccinated ($r = 0.86$, all $ps < .001$). It predicted higher odds of having received at least one dose ($OR = 6.61$, 95% CI [4.65, 9.41], $n = 383$, 54.05% vaccinated) as well as the third dose ($OR = 2.79$, 95% CI [1.96, 3.98], $n = 205$, 71.22% vaccinated) of the COVID-19 vaccine. The 7C scale in Serbian and its components correlated with validation constructs in the expected directions and showed promise in predicting real-world vaccination outcomes.

Keywords: vaccination readiness, vaccine hesitancy, measurement instrument validation, conspiracy theories, COVID-19 pandemic

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ATTITUDES TOWARDS VACCINATION AGAINST COVID-19 AMONG ROMA
PEOPLE FROM BELGRADE SUBSTANDARD SETTLEMENTS

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The Covid-19 pandemic affected almost the entire world during 2020. The virus, which was unknown until then and is spreading very fast, encouraged medical scientists and the pharmaceutical industry to work quickly to make a vaccine. However, after different types of vaccines were made in early 2021, the spread of "information" that vaccines are ineffective or even dangerous began, which led to mistrust and rejection of vaccination in a significant number of people. In Serbia, about 50% of the adult population has been vaccinated, while polls show that between 10 and 18% oppose vaccination. In cooperation with the NGO ADRA Serbia, we decided to gain insight into the attitudes towards vaccination against Covid-19 among Roma population from substandard settlements in Belgrade. A short questionnaire with multiple choice questions was used. The study involved 206 respondents (51.5% males) aged 18 to 61 years ($M = 38.53$; $SD = 8.34$). Data collection was performed by employees of the NGO ADRA in May 2021. The results showed that almost 70% of respondents stated that they regularly vaccinated their children with the necessary vaccines. 60.7% of respondents believe that vaccines against the Covid-19 virus provide protection, while 12.1% state that vaccines do not provide protection, and 12.1% claim that they are hazardous. Similarly, almost 60% of respondents state that they are not against vaccination, while 17% mention that they are afraid of technical factors (e.g. needles) when getting vaccinated, and 7.3% believe that vaccines can cause more severe diseases. More than 20% of respondents state that they are not informed about Covid-19 vaccines, 57.8% that they are insufficiently informed, and only 20.4% of them that they are fully informed. Finally, 83% of respondents stated that they were informed about it through the media. Although we asked just a few questions, the results provide basic insight into attitudes about Covid-19 vaccines among this population, which is densely populated in a small area, so combating the spread of the virus is a particular challenge. The findings show that opposition to vaccination is similarly widespread as in the general population, which means it is not infrequent. It can be said that awareness is worryingly low, while the media is the most crucial channel of informing. The findings suggest that the state and NGOs should make more efforts to inform and promote vaccination among this population. Future research should examine how many people in this population have been vaccinated so far.

Keywords: Covid-19 vaccines, attitudes towards vaccination, Roma people, substandard settlements in Belgrade

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STIGMA REGARDING MENSTRUAL PRODUCTS AND HELPING BEHAVIOUR: AN
OBSERVATIONAL STUDY

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Studies show that menstruation is a highly stigmatized subject in many societies, resulting in norms regarding menstrual behaviour women are expected to abide by (e.g. hiding periods). Women who are unsuccessful in hiding their menstrual status are perceived as less competent or likable. The aim of our research was to examine whether menstrual stigma would hinder helping behaviour when a girl drops a menstrual product, thus breaking the norm of menstrual secrecy. A structured observational study was conducted, in which one girl was a full participant, and three others were full observers. Data was collected at a mall via event sampling: each time the researcher would drop an object (seemingly on accident) the reactions of passers-by were registered. She would drop either an unopened pack of menstrual pads or a pack of cigarettes, which was used as the control situation. A total of 47 events were acted out with the behaviour of 70 passers-by coded, using a topographic coding scheme. We coded the gender of the participants, their helping response (ignoring/pointing out/handing back the object). In helping situations, we coded whether the helper named the object or not (You dropped your pads/You dropped something) and their signs of discomfort (e.g. avoiding eye contact). Our hypothesis was that helping would occur less frequently when pads were dropped, and that more signs of discomfort would be displayed by the helpers, as well as avoidance of naming or touching the menstrual product. We also assumed that men would be less likely to help when pads were dropped. Results confirm our expectation that helping is less likely to occur when pads are dropped ($\chi^2 = 10.405$, $p < .001$). There were no significant differences between the situations regarding signs of discomfort, which could be due to coding difficulties. However, a significant difference was found in verbal behaviour, since helpers were less likely to name pads than cigarettes ($\chi^2 = 13.556$, $p < .000$). When helping did occur, both objects were equally likely to be picked up and handed back or just indicated, contrary to our expectation that the helpers would be less willing to touch pads than cigarettes. No gender differences were found. We conclude that menstrual stigma does hinder helping behaviour even with a task as easy as the one we used. However, the stigma didn't seem to result in noticeable discomfort of the helpers, which could indicate that firmer norms exist regarding talking about menstruation, or that the norm of courtesy was prioritized over the normed distance towards menstrual products.

Keywords: menstruation, menstrual stigma, helping behaviour, altruism, observation

FACEBOOK REACTIONS TO MILENA RADULOVIĆ'S RAPE ACCUSATION - A
CONTENT ANALYSIS OF RAPE MYTHS AND VICTIM SUPPORT

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Previous research has documented a number of widespread rape myths, i.e. beliefs that normalize, justify or deny sexual violence against women. This study aimed to examine the prevalence of rape myths versus reactions to rape that are supportive of victims in public discourse. The research focused on reactions to the first social media posts by news outlets reporting a multiple rape charge that actress Milena Radulović filed against her former acting teacher Miroslav Aleksić, which has drawn significant public attention. Deductive content analysis was conducted in order to analyze the population of six Facebook posts by the five most followed Serbian daily newspapers. The units of analysis were themes covered in the comments to said posts. The sample consisted of a total of 729 units that were analyzed using frequency analysis. The results indicate that there was no significant difference in the number of units that reflect rape myths (45.13%) and those that express supportive reactions (46.78%). Among the units of analysis that referred to rape myths, most were dismissive of the accusation due to the fact that the rape happened 8 years ago (37.75%), implied that the victim benefited from rape (20.07%), claimed that the victim lied (12.24%) and denied that what had happened was rape (10.20%). As for supportive reactions, most called for severe punishment of the accused (62.34%), provided emotional support (17.99%) and affirmed the victim (16.74%). The chi-square test showed that there was a connection between the gender of the author and the type of reaction. Units related to rape myths were more often authored by men ($\chi^2 = 27.757, p < .01$), while supportive units were more often written by women ($\chi^2 = 5.492, p < .05$). The insignificant difference in the frequency of units depicting myths about rape versus those expressing support and defense of the victim implies that rape remains a controversial topic that provokes conflicting opinions. Obtained results suggest that non-supportive reactions mainly refer to the specifics of the case itself, while the most common supportive reactions are those that can be expressed to a distant, unknown person (in this case, a celebrity). Our results are consistent with previous research that indicates that men are more likely to endorse rape myths and show less support for victims than women.

Keywords: rape myths, rape victims, content analysis

GUILTY PLEASURE AND IRONIC CONSUMPTION: PSYCHOLOGICAL
CORRELATES OF CONSUMING “BAD” CULTURE

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In the time of being surrounded by all kinds of easily accessible cultural content, the criteria for their choice is not always based on quality. Thus, it is not unusual for people to enjoy content of poor quality (“trash”) while feeling guilty about doing so and constructing justifications for such behaviour. Based on the previous studies, such contents are often described as Guilty Pleasure (GP; consumption accompanied by negative feelings) and the Ironic Consumption styles (IC; consumption accompanied by ridicule and criticism). This research aimed to determine the frequency of practising these afore-mentioned styles in the sample of participants (N=298, 78% female, approx. 50% students) consuming “bad” culture. We also aim at analysing the psychological correlates of different consumption styles. Data were collected via an online survey. Consumption styles were measured using the newly constructed Likert-type scales: the GP style was measured via an 8-item scale ($\alpha = 0.74$) and IC via a 6-item scale ($\alpha = 0.70$). Theoretically relevant correlates of consumption styles, Social Comparison ($\alpha = 0.86$), Global Self-Esteem ($\alpha = 0.86$), and The Need for Cognition (NCS; $\alpha=0.89$), were measured by multi-item scales developed elsewhere. The justifications for consuming “bad” culture despite finding it inappropriate were measured by open-ended questions and examined qualitatively. The results point to significant correlations between Social Comparison and both the GP ($r = .38, p < .01$) and the IC measures ($r = .31, p < .01$); Global Self-Esteem and NCS were significantly, but negatively related to both consumption styles. GP and IC were also significantly correlated ($r = .48, p < .01$). After combining two measures of consumption styles into a fourfold typology (by median value cut-off points on GP and IC), ANOVA and Canonical Discriminant Analysis showed greater tendency towards Social Comparison among the consumers with predominant GP and those high on both styles’ measures than among those who were low on both ($F(3) = 14.17, p < .01$). It was also shown that the ‘mixed’ style (high scores on both GP and IC) was accompanied by lower self-esteem ($F(3) = 3.52, p < .05$), in comparison to those low on both measures. NCS did not significantly differentiate the groups. Additional qualitative analysis of the justifications for consuming the ‘bad’ culture indicated that it could be a coping strategy in stressful circumstances and promote well-being, which is consistent with previous studies.

Keywords: Media, Cultural Consumption, Social Comparison, Self-Esteem, The Need for Cognition

PERCEPTION OF THREAT AND SOCIAL DISTANCE TOWARDS MIGRANTS IN
SERBIA AND BOSNIA AND HERZEGOVINA

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In recent years, Europe has faced the largest influx of African and Asian migrants in recent history. Despite the fact that a small percentage of migrants want to stay and seek asylum in the region, research from BiH and Serbia show that the domicile population show mostly negative attitudes towards them. According to Integrated threat theory, threat perception contributes to pronounced prejudice and heightened intergroup distancing. We dealt with the problem of predicting social distances towards migrants in BiH and Serbia, and the role of threat in that model. The survey was conducted in March and April 2021. on a sample of 822 residents of Serbia and 288 residents of BiH, through an online survey. The instruments used included measures of social distances (7-item, $\alpha = .87$) as a criterion and a set of predictor variables that consisted of sociodemographic variables (8 separate items), general life satisfaction (1 item), migrant threat perception (4 separate items), scales of cynicism (3-item, $\alpha = .65$), anomie (2-item, $\alpha = .72$), justification of violence (2-item, $\alpha = .57$) and right-wing authoritarianism (3-item, $\alpha = .60$). Regression analysis for the whole sample offered an optimal model that explains about 74% of the variance of the results ($R^2 = .74$, $F(5,1016) = 248.522$, $p = .000$) using the variables of perceptions of migrant security threats ($\beta = .418$; $p < .01$), perception of migrant threat to culture and values ($\beta = .267$; $p < .01$), religiosity ($\beta = .098$; $p < .01$), perception of migrant threat to job market ($\beta = .075$; $p < .01$) and general life satisfaction ($\beta = -.045$; $p < .05$). The results showed that the severity and psychological dynamics of distancing from migrants are similar in Serbia and BiH. Despite the relatively small number of migrants who pass through third countries, it is obvious that there is a distinct perception of threat posed by this population. This sense of threat, in line with the assumptions of threat theory, leads to dehumanization and significant social alienation from these people on the move.

Keywords: threat perception, social distances, migrants, refugees

INTERGROUP BIAS REDUCTION: WHAT MAKES OUR INTERVENTIONS
EFFECTIVE?

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Recent line of experiments that aim to reduce intergroup bias has explored the role of groups with dual identity - i.e. whether these groups can serve as a gateway between the two conflicted groups their two identities represent. For example, Bosniaks from Sandžak can be

portrayed as a gateway group, i.e. strongly identified with both Bosniak ethnic group and Serbian national group. This was shown to reduce Serbs' prejudice towards Bosniaks in general. The prerequisite to reducing bias is making participants endorse the idea that members of the gateway group have dual identity. This can be done in two ways: (1) minority perspective – portraying minority members as experiencing strong dual identification or (2) majority perspective – describing that ingroup (IG) members mostly perceive the gateway group as dually identified. In the first case, the key component of the intervention is gateway group members' experience; in the second, it is a descriptive social norm that the IG sets. We contrasted the two interventions in a single design and tested if they were equally effective in inducing the perception of the dual identity. We also examined if participants' political orientation moderated their effectiveness. Participants ($N = 123$, ethnic Serbs) first indicated their political orientation (left-right; 11-point scale). Then they were randomly exposed to one of the interventions: (1) Dual identity experience or (2) Dual identity as a descriptive norm. Finally, they indicated how strong they found the gateway group identified with (a) Serbs and (b) Bosniaks on the 100-point scale. We calculated the dual identity score that ranged 0-100. GLM analysis revealed that the Dual identity experience intervention was more effective in inducing DI ($M = 61.3$, $SD = 18.7$) than the norm-based one ($M = 57.2$, $SD = 22.9$), $F(1,117) = 7.10$, $p = .009$, $\eta^2 = .06$. While the main effect of political orientation was not significant ($F(2,117) = 2.83$, $p = .063$), intervention type * political orientation interaction was ($F(2,117) = 4.01$, $p = .021$, $\eta^2 = .06$). More precisely, the Dual identity experience intervention was equally effective across all levels of political orientation, while the norm-based one was ineffective for the conservatives. We showed that the two types of intervention might not be equally effective in inducing the idea of dual identity and that their potential to reduce intergroup bias should be further examined. Further, it seems that individual differences moderate their effectiveness. These findings should be taken into account when applying interventions in a wider social context.

Keywords: Dual identity, Intergroup bias, Experimental intervention

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CROSS-CULTURAL PERSPECTIVE OF INTERPERSONAL CONFLICT CHARACTERISTICS AND THEIR CONNECTION TO SOCIAL RELATIONSHIPS AND WELL-BEING

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Interpersonal conflicts are one of the most prominent, daily sources of distress. Due to their possible negative outcomes, it is important to explore their characteristics and specificities in different cultural settings. In that respect, the main goal of this study was to determine cultural differences of interpersonal conflicts and conflict management strategies between

Serbia (RS) and Italy (IT), as well as, the relations of conflict characteristics to the quality of social relationships and wellbeing. The sample consists of 764 university students (NRS=288 (69% female) and NIT=476 (61% female)), age 18-30 ($M=21.54$, $SD=2.80$). Instruments include The Dutch Test of Conflict Handling, scales for measuring social relation quality and conflict frequency, Personal wellbeing index, and SPANE scale for emotional wellbeing. The study was conducted online. Statistical analyses include descriptive statistics, correlation analyses, and independent-samples t-tests. Results show that Serbian students report having better social relationships than the Italians ($MRS=4.20$, $SD=.57$; $MIT=3.85$, $SD=.72$; $t(713)=7.435$, $p<.001$, $d=0.54$) and experience conflict less frequently ($MRS=0.55$, $SD=0.52$; $MIT=1.75$, $SD=0.57$; $t(765)=29.305$, $p<.001$, $d=2.21$). Regarding conflict management strategies, Serbian students report that they use more Compromising and Problem solving strategies ($MRS=28.40$, $SD=5.00$; $MIT=26.76$, $SD=5.47$; $t(762)=4.177$, $p<.001$, $d=0.31$), as well as, Accommodating and Avoiding strategies ($MRS=18.42$, $SD=4.37$; $MIT=16.35$, $SD=4.04$; $t(762)=6.670$, $p<.001$, $d=0.49$). There are no significant differences in using the Forcing strategy ($MRS=13.26$, $SD=3.17$; $MIT=13.24$, $SD=3.06$; $t(762)=0.087$, $p=.931$, $d=0.01$). Conflict frequency negatively correlates with personal wellbeing, positive emotions and relationship quality in both samples ($rRS=-.224$, $-.274$ and $-.295$; $rIT=-.124$, $-.209$ and $-.150$ respectfully), while positively correlates with negative emotions ($rRS=.328$; $rIT=.189$). All correlation is higher in the Serbian sample. Additionally, quality of social relations in both samples is moderately connected with personal and emotional wellbeing ($rRS=.316$ and $.448$; $rIT=.294$ and $.365$). In the discussion, we consider the influence of broader social contexts (e.g. individualistic vs. collectivistic society) that contribute to conflict frequency, use of conflict management strategies, the importance of social relations, and their connection to wellbeing

Keywords: interpersonal conflicts, conflict management strategies, well-being, cross-cultural differences

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“THEY ARE GOING TO ISLAMIZE US”: INTERGROUP CONSPIRACY BELIEFS
SHAPE DISCRIMINATORY BEHAVIOR AGAINST REFUGEES AND MIGRANTS
THROUGH INTERGROUP THREAT PERCEPTIONS

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The Intergroup threat theory (ITT) proposes that perception of an outgroup (OG) as threatening to the ingroup (IG) leads to prejudice towards that OG. Prejudice can further result in discriminatory behavior against the OG. Although conspiracy beliefs (CBs) are generally considered an outcome of threat perception, some authors argue that CBs about a particular OG can serve as a generator of intergroup threat rather than its consequence. Thus, we examined how CBs about refugees and migrants shape behavior. More precisely, we tested the hypothesis that such CBs elicit perception of this OG as a threat to the IG that in turn results in higher discrimination intentions. The sample consisted of 798 participants (48% men; age 18-87 [$M = 49.3$, $SD = 16.8$]). We constructed four intergroup CBs items (5-point Likert scale, $\alpha = .82$) based on the narrative that was salient in Serbian media at the time of data collection. Participants also filled in the following scales (5-point Likert): intergroup threat perception scale that captures symbolic (two items, $\alpha = .81$) and realistic threats (three items, $\alpha = .82$), as well as a scale that captures discrimination intentions against refugees (three items, $\alpha = .77$). We also registered and statistically controlled for participants' religiosity and ethnic identification (both single-item, 7-point scale), and frequency of OG contact (positive and negative, four items). Since only 31% of participants reported having any contact with the outgroup, we computed two binary variables that indicated presence or absence of (a) positive and (b) negative outgroup contact. To test our hypothesis, we built a structural equation model (SEM) with Intergroup CBs as a predictor and discrimination intentions as an outcome. Perceptions of symbolic and realistic threat served as mediators. The model proved to fit the data well ($\chi^2(58) = 342.63$, $p < .001$, CFI = .936, TLI = .906, RMSEA = .078, SRMR = .085). The intergroup CBs predicted discrimination intentions both directly ($\beta = .21$, $p = .034$) and indirectly through the perception of refugees as a realistic threat ($\beta = .28$, $p < .001$). On the contrary, the indirect effect through symbolic threat perception was not significant ($\beta = .19$, $p = .173$). Our results confirm that CBs about a particular OG can make fertile ground for the perceptions of that OG as a threat to the IG, and this threat can further act as a booster of the intention to discriminate against the same OG. This pattern of the effects indicates that intergroup CBs should be experimentally examined as a generator of the intergroup threat, although they are traditionally seen as its outcome. It also points out the adverse outcomes that conspiratorial narratives in media can have on people's behavioral intentions.

Keywords: Intergroup conspiracy beliefs, Intergroup threat, Discrimination, Prejudice, Refugees

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THE RELATIONSHIP BETWEEN YOUTH READY FOR RECONCILIATION AND
NATIONALISM IN BOSNIA AND HERZEGOVINA**Srdan Puhalo**PRO EDUCA, Banjaluka | puhalosrdjan@gmail.com

The war in Bosnia and Herzegovina ended in 1995, but even today we can hear statements about the possibility of a new conflict. The aim of our research was to determine the connection between the readiness for reconciliation of young people in BiH and nationalism. Reconciliation means giving up anger, a desire for revenge, and resentment at those who have done something bad to you, those you love, or groups you identify with. It also implies the willingness to accept others into one's moral community by treating him or her fairly and with consideration. The research was conducted in mid-2019 on a sample of 1308 young people in BiH aged 15 to 30 years. We measured reconciliation with the scale of readiness for reconciliation and which consists of 40 items. We performed exploratory data reduction by the method of principal components analysis, with promax rotation, we singled out three factors: rehumanization, forgiveness, and mistrust. Rehumanization is highly and positively correlated with forgiveness ($r = .749$) and negatively correlated with distrust ($r = -.133$). We find a low and negative correlation between forgiveness and mistrust ($r = -.261$). We measured nationalism with 16 items and by factor analysis we singled out three factors: mundialism, national pride and chauvinism. Mundialism is negatively and lowly correlated with national pride ($r = -.125$) and chauvinism ($r = -.137$), while between national pride and chauvinism we find a high and positive correlation ($r = .619$). The obtained results find a positive and high correlation between the rehumanization of the opponent and the readiness to forgive ($r = .806$; $p < .01$) and a positive, but very low, connection with mundialism ($r = .189$; $p < .01$). The relationship between the rehumanization of distrust of others ($r = -.078$; $p < .01$), national pride ($r = -.089$; $p < .01$) and chauvinism is very low and negative ($r = -.208$; $p < .01$). Forgiveness is positively and lowly correlated with mundialism ($r = .242$; $p < .01$), and negatively and lowly with distrust of others ($r = -.353$; $p < .01$), national pride ($r = -.267$; $p < .01$) and chauvinism ($r = -.396$; $p < .01$). The correlation between distrust and mundialism is low and negative ($r = -.200$; $p < .01$), and positive and medium high in national pride ($r = .478$; $p < .01$) and chauvinism ($r = .630$; $p < .01$). Mundialism is negatively and very lowly correlated with national pride ($r = -.160$; $p < .01$) and chauvinism ($r = -.088$; $p < .01$). National pride correlates with chauvinism ($r = .553$; $p < .01$) moderately high and positive. The obtained results are quite expected and show that the expressed nationalism is an obstacle in the reconciliation of the inhabitants of BiH.

Keywords: nationalism, reconciliation, youth, Bosnia and Herzegovina.

PSYCHOLOGY OF ART

UGLY KID JOE VS. PRETTY BOY FLOYD: OWN FACE ATTRACTIVENESS THROUGH INSTAGRAM FILTERS

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With the growing popularity of Instagram, researchers are talking more often about instagramism - a specific aesthetic direction which emphasizes editing and composition of photographs that are being published. New Instagram filters are presented to users every month. They serve editing and improving the aesthetic appearance of photographs and are no longer applied exclusively to environment or nature. Filters play a significant role in creating selfies, social network users' own photographs. The aim of this research was to examine the aesthetic experience of Instagram filters in use, but also the motivation behind using these filters. Do we use filters because our own face looks more attractive with them, or because we think they will emphasize features we already find attractive? Research included 59 participants whose task was to state how attractive they find their own face, and then make an identical assessment after taking selfies using various Instagram filters. Participants used 15 filters that were separated in three groups, depending on changes they cause in the photograph. First group consisted of filters that change only color and lighting. Second group had filters that add some elements to the face (glow, specific shapes), while the third group included filters that produce specific changes on the face, such as emphasizing certain elements. Results show statistically significant difference in the assessment of the attractiveness of one's own face without filters and with filters that change color and brightness ($t(58) = -5.597, p < .01$), with filters that add elements to the face ($t(58) = 6.985, p < .01$), as well as with filters that create specific changes on the face ($t(58) = 5.476, p < .01$). However, all the differences were in favor of the face attractiveness without the use of Instagram filters. Participants initially rated their face as more attractive than when using filters to take selfies. This finding may suggest that Instagram filters are used by people who do not find their face very attractive, but tend to share photographs in which they look more attractive.

Keywords: Instagram, filters, aesthetic experience, face attractiveness

THE AESTHETIC AND SEMANTIC FUNCTION OF MUSIC IN THE INTERPRETATION AND EXPERIENCE OF AMBIVALENT FILM ENDINGS

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The objective of this research is to compare the experiences of music on the one hand, and the final film sequence that accompanies it on the other, with the aim of pointing out the concrete aesthetic contribution of music to the experience of the films' ending, as well as to investigate whether, within the music, an abstract imprint of the film story or its final sequence can be found. Films with unconventionally happy endings were used as stimuli: *500 Days of Summer* (2009) and *Her* (2013). During the first part of the experiment, participants evaluated the presence of certain characteristics in given musical and film stimuli through 30 seven-degree unipolar scales of the Likert-type semantic differential, which indicate the

degree of expression of certain characteristics. The second part of the experiment was conducted through individual conversations with participants who were asked to imagine a story that fits with the course of the music while listening to a composition from the film. Results of the first part of the experiment, through the analysis of variance, confirmed that there is a statistically significant difference between the experience of musical and film stimuli on 12 scales for the film *500 Days of Summer* (for example, for the scales *pleasant* $F(1,18) = 12.08$; $p < .05$, *uncomfortable* $F(1,18) = 14.83$; $p < .001$, *sad* $F(1,18) = 11.18$; $p < .05$, *embarrassing* $F(1,18) = 11.63$; $p < .010$, and *lively* $F(1,18) = 15.44$; $p < .001$), and on seven scales for *Her* (same examples taken: *pleasant* $F(1,18) = 14.76$; $p < .001$, *uncomfortable* $F(1,18) = 13.04$; $p < .010$, *sad* $F(1,18) = 7.53$; $p < .05$, *embarrassing* $F(1,18) = 6.01$; $p < .05$, and *lively* $F(1,18) = 5.36$; $p < .05$). Comparison of the mean values of the scales for music and film stimuli shows that all scales with positive adjectives had a higher value when it comes to musical stimuli, and vice versa - all scales with negative adjectives had a higher value when it came to film stimuli. The results of the second part of the research indicate a high degree of connotative similarity between the outlines of participants' narratives based on listening to music and the narrative of the film itself or its final sequence. The main conclusions of this research are that music with its aesthetic characteristics makes the experience of the films' ending more positive, as well as that with its metaphorical and abstract meaning, music strongly influences the interpretation of the film.

Keywords: film music, happy ending, aesthetic experience, narrative

CONTEMPORARY AND HIP-HOP DANCE CHOREOGRAPHIES: THE DIFFERENCES IN THE OBSERVERS' PHYSICAL EXPERIENCE

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Earlier explorations related to aesthetic experience indicated that there is a motivational, semantic and affective aspect of aesthetic experience. Thus, the main focus of our earlier studies related to watching dance was placed on investigating these aspects of observers' aesthetic experience. While researching these aspects questions related to the physical experience of the observers when watching dance have appeared. It turned out that little is known about the physical experience as the fourth aspect of aesthetic experience when watching dance. This research aims at investigating the differences in the observers' physical experience when watching hip-hop and contemporary dance choreographies. There were 87 students aged between 18 and 22 years ($M=19.65$, $SD=.925$, 58.6% woman) from Novi Sad School of Business participating in the study. Stimuli consisted of ten video recordings – (five of contemporary and five of hip hop dance choreographies). Participants were observing choreographies in the group and afterwards they rated their physical experience on 12 seven-point scales measuring three dimensions: Action tendency (I feel like dancing, I feel like moving, I feel vibrations and I feel vivacious), Arousal (I feel impassioned, I feel pride, I am cheerful and I feel effused) and Relaxation (I am touched, I feel warmth, I feel calm and I feel blissful). The results have shown that there is a significant main effect of Type of dance ($F(3,84) = 15.450$, $p < .001$). Univariate tests have shown that there are significant differences regarding dimension of Action tendency ($F(1,86) = 40.239$, $p < .001$) and dimension of Arousal ($F(1,86) = 17.317$, $p < .001$) between students' ratings when watching contemporary and hip hop dance choreographies. Observers rated with significantly higher

values choreographies of hip hop regarding dimensions of Action tendency ($M=3.76$, $SD=.148$) and Arousal ($M=3.38$, $SD=.088$) in comparison with choreographies of contemporary dance (Action tendency: $M=3.26$, $SD=.114$; Arousal: $M=3.11$, $SD=.111$). It was concluded that results of this study indicate that observers' physical experience of two types of dance – contemporary as a category of stage dance and hip-hop as a category of street dance differ in their tendency to move and their feeling of being impassioned when watching dance choreographies. Moreover, the connection of the results with the concept of kinesthetic empathy is discussed.

Keywords: physical experience, choreographies, contemporary dance, hip-hop.

DANCE PERFORMANCE ANXIETY – "THE DIZZYNESS OF FREEDOM"

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This paper aims at investigating anxiety of dancers before and after their performance of choreographies in front of the audience. In the study participated 6 female dancers aged between 15 and 16 years ($M=15.66$, $SD=.516$), which were students of Novi Sad Ballet school, departament of contemporary dance. Each of them performed 3 contemporary choreographies made by Aleksandra Ketig, the chief of contemporary departament. Whole performance of 18 choreographies (6 dancers x 3 choreografies) lasted 1:30h. Dancers performed choreographies in balanced order. Before the beging o f the performance all dancers filled out Spielberg's State – Trait Anxiety Inventory (it was used Serbian adaptation of this Inventory made by Mihić & Novović, 2018). Furthermore, after the performance was ended they made their evaluations again on the same instrument. Results have shown that scores after the performance on the anxiety invetory are lower than those before the performance started (dancer 1 – before: 40 after: 28; dancer 2 – before: 48 after: 27; dancer 3 – before: 43 after: 41; dancer 4 – before: 37 after: 26; dancer 5 – before: 32 after: 22 and dancer 6 – before: 50 after: 30; M before= 41.66, $SD= 6.77$; M after= 29.00, $SD=6.44$). Due to the small number of subjects, we used nonparametric tests to examine differences in pre-post anxiety. Sing test showed that diferences are significant at $p < .031$. Results of Wilcoxon Signed Ranks Test also showed significan diferences $Z = -2.201$, $p < .028$ (Mean Rank=3.50; Sum of Ranks=21.00). The results are discussed in the contex of the quality of the dancers' performance and compared with previous findings on the same subject. The limitations of the study concerning small sample are clearly stated. In the conclusion the relationship between performance anxiety and dance are mentioned.

Keywords: anxiety, performance, dancers, contemporary choreographies

KATARINA MARIĆ FOUNDATION

IZMEĐU DVA POREKLA: PROCES USKLAĐIVANJA ETNIČKIH IDENTITETA KOD
OSOBA IZ SRPSKO-HRVATSKIH MEŠOVITIH BRAKOVA

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U ovom istraživanju se pošlo od pretpostavke da osobe koje potiču iz srpsko-hrvatskih mešovitih brakova imaju izazov da u kontekstu implicitnih i eksplicitnih tenzija između dve etničke zajednice usklade dva potencijalno konfliktna etnička identiteta. Iako se socijalna psihologija bavi konfliktnim identitetima, obično ovom fenomenu pristupa kao statičnom i meri aktuelni doživljaj pojedinaca ili način na koji ih drugi opažaju. U ovom istraživanju bavili smo se upravo *procesom* usklađivanja etničkih identiteta i to tako što smo se fokusirali na strategije etničke identifikacije, konkretna iskustva i događaje koji su oblikovali ovaj proces, na osobe koje su imale važnu ulogu u njemu i kulturne resurse koji su bili značajni za etničku identifikaciju. Kako bismo ostvarili ovaj cilj bili su nam potrebni teorijski koncepti kulturno-istorijske perspektive, u okviru koje se iznose alternativne pretpostavke o identitetu, i to tako što se ističe njegova narativna priroda. U ovom istraživanju je korišćena kvalitativna metodologija i fokus je bio na narativima ispitanika o iskustvu odrastanja u srpsko-hrvatskom mešovitom braku, a uzorak je činilo 5 muških i 3 ženska ispitanika rođenih tokom devedesetih godina koje su obeležene brutalnim konfliktima između Srbije i Hrvatske. Rezultati analize narativa ispitanika nam sugerišu da etničke identitete ne treba posmatrati kao statične i fiksne entitete, već kao rezultate dinamičkih procesa i preispitivanja srpstva kao datosti, koju nam sredina nameće. Rezultati pokazuju da je većina ispitanika u uzorku prošla kroz ovaj proces i da se kao krajnji rezultat ovih procesa opredelila za specifičnu identitetsku poziciju. Možemo razlikovati četiri pozicije, odnosno možemo reći da su se ispitanici opredelili da formulišu kosmopolitski, jugoslovenski, srpsko-hrvatski ili jednu integralniju formu dominantnog srpskog identiteta. U ovom istraživanju je takođe otkriveno da uprkos tome što je kod izvesnog dela ispitanika proces formiranja identiteta podrazumevao i izvesne konflikte, ovi konflikti se nisu ticali samo toga na koji način će oni uskladiti srpski i hrvatski identitet, već se pre svega odnose na pitanje na koji način će se odupreti i napraviti otklon od rigidnog srpskog identiteta kako bi izgradili etnički identitet koji je inkluzivniji. Upravo ovakvi nalazi sugerišu da je bilo potrebno promeniti fokus samog istraživanja sa procesa usklađivanja srpskog i hrvatskog identiteta, na proces formiranja jednog integralnijeg etničkog identiteta. Ponuđene su i smernice za buduća istraživanja, koja se pre svega odnose na to da, kako bi se još temeljnije sagledao proces formiranja etničkog identiteta, buduća istraživanja je poželjno vršiti na populaciji ispitanika kod kojih ovaj proces još uvek nije okončan ili da sam uzorak treba da obuhvata i ispitanike koji nisu kritički pozicionirani prema svom iskustvu.

Ključne reči: usklađivanje etničkih identiteta, formiranje etničkog identiteta, mešoviti brak, Srbija, Hrvatska, kvalitativna metodologija, analiza narativa

MORBIDNA ZNATIŽELJA: PSIHOMETRIJSKA PROVERA I VALIDACIJA
KONSTRUKTA

Student:

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Horor filmovi i dokumentarci o serijskim ubicama su danas izuzetno gledani. Postoje brojna objašnjenja ove tendencije, a jedno od njih je da u osnovi ove tendencije stoji dispozicija Morbidna znatiželja tj. crta koja stoji u osnovi interesovanja za konzumiranjem sadržaja koji su u vezi sa opasnim ili pretećim fenomenima. Najpoznatije operacionalizacije su Skala znatiželje povodom morbidnih događaja, za koju se pokazalo da ima brojna ograničenja, i novija i sveobuhvatnija operacionalizacija – Skala morbidne znatiželje. Ciljevi ovog rada su bili psihometrijska evaluacija Skale morbidne znatiželje, provera faktorske strukture konstrukta, testiranje ireducibilnosti konstrukta Morbidne znatiželje na Traženje senzacija, bazičnu (HEXACO + Dezintegracija) i mračnu (Mračna tetrađa) strukturu ličnosti, ispitivanje inkrementalnog doprinosa predikciji straha od smrti, uživanja u određenim žanrovima i učestalosti gledanja pornografskog sadržaja povrh drugih crta uključenih u ovo istraživanje, kao i ispitivanje mogućnosti razlikovanja polova po ovom konstrukt. Rezultati su ukazali na zadovoljavajuće metrijske karakteristike skale, dobar fit četvorofaktorskog modela (Umovi opasnih ljudi, Interpersonalno nasilje, Sakaćanje tela i Natprirodna opasnost), kao i na mogućnost svodjenja Interpersonalnog nasilja na Vikarijski sadizam. Morbidna znatiželja je ostvarila inkrementalni doprinos predikciji uživanja u žanrovima centriranim oko neke pretnje (horor, triler, krimi) i učestalosti gledanja pornografskog sadržaja, ali ne i predikciji straha od smrti. Muškarci su po očekivanju bili morbidno znatiželjniji od žena. Imajući sve u vidu, čini se da konstrukt Morbidne znatiželje odlikuju dobra konstrukt, prediktivna i dijagnostička valjanost, dok Skala morbidne znatiželje predstavlja korisno i precizno sredstvo za procenu ove tendencije. Ipak, ostaje otvoreno pitanje da li se na osnovu ovog konstrukta mogu predvideti i ishodi koji nisu specifično vezani za sam sadržaj konstrukta.

Ključne reči: Morbidna znatiželja, HEXACO, Dezintegracija, mračna tetrađa, Traženje senzacija, horor

MODUSI ESTETSKE OBRADE, OSOBINE LIČNOSTI I AGRESIVNOST KAO
PREDIKTORI PREFERENCIJA TETOVAŽA

Studentkinja:

Miljana Nikolić

Mentor:

Prof. dr Nebojša Milićević

Cilj istraživanja je ispitati da li je na osnovu modusa estetske obrade (H-harmonija, R-redundantnost, D-distantnost), osobina ličnosti i agresivnosti moguće predvideti preferencije tetovaža. Stimulusi su odabrani tako što je uzorak od 93 ispitanika ($\bar{Z}=87.1\%$), prosečne starosti 22.73 ($SD=3.08$), procenjivao dopadljivost 53 motiva tetovaža. Potom je faktorskom analizom ekstrahovano četiri faktora: motivi sa ličnim i romantičnim značenjem, nerealistični i nasilni, prirodni i realistični, kao i religijski motivi. Za svaki faktor je odabrano po šest tetovaža, tri u boji i tri crno-bele, koje su u drugoj fazi izlagane ispitanicima na procenu. U drugom delu istraživanja korišćen je prigodan uzorak sačinjen od 100 ispitanika ($M=17\%$, $\bar{Z}=83\%$), prosečne starosti 26.18 ($SD=7.15$). Korišćeni su sledeći instrumenti: skale semantičkog diferencijala koje operacionalizuju H, R i D nivo (Pejić i Milićević, 2007), inventar Velikih pet (John & Srivastava, 1999), BODH upitnik za merenje agresivnosti (Dinić, Mitrović i Sederevac, 2014) i jedna skala semantičkog diferencijala za procenu dopadljivosti.

Za obradu podataka korišćena je hijerarhijska linearna regresija, gde je kriterijum dopadljivost, dok prediktore čine modusi estetske obrade (ubačeni u prvom koraku), osobine ličnosti (drugi korak) i agresivnost (treći korak).

Rezultati vezani za preferenciju *motiva sa ličnim i romantičnim značenjem* (Model 1, Model 2, Model 3: $p<.05$; Model 3: $R=.75$, $F=5.40$, $p=.00$) pokazuju da su značajni prediktori D nivo ($\beta=.69$, $t=3.93$, $p=.00$) i hostilnost ($\beta=.36$, $t=2.33$, $p=.03$). Značajni prediktori *nerealističnih i nasilnih motiva* (Model 1 i Model 3 $>.05$; Model 2: $p<.05$; Model 2: $R=.46$, $F=3.07$) su D nivo

($\beta=.48$, $t=2.59$, $p=.01$), otvorenost ($\beta=.48$, $t=3.04$, $p=.00$) i savesnost ($\beta=-.39$, $t=-2.10$, $p=.04$).

Značajni prediktori preferencije tetovaža sa *prirodnim i realističnim motivima* (Model 1, Model 2 i Model 3: $p<.05$; Model 3: $R=.62$, $F=3.36$, $p=.00$) su D nivo ($\beta=.77$, $t=3.89$, $p=.00$) i hostilnost

($\beta=-.42$, $t=-2.29$, $p=.03$). Statistički značajni prediktor tetovaža sa *religijskim motivima* (Model 1, Model 2 i Model 3 $p>.05$) je D nivo ($\beta=.45$, $t=2.35$, $p=.02$). Rezultati pokazuju da ne postoji statistički značajna razlika između muškaraca i žena u pogledu preferencija tetovaža.

Može se zaključiti da viši nivoi hostilnosti i Distantnosti predviđaju dopadanje tetovaža sa ličnim i romantičnim značenjem, viši nivoi Distantnosti i otvorenosti, i niži nivoi savesnosti, predviđaju preferenciju nerealističnih i nasilnih motiva, D nivo i hostilnost predviđaju preferenciju prirodnih i realističnih motiva, dok viši nivoi Distantnosti predviđaju preferenciju religijskih motiva.

Ključne reči: agresivnost, osobine ličnosti, H, R, D, preferencija tetovaža

VREME LATENCIJE KAO INDIKATOR DAVANJA SOCIJALNO POŽELJNIH ODGOVORA NA UPITNICIMA LIČNOSTI

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Luna Radević

Mentorka:

Prof. dr Bojana Dinić

Socijalno poželjno odgovoravanje se odnosi na tendenciju davanja odgovora koji bi ispitanika prikazali u što boljem svetlu pred drugima. Ova odgovaračka pristrasnost može ozbiljno ugroziti validnost upitnika ličnosti, te je važno razviti adekvatne strategije za njenu detekciju i kontrolu. Jedan od načina detekcije je preko vremena latencije odgovora, pri čemu se mogu razlikovati tri modela za objašnjenje vremena latencije: 1) prema Modelu self-scheme generisanje socijalno poželjnog odgovora je duže od iskrenog; 2) prema Modelu semantičke evaluacije socijalno poželjni odgovor je manje kognitivno zahtevan te zahteva kraće vreme latencije; 3) prema interaktivnom Modelu usvojene sheme vreme latencije odgovora zavisi od trenutno aktivirane sheme, te onaj odgovor koji je kongruentan sa aktiviranom shemom, biće generisan brže. Cilj ovog istraživanja bio je ispitivanje razlika u vremenu latencije odgovora na upitnicima HEXACO-60 i crta Mračne trijade (Dvanaest žigosanih Mračne trijade) u zavisnosti od indukcije sheme (iskreno i socijalno poželjno odgovoravanje) i poželjnosti odgovora (poželjan i nepoželjan). U istraživanju je učestvovalo 158 ispitanika (37.3% muškog pola). Osnovni rezultat ovog istraživanja je da su pretpostavke Modela usvojene sheme potvrđene u slučaju odgovora na stavke HEXACO-60. U slučaju indukovanja sheme socijalne poželjnosti, vreme latencije poželjnog odgovora je značajno kraće od nepoželjnog, dok se usred iskrenog odgovaranja, razlike u odnosu na poželjnost odgovora ne detektuju. Kada su odgovori na upitniku crta Mračne trijade u pitanju, nalazi su manje jasni i pre govore u prilog Modela self-scheme. Pored toga, rezultati pokazuju da pod instrukcijom davanja socijalno poželjnih odgovora dolazi do iskrivljavanja skorova na svim upitnicima u smeru socijalne poželjnosti, sa izuzetkom narcizma na kojem nema značajnih razlika u skorovima u zavisnosti od instrukcije. Takođe, vreme latencije je bilo kraće za skale Poštenje-skromnost, Prijatnost i Svesnost pod instrukcijom davanja socijalno poželjnih odgovora, a duže u slučaju ostalih skala. Dodatno, efekat moderacije skala upravljanja utiskom je zanemarljiv.

Ključne reči: socijalno poželjno odgovoravanje, vreme latencije, HEXACO-60, Mračna trijada, Dvanaest žigosanih Mračne trijade

UTICAJ INDUKOVANE ANKSIOZNOSTI I BESA NA STAVOVE O MIGRANTIMA

Studentkinja:

Iva Konc

Mentorka:

Dr Bojana Bodroža

Ranija istraživanja su pokazala da emocije mogu da imaju uticaja na stavove, poput političkih stavova. Ovo istraživanje je imalo za cilj da proveriti da li eksperimentalno indukovane emocije besa i anksioznosti mogu da dovedu do promene u stavovima o migrantima kod ispitanika, kao i da li te promene zavise od opšte političke orijentacije osobe. Na osnovu pregleda literature očekivano je da će anksiozni ispitanici ispoljavati negativnije stavove od drugih ispitanika. Očekivano je da će besni ispitanici imati tendenciju da ekstremizuju svoje prethodne stavove, tj. da će konzervativni ispitanici ispoljavati još negativnije stavove prema migrantima, dok će liberalni ispitanici ispoljavati više promigrantske stavove. Da bi se ove pretpostavke proverile korištena je eksperimentalna procedura. Ispitanici su pre svega dali podatke o svojoj političkoj orijentaciji i opštem stavu o migrantima, nakon čega su im eksperimentalno indukovane emocije. Stimulusi su bili video isecci koji su izabrani na osnovu pilot studije koja je pokazala da su efikasni u indukovanju željenih emocija.

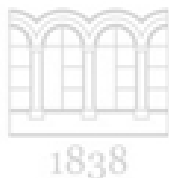
Nakon eksperimentalne procedure ispitanici su stavovi o migrantima. U istraživanje je bilo uključeno 195 ispitanika podeljenih u tri grupe, dve eksperimentalne, jedna kojoj je indukovano bes (73 ispitanika) jedna kojoj je indukovana anksioznost (67 ispitanika) i jedna kojoj nisu indukovane emocije tj. kontrolna grupa (55 ispitanika). Za proveru glavnih hipoteza korištena je hijerarhijska regresiona analiza sa 4 grupe prediktora 1) pol; 2) politička orijentacija i pretest stavova o migrantima; 3) eksperimentalna grupa; 4) interakcije političke orijentacije i eksperimentalnih grupa. Jedino je druga grupa prediktora imala značajan doprinos objašnjenju kriterijuma, pri čemu je doprinos opšteg stava o migrantima imao veći doprinos, ali je doprinos političke orijentacije takođe bio značajan. Oba prediktora ostala su značajna u svim koracima modela. Očekivani uticaj emocija na stavove nije dobijen u ovom radu, a nije dobijen ni značajan interakcijski efekat emocija i prethodne političke orijentacije. Rezultati rada sugerišu da incidentalne emocije besa i anksioznosti ne vrše direktan uticaj na stavove o migrantima, a njihov uticaj ne zavisi ni od početne političke orijentacije osobe. Ovaj nalaz je u suprotnosti sa ranijom literaturom i postavljenim hipotezama.

Ključne reči: anksioznost, bes, stavovi o migrantima, politički stavovi, politička orijentacija

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