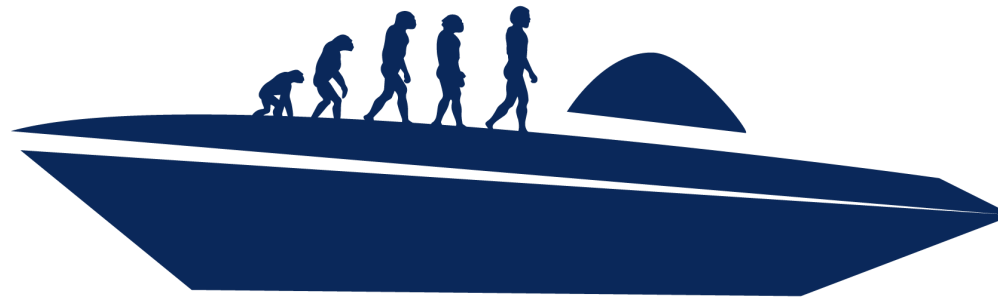




The Polish Society of Human
Sciences and Evolution



UNIVERSITY OF SILESIA
IN KATOWICE



The 10th Conference of The Polish
Society for Human and Evolution Studies

BOOK OF ABSTRACTS

17 – 20 SEPTEMBER 2024

PLENARY SESSIONS

Virpi Lummaa (University of Turku, FI)



Kin networks and natural selection in changing societies



Social ties influence demographic behaviours: whom we live with, whether we move or stay, how many children we have and when, and how long we live for. However, our social networks are thought to have radically changed from the traditional multi-generational, kin-centered networks of our evolutionary (and recent) past to smaller, more dispersed and less kin-directed networks of today thanks to the drastic economic and demographic transitions of the 19th and 20th centuries. When and how exactly changed economy, lower fertility, increasing lifespan, and regional migration altered our social networks remains poorly described, as does how these changing network structures in turn fed back to fertility, wellbeing and longevity. Here, we combine historical genealogical records with modern register data from eighteenth- to twentyfirst-century Finland to determine how human social networks transformed with the modernisation of societies and associated with reproduction, cause of death and lifespan at different times?

PLENARY SESSIONS

Martin Tovee (Northumbria University, UK)



Visual Cues to judgements of physical attractiveness

How do humans judge attractiveness in one another? Certain visual cues derived from physical features of a person's body seem to predict attractiveness ratings and ideal body judgements. In this lecture I will review the evidence for adiposity (frequently indexed through the body mass index or BMI) as a predictor for attractiveness judgements, and the malleability of what exactly is regarded as attractive, both within a culture and across cultures.

Our studies suggest that the cultural ideal as transmitted through the media can alter the ideal for one's own body and that of one's potential partner irrespective of the geographical area, physical environment or pre-existing local culture. Moreover, the degree to which one engages with this cultural ideal leads to different ideals developing within a culture and environment. Considering these findings, I will discuss whether BMI is a good measure to use in this regard, and whether body composition (the ratio of muscle mass to adipose tissue) is a better predictor. Additionally, I will consider whether the current stimuli used to assess physical attractiveness are appropriate for cross-cultural studies. Different ethnic groups have a different body composition at a given BMI and a different pattern of fat deposition. Our recent studies suggest that the use of stimuli based on anthropometric data from a different ethnic group to the one being tested may introduce systematic errors in judgements. Finally, I will consider future directions for research in this field.

PLENARY SESSIONS

Jenny Tung (Max Planck Institute, DE)



A proper study for mankind: understanding the human condition through the lens of other primates

Although the fossil record tells us that we were once one of multiple hominin groups to walk the earth, humans today are the only remaining representative of our lineage. Nonhuman primates, where traits that fossilize poorly can still be directly observed, therefore serve as a crucial source of insight into human behavior and evolutionary history. In this lecture, I will illustrate two ways in which this idea inspires my group's work. First, I will present findings from our ongoing studies of hybridization in wild baboons. At the genetic level, these studies reveal intriguing parallels with archaic hominin admixture; at the phenotypic level, they show how the causes and consequences of admixture are linked to trait variation. Second, I will discuss the evidence that social factors—early life adversity, social status, and social affiliation in adulthood—are not only important to life outcomes to humans, but also a key determinant of fitness, with deep roots in our evolutionary history. Using examples from our work, I will highlight how research in other primates can help highlight the pathways that explain these profound connections.

PLENARY SESSIONS



Greg Bryant (University of California, Los Angeles, USA)



The evolution of human laughter

Laughter is a universally produced and recognized nonlinguistic social vocalization that occurs primarily in conversational interaction and is homologous to play vocalizations across mammalian species. But laughter in humans has unique features as well, suggesting a suite of species-specific communicative functions assimilated with language use and sophisticated social cognition. In this talk I will describe several lines of research over the last decade exploring the forms and functions of spontaneous and volitional laughter as well as colughter, revealing its role both within and between interactive groups.



PTNCE AWARD WINNER



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Marta Kowal (University of Wrocław, Poland)

The pursuit of beauty: Understanding the who, why, and how intensely from a cross-cultural perspective

People across the globe and throughout history have gone to great lengths to enhance their physical appearance. Evolutionary psychologists and ethologists have primarily sought to explain this phenomenon through mating preferences and strategies. In a series of studies, we employed quantitative and qualitative approaches to examine one of the most popular evolutionary hypotheses for beauty-enhancing behaviors. Our goal was to investigate the 'what', 'how intensely,' and 'why' behind this phenomenon. Study 1 (n = 121) identified the specific activities people engage in to enhance their attractiveness. Longitudinal Study 2 (n = 367 diary entries) confirmed that these activities are frequently performed on an average day. Large-scale cross-cultural Study 3 (n = 93,158) focused on identifying variables that predict time spent on enhancing one's physical attractiveness. In Study 4, semi-structured in-depth interviews with members of four distinct societies, including the Cook Islands, Guatemala, Pakistan, and Poland (n = 96) were conducted to draw a more nuanced picture of physical-attractiveness enhancing behaviors. Consistent with evolutionary theories, the results provided evidence that women devote more time than men to the pursuit of beauty, albeit with small variations. Furthermore, aligning with basic principles of mate choice, this research delineated fundamental motives driving appearance enhancement: inter-sexual and intra-sexual competition. In conclusion, physical attractiveness enhancement is a ubiquitous practice observed across all studied cultures.



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SESSION 1

PARENTHOOD AND BIOLOGICAL AGE



Urszula Marcinkowska (Jagiellonian University, Krakow, PL)
Anna Ziomkiewicz (Jagiellonian University, Krakow, PL),
Anna Apanasewicz (Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Science, PL),
Aleksandra Ciochoń (Jagiellonian University Medical College, PL),
Magdalena Mijas (Jagiellonian University Medical College, PL),
Magdalena Klimek (Jagiellonian University Medical College, PL),
Dariusz P. Danel (Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Science, PL)

Maternal anxiety and prenatal support predict pregnancy outcomes during the pandemic - evolutionary perspective

According to the theoretical prediction of the smoke detector principle, heightened anxiety as a personality trait could lead to better survival and reproductive success in unpredictable environments. Yet published studies suggest that maternal anxiety negatively affects gestation and birth outcomes, which may lead to decreased reproductive success. To resolve this conundrum, we studied the association between maternal anxiety and birth outcomes during the COVID-19 pandemic. Data collected from 1080 expectant mothers from the Corona Mums Project included maternal trait anxiety (STAI X2), perceived emotional support (PES), duration of gestation, and infant parameters at birth taken from hospital health records. After adjusting for covariates, multiple regression models showed that STAI X2 positively predicted infant birth weight ($\beta=0.07$, $p=0.023$) and length ($\beta=0.08$, $p=0.010$). PES positively predicted only birth weight ($\beta=0.06$, $p=0.048$). Neither of these factors was significantly related to duration of gestation, although the association with PES was of borderline significance ($\beta=0.06$, $p=0.053$). The results suggest that maternal increased ability to detect threats, indicated by her trait anxiety during the unpredictable conditions of COVID-19, was associated with greater infant size at birth. This in turn may improve infant survival and maternal reproductive success, implying that increased trait anxiety could be adaptive during environmental threats.

SESSION 1

PARENTHOOD AND BIOLOGICAL AGE



Agnieszka Żelaźniewicz (University of Wrocław, PL),
Judyta Nowak-Kornicka (University of Wrocław, PL),
Bogusław Pawłowski (University of Wrocław, PL)

Androgen receptor sensitivity and biological age markers in men

Evolutionary theories predict that inter-individual health, aging, and lifespan differences stem from individual trade-offs between reproductive and somatic investments. In men, these trade-offs are primarily regulated by androgens, which enhance reproductive effort and intra-sexual competition by increasing attractiveness, encouraging mating behaviors, increasing libido, and promoting more aggressive competition for mates. However, elevated androgen levels can suppress immune function, increase oxidative stress, and elevate the risk of cardiovascular disease. However, many studies show contradictory results, including research verifying the assumptions of the immune- or oxidative handicap in men resulting from high androgen levels. A possible reason for these conflicting results might be the oversight of the role of androgen receptor (AR) sensitivity in regulating these relationships. Variations in CAG codon repeat number in the AR gene appear to modulate the phenotypic effects of androgens, with shorter repeat lengths associated with higher AR sensitivity and greater androgenic effects per unit androgen. This study aimed to verify if higher AR sensitivity contributes to lower somatic investment, higher long-term androgen exposure, and greater total testosterone costs, resulting in faster aging. The study included 135 healthy men with a mean age of 35.43 ± 3.62 years. Androgen receptor sensitivity was assessed based on CAG repeats in exon 1 of the AR gene (AR CAGn). Biological age was evaluated based on s-klotho, DHEA/S, inflammatory (IL-6, hs-CRP), and oxidative stress markers. Body adiposity, testosterone, cortisol levels, health, and lifestyle factors were controlled. We found no relationship between AR CAGn repeats, indicating androgen receptor sensitivity, and biomarkers of biological age, also when controlled for lifestyle factors, body adiposity, health, and cortisol level. Also, we found no interaction between AR CAGn repeats and testosterone levels on biological age markers. The study shows no effect of AR CAGn repeats on the pace of aging of men between 30-45 years.

SESSION 2

FACE PERCEPTION



Benedict C Jones (University of Strathclyde, UK),
Junzhi Dong (University of Strathclyde, UK),
Kathlyne Leger (University of Strathclyde, UK),
Anthony J Lee (University of Stirling, UK),
Alex L Jones (Swansea University, UK),
Yasaman Rafiee (University of Strathclyde, UK),
Zuzana Elliott (University of Strathclyde, UK),
Lisa M DeBruine (University of Glasgow, UK),
& Victor Shiramizu (University of Strathclyde, UK)

Consensus in social judgments of faces across world regions is driven by effects of distinctiveness on perceptions of prosociality, rather than effects of masculinity

Social judgments of faces influence important social outcomes. Although many researchers have argued that facial masculinity plays a key role in perceptions of prosociality and dominance, whether these effects are consistent among people from different world regions is highly contentious. Consequently, we investigated possible relationships between masculinity and face ratings made by 11,484 participants from eleven world regions (Africa, Asia, Australia and New Zealand, Central America and Mexico, Eastern Europe, Middle East, Scandinavia, South America, United Kingdom, United States and Canada, Western Europe). Surprisingly, masculinity did not significantly predict perceived prosociality or dominance in any regions. By contrast, facial distinctiveness (i.e., atypicality) was significantly and negatively correlated with prosocial perceptions in all regions. Collectively, our results suggest that consensus in social judgments of faces among people from different world regions is driven by the effects of distinctiveness on prosocial perceptions (i.e., an “anomalous-is-bad” stereotype), rather than the effects of masculinity.

SESSION 2

FACE PERCEPTION



Petr Tuřeček (Charles University, Prague, CZ),
Viktor Černý (Charles University, Prague, CZ),
Mame Yoro Dialo (Academy of Sciences of the Czech Republic; Charles University, Prague, CZ),
Ngoné Cissé (Université Cheikh Anta Diop de Dakar, SN),
Šimon Pokorný (Charles University, Prague, CZ),
and Karel Kleisner (Charles University, Prague, CZ)

Violence Triggers Preference for Masculine Faces: Evidence from Senegal

It has been suggested that in threatening environments, women should prefer more masculine males as romantic partners. Men may show similar preference when it comes to coalition partners. Empirical evidence for this hypothesis, however, has been weak or inconsistent, primarily because most experimental research has focused on elevating the perceived danger from other males through virtual threats.

This study investigates whether personal experiences with violence alter the preference for masculine features in 326 Senegalese participants presented with pairs of manipulated facial photographs of West African men (one more feminine, one more masculine), and asked to indicate which face is more attractive (to women) or more trustworthy (to men).

The findings reveal a strong impact of violence exposure on facial feature preferences. Those who experienced violence, particularly physical violence, showed a higher preference for masculinized faces (up to 95% in women, 82% in men) compared to the baseline (57% in women, 63% in men). This difference is proposed to reflect an adaptive strategy, potentially prioritizing physical protection in settings with a higher incidence of violent confrontations. The effect diminishes over time, suggesting a dynamic interplay between innate predispositions and environmental influences on aesthetic preferences.



SESSION 2

FACE PERCEPTION



Juan Olvido Perea-García (Leiden University, NL),
Daisy Berris (Leiden University, NL),
Jingzhi Tan (Leiden University, NL),
Mariska E. Kret (Leiden University; Leiden Institute for Brain and Cognition, NL)

Psychological effects of perceived pupil size and iris brightness cannot be assessed in isolation

Despite the tight link between the visibility of the iris and pupil, the perceived effects of these two have been studied largely in isolation. We demonstrate, across two experimental studies, that the effects of perceived pupil size are dependent on the visibility of the iris. In a first study, our participants donated more and had more positive impressions of portraits of non-human primates when these were manipulated to appear having larger pupils. Post-hoc inspection of our data suggested that the difference was greater for species with more conspicuous irises. In a second study, we concomitantly manipulated iris brightness and pupil size. Brighter irises and larger pupils elicited greater donations. Participants rated photographs with brighter irises as cuter, more attractive and friendlier, but only when they had dilated pupils. Our results have methodological implications for studies manipulating eye appearance, and help interpret results from previous studies.



SESSION 2

FACE PERCEPTION



Łukasz Piotr Pawelec (Wrocław University of Environmental and Life Sciences, Wrocław, PL),
Anna Lipowicz (Wrocław University of Environmental and Life Sciences, Wrocław, PL)

Relationships between voice features and body build and composition in Polish men and women

The voice emission in living organisms is explained by the source-filter theory. This is an important biological signal, containing information about the speaker's sex, age, health and body physique. The aim of this study was to evaluate the relationships between voice quality and body build and composition in adults. Data were collected from 205 participants (81 men), in the form of voice recordings, anthropometric features and body composition analysis. Significant relationships were found between voice parameters and body build/composition, differing between sexes. Men with greater weight and body circumferences were characterized by higher voices and greater instability. Men with greater body height had more stable voices. In women, on the other hand, relationships of the opposite direction were observed - higher body weight and larger body girths meant higher stability and voice intensity. In contrast, taller women had lower voices. In the case of body proportions, it was shown that men with H-shaped figures had greater voice instability. Men with wider shoulders (V-shaped) were characterized by higher voices and shorter maximum phonation time (MPT). Women with V-shaped figures were characterized by higher voice instability, higher tone and lower voice volume. The voices of women who had H-shaped silhouettes were louder, lower and more stable. Men with greater fat mass (FM) had voices that were higher and more unstable. In contrast, those with greater fat-free mass (FFM) were characterized by lower voices. Women with higher FM had more stable and louder voices, while women with higher FFM were characterized by longer MPT. The observed results demonstrate a significant association between voice and body build/composition while the direction of this relationship is different in men and women. The results may be useful for doctors and forensic professionals.



SESSION 3

DISGUST, THREATS, AND DANGER



Aleksandra Szymków (SWPS University, Warsaw, PL)
Natalia Frankowska (SWPS University, Warsaw, PL)
Aleksandra Tołopiło (SWPS University, Warsaw, PL)
Jakub Zgutka (SWPS University, Warsaw, PL)

Perceived Similarity, Pathogen Threat, and Social Distance: The Influence of the Behavioral Immune System on Migration Attitudes

The Behavioral Immune System (BIS) functions as a reliable defense mechanism, effectively detecting and preventing potential sources of infection. However, it can also lead to prejudice against individuals perceived as different from ourselves, particularly those from outside our local environment. This is because foreigners may carry non-local pathogens that pose a greater risk to one's physiological immune system. Therefore, deviating from the "prototypical look" can be partly processed as a cue of infectiousness. The current project tested the similarity hypothesis (see Bressan, 2021) in the context of two migration crises that occurred during the COVID-19 pandemic in Poland. In two studies, we measured attitudes towards Ukrainian refugees (Study 1; N = 1158) and asylum seekers from the Belarus-EU border (Study 2; N = 734). We predicted and confirmed that: 1) Similarity is associated with the perception of pathogen threat – the more dissimilar someone is to us/our group, the greater the perceived threat, 2) Perceived threat is linked to the attitude towards a given social group – the greater the threat, the less warm the feelings, and 3) Evaluation of the group (warm/cold) translates into preferred distance/pro-immigration attitudes – the colder the feelings towards the group, the greater the desire to distance oneself and the less positive the pro-immigration attitudes. These results underscore the profound impact that perceived pathogen threats can have on social attitudes and behaviors. By highlighting the underlying mechanisms driving prejudice and social distancing, the research emphasizes the importance of addressing these biases, particularly in times of crisis.



SESSION 3

DISGUST, THREATS, AND DANGER



Karolina Kasza (University of Silesia, Katowice, PL),
Łukasz Jach (University of Silesia, Katowice, PL),
Mateusz Hohol (Jagiellonian University, Krakow, PL)

Dangerous means larger. People's responses about the size of animals depends on whether they are dangerous to humans

The spatial numerical association of response codes effect (SNARC) involves responding more quickly to small numbers with the left hand and large numbers with the right hand, which is explained by the mental image of number line. Similar effects were observed in days of the week, letters of the alphabet, and pitch of sounds. However, less is known about the mental axis reflecting the size of physical objects, for example, animals. In our study (N = 100 participants), we asked participants to decide whether the animal whose name was presented on the screen was smaller or larger than a sheep. Moreover, we divided the presented animals into categories: dangerous to humans (e.g. viper, tiger, and gorilla) and harmless to humans (e.g. hamster, cow, and donkey). We analyzed data in a 2 (animal size: smaller/larger than a sheep) × 2 (threat to humans: yes/no) × 2 (responding hand: left/right) ANOVA analysis. We revealed main effect of threat to humans: respondents answered more quickly about dangerous animals than non-dangerous ones. Interaction of threat to humans and responding hand was also significant: participants responded about harmless animals faster with their right hand than their left hand; moreover, they responded with their left hand faster about dangerous animals than non-dangerous animals. However, the most interesting was interaction of animal size and threat to humans: participants responded faster about smaller animals when they were harmless than when they were dangerous, and they gave faster answers about larger animals when they were dangerous than when they were harmless. Our data suggest that people tend to overestimate sizes of dangerous animals. People are faster at accurately categorizing large and dangerous animals; however, accurately categorizing small and dangerous animals takes longer because it requires refraining from incorrectly categorizing them as large.

SESSION 3

DISGUST, THREATS, AND DANGER



Michael Stirrat (York St. John University, UK)

Dark Triad, Gaslighting and Depression as an outcome

Gaslighting is a form of intimate partner abuse that appears to be used to maintain control of a partner by altering their perceptions, thoughts, actions, affective state as well as their self-perception and reality-testing. Compared with other forms of intimate partner abuse there has been little empirical research published.

The present research had two aims: i) to identify links between traits of the dark triad model and the usage of gaslighting and ii) to investigate the harms of gaslighting by testing whether victims of gaslighting are more susceptible to depression than those who haven't experienced gaslighting. A group of 624 adults (97.6% female), aged 18- 61 years ($M = 24.27$, $SD = 8.33$) participated in this study.

Our results showed that there was a significant association between Machiavellianism, Psychopathy and Dependency with gaslighting in romantic relationships, however there was not a significant association between the usage of gaslighting and gender. We also found a strong positive relationship between Gaslighting and Depression.

SESSION 4

BEHAVIOR, MOBILITY, AND COOPERATION



Thurston Cleveland Hicks

The first partial ethogram of the Eastern chimpanzees (*Pan troglodytes schweinfurthii*) of Chinko, southeastern CAR

I will present the results of my three-month survey over the summer of 2024 of the material culture of the Eastern chimpanzees inhabiting the woodland ecotone of Chinko, southeastern CAR. In this first-ever documentation of the tools and nesting habits of this large population of extant hominids, I will walk >150 km of recces, recording all chimpanzee artifacts encountered, as well as the availability of potential insect prey. The results of this pilot study will be used to create an ethogram to allow us to compare the behaviors of these chimpanzees with those of Bili-Uere living 100-200 km south in DRC. These 2 populations, despite being separated by a large river (the Mbomou) are known to be connected genetically in recent evolutionary history. I thus predict that their behaviors will be similar as well: I will be looking for long driver ant tools, pounded termite mounds and snails and frequent ground nesting, which are part of the behavioral realm across a wide area in Northern DRC. The structure of nests will be carefully documented for use in an ongoing project comparing nesting styles across the range of Eastern chimpanzees. The results of this study of traditions in this large, interconnected hominid population will shed light on the behavioral diversity of our own hominin ancestors following our split from the genus *Pan*.



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SESSION 4

BEHAVIOR, MOBILITY, AND COOPERATION



Martyna Molak (University of Warsaw, PL)

Should I stay or should I go now? Mobility of ancient humans goes personal

Mobility has always been one of the focal points of the study of the human past. With the geographic range of our species being among the widest in the animal kingdom, mobility undoubtedly has been playing a formative role in our evolution. Unlike other species, however, human movement does not only concern ecology, but a range of other science fields, including, but not restricted to, sociology, psychology, linguistics or archaeology. While exploration of past human mobility is predominantly a domain of archaeology, bioarchaeology, defined as comprising physical anthropology, ancient genetics and isotopic studies, is increasingly augmenting archaeology's achievements.

Nevertheless, ancient genetic studies have many a times triggered heated discussions, resistance and even outrage among archaeologists; with geneticists, often righteously, accused of arrogance and ignorance when translating the revealed biological relationships between individuals and populations to the language of archaeological cultures and technocomplexes. Pots are not people and biological ancestry and kinship do not equal cultural continuity or socially relevant bonds. Building dialog and synergy to integrate lines of evidence from different disciplines into informed and coherent understanding the human past are now an indispensable part of any research project in the field.

Methodological developments and exponentially growing numbers of published genomes, are increasingly refocusing ancient genomics from studying biological affinities between populations to revealing, even spatially and temporally distant, familial relationships and quantification of genetic ancestry composition of particular individuals. Isotope analyses provide information on the place of residence and its changes throughout an individual's lifetime. Within this framework we are ultimately reaching a point where the basic unit for the study of human mobility rather than a population or an archaeological culture will shift to a single individual with their own modes and motivations for mobility. This perspective, its promises and shortcomings, will be the focus on my presentation.



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SESSION 4

BEHAVIOR, MOBILITY, AND COOPERATION



Theresa Matzinger (University of Vienna, AU),
Klaudia Karkowska (Nicolaus Copernicus University, Toruń, PL),
Darya Namednikava (Nicolaus Copernicus University, Toruń, PL),
Marek Placiński (Nicolaus Copernicus University, Toruń, PL),
Michael Pleyer (Nicolaus Copernicus University, Toruń, PL)

The relationship between non-verbal alignment and cooperativeness in a game theory-based TV show

Identifying reliable cooperation partners has been crucial in our everyday lives and throughout our evolutionary histories. Recent studies have explored various aspects of conversation that we can use to assess others' cooperative intents (Henrich & Henrich, 2007). Especially, low-level mechanisms, such as linguistic alignment (Pickering & Garrod, 2004), are proposed indicators of cooperativeness (Waciewicz et al., 2017).

While prior research focused on verbal alignment's impact on cooperation, the multimodal nature of human communication requires additional studies on gestural and multimodal alignment (Kendon, 2004; Rasenberg et al., 2020). In fact, previous studies indicate that gestural alignment is important for coordinating common ground (Holler, 2009) and achieving communicative success (Rasenberg et al., 2022). Our study extends this and links the alignment of non-verbal signals, such as gestures and body postures, to cooperative behavior, hypothesizing that individuals are more likely to cooperate with partners who align with them non-verbally.

We annotated and analyzed the frequencies and temporal patterns of non-verbal signals (hand movements, head movements, posture changes) in 39 episodes of the British game-theory-based TV game show *Golden Balls*, where, after strategic conversations, contestants decide to either split or steal a monetary prize. Using generalized linear mixed effects models, we found that non-verbal signals influenced the contestants' decisions to cooperate ("split") or defect ("steal"). Contestants who aligned in the frequency, types, and temporal patterns of their movements showed a tendency for being more likely to cooperate.

We compare our findings with findings on emotional alignment (Baumann et al., 2024) and syntactic alignment (Matzinger et al., 2024) from the same game show dataset. This comparison elucidates the relative importance of non-verbal alignment in judging cooperativeness. Ultimately, this study highlights the role of multimodal communication in cooperative partner choice and sheds light on the co-evolutionary links between language and cooperation.

SESSION 5

NON-VERBAL COMMUNICATION, VOCALIZATION, AND LANGUAGE



Kasia Pisanski (University of Saint Étienne, FR; University of Lyon, FR; University of Wrocław, PL),
David Reby (University of Saint Étienne, FR)
and Anna Oleszkiewicz (University of Wrocław, PL; Technische Universität Dresden, DE)

Do humans need to learn how to produce emotional vocalizations?

Human nonverbal vocalizations such as screams and cries often reflect their evolved functions. Although the universality of these putatively primordial acoustic forms and their phylogenetic roots in animal calls suggest they may have a strong reflexive foundation, many of the emotive vocalizations we humans produce are under our voluntary control, suggesting that, like speech, they may require auditory input to develop typically. Indeed, we show that profoundly deaf adults produced atypical and acoustically homogenous volitional vocalizations that were unusually high-pitched, unarticulated, and tonal, containing extremely few harsh-sounding nonlinear phenomena compared to typically-hearing controls. In perception experiments on over 400 adults, listeners struggled to gauge the intended emotions of deaf vocalizers, perceived their vocalizations as relatively inauthentic and reliably detected deafness. The effects of auditory deprivation were additive, increasing as auditory experience of vocalizers decreased. Vocal learning may thus be required not only for speech acquisition in humans, but also for the acquisition of some volitional non-linguistic vocalizations.

SESSION 5

NON-VERBAL COMMUNICATION, VOCALIZATION, AND LANGUAGE



Marta Sibierska (Nicolaus Copernicus University, Toruń, PL),
Przemysław Żywiczyński (Nicolaus Copernicus University, Toruń, PL),
Marek Placiński (Nicolaus Copernicus University, Toruń, PL)

Linguistic Niche Hypothesis in Language Evolution: A Review

“Language adapts to the environment” is the key assumption of Linguistic Niche Hypothesis (in short, LNH, see Lupyan & Dale, 2010). LNH has extensively been used in language evolution studies to account for diversity of human languages: their structures, that is morphology and syntax (e.g., Bentz & Winter, 2012), but also their lexicons (e.g., Wilson & Little, 2013). Although LNH has been very influential in the field of language evolution, so far there has been little effort to look at it critically (for an exception, see a review in Lupyan & Dale, 2016). In this paper, we present a review of papers relevant to LNH and point to three important limitations in LNH-related research that have not been addressed thus far: (A) Underrepresentation of communicative systems other than spoken language, in particular forms of communication in the bodily-visual channel: gesture (cf. Enfield, 2023; for an exception, see e.g., Nölle et al., 2018), whole-body communication (pantomime) and sign languages (for an exception, see e.g., Wilson & Little). (B) Lack of a consensus as to what counts as “the environment”. The term has been used in a very broad sense, to denote anything from physical niches, that is climate, type of space, or topography, to social and technological niches, as well as “communicative situation” or “context”, both of which are hardly ever clearly defined. (C) Lack of extension of the interaction between environment and communicative systems onto human cognition, which in a loop-wise manner could explain differences in conceptual frameworks of groups that inhabit different ecological niches and use different languages (Boroditsky, 2009; cf. Whorf 2012; Kirby, 2017).

SESSION 5

NON-VERBAL COMMUNICATION, VOCALIZATION, AND LANGUAGE



Kasia Skowrońska (University of Warsaw, PL),
Krzysiek Główka (University of Warsaw, PL),
Angelo Delliponti (Nicolaus Copernicus University, PL),
Ines Adornetti (Roma Tre University, IT),
Alessandra Chiera (Roma Tre University, IT),
Daniela Altavilla (Roma Tre University, IT),
Valentina Deriu (Roma Tre University, IT),
Serena Nicchiarelli (Roma Tre University, IT),
Sławomir Waciewicz (Nicolaus Copernicus University, PL),
Francesco Ferretti (Roma Tre University, IT)

The role of gaze in the foundations of human pragmatics: two studies

Ostensive communication, reciprocity and reputation are thought to constitute some of the social and cognitive preconditions, parts of pragmatic competence, which make the great potential of human communication possible. In this context, particular importance has been attributed to the role of gaze and eye contact (Csibra, 2010). In our talk we will present two studies aimed at investigating such aspects of pragmatics, with the aim of highlighting some of the features that underlie human communication. The first one is an ERP study on ostensive communication, with two goals: to investigate whether the distinction between communicative and informative intention is plausible from a neurophysiological standpoint, and whether the brain processing of communicative intentions has to be ascribed to high-level or low-level mindreading systems. We submitted to participants sequences of images depicting short stories of non-verbal communication, in which eye contact played a fundamental role in the establishment of communicative interaction. The results suggest that the detected early components could be associated with automatic mechanisms for the attribution of intentions, in line with the low-level mindreading hypothesis. The second study investigates the basis for minimal pragmatics through the lens of interaction sensitivity, in a computer game interaction. The question we were interested in was 'what kind of behavior makes agents feel that they are interacting with each other?', while participants moved simple avatars in a 2D space, in different conditions (e.g. gaze / no gaze) and making them believe they could or could not be interacting with bots. Afterwards participants answered questions about the perceived sense of commitment and togetherness, as well as whether they thought the interaction was with a human or a bot. With the aim to examine the patterns of movement dynamics and the answers given to the questionnaire, we will present some of the found results.

SESSION 6

EVOLUTIONARY PERSPECTIVES IN VARIOUS PROBLEMS (MUSIC, CULTURAL TRANSMISSION, GLOBAL COMPARISONS)



Piotr Podlipniak (Department of Musicology, Adam Mickiewicz University in Poznań, PL)

The Baldwin effect and neural repurposing as driving forces in the evolution of conceptual primitives in music

For most people, music is mainly experienced as a set of pre-conceptual sensations rather than conceptual schemas that characterize the comprehension of propositional language. Exceptions to this are found in the case of professional musicians, who usually grasp pitch and rhythm schemas into well-established concepts such as perfect fifths, tonics, and demisemiquavers. However, even non-professionals can conceptualize musical pitch using conceptual primitives such as 'unidirectional scalar change' and 'discrete distance', which poses a question about their origin. On the one hand, the presence of conceptual primitives suggests they were canalized during the evolution of Homo sapiens or their direct ancestors. On the other, music lacks propositional meaning, which is a mystery concerning the reasons for the evolution of musical primitives. The aim of this proposal is to present a possible evolutionary scenario that can explain not only the ubiquity of conceptual primitives but also the tendency to conceptualize musical schemas. In this scenario, instead of one common precursor of language and music, a communicative niche is proposed which became the testing ground for different means of communication to solve the social challenges that emerged in response to the increasing social complexity of hominin groups. Such inventiveness based on plasticity through neural repurposing (i.e. the use of cognitive tools that involve implementing an existing neural circuitry in a functionally new circuit) played a crucial role in the testing of different means of communication. Music can owe its conceptual primitives to the repurposing of non-arbitrary sound-meaning mappings from language-like propositional vocalizations. If the results of such a repurposing had been adaptive, it could have been taken under genetic control by employing the Baldwin effect. This view can be supported by the fact that neural repurposing is observed in contemporary communicative phenomena such as in tone and whistle languages.



SESSION 6

EVOLUTIONARY PERSPECTIVES IN VARIOUS PROBLEMS (MUSIC, CULTURAL TRANSMISSION, GLOBAL COMPARISONS)



Lukáš Kratochvíl (Charles University, Prague, CZ),
Jan Havlíček (Charles University, Prague, CZ)

The fallacy of global comparisons based on per capita measures

Media, social scientists and public health researchers often present comparisons across countries and policy makers use such comparisons to take evidence-based action. For a meaningful comparison among countries, one often needs to normalize the measure for differences in the population size. To address this issue, the first choice is usually to calculate per capita ratios. Such ratios, however, normalize the measure for differences in population size directly only under the highly restrictive assumption of a proportional increase of the measure with population size. Violation of this assumption frequently leads to misleading conclusions. We compare per capita ratios with an approach based on regression, a widely used statistical procedure which eliminates many of the problems with ratios and allows for a straightforward data interpretation. It turns out that the per capita measures in a global dataset of gross domestic product systematically overestimates values in countries with small populations, while countries with large populations tend to have misleadingly low per capita ratios due to the large denominators. Unfortunately, despite their biases, comparisons based on per capita ratios are still ubiquitous and they are used for influential recommendations by various global institutions. Similarly, ratios are routinely used in behavioural evolutionary sciences such as 2nd to 4th digit ratio, facial weight to height ratio and body mass index which may considerably bias results of such studies.



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SESSION 6

EVOLUTIONARY PERSPECTIVES IN VARIOUS PROBLEMS (MUSIC, CULTURAL TRANSMISSION, GLOBAL COMPARISONS)



Pavĺina Hillerov (Charles University, Prague, CZ),
Matěj Jirout (Charles University, Prague, CZ),
Petr Tureček (Charles University, Prague, CZ)

Cultural transmission shows signs of adaptive fine-tuning

Parametrization of cultural transmission is a challenging task. Despite several attempts to root cultural evolution in memetics and other methods that prioritize discretized cultural variants, continuous models offer a promising alternative.

Model with a constant standard deviation η , used since the 1980's is a good approximation of polygenic inheritance, but information transmission conducted by brains, as opposed to alleles stored on paired chromosomes, require more complex distribution functions to capture the stochastic similarity between parents and offspring.

In our models, parameter ν describes the effect of parental variance and parameter ζ describes the proportionality in variance between cultural parents and offspring.

We conducted a study with a game created for this purpose - Tip for Science, where players guess quantitative trivia using tips of previous participants as hints. This helps us estimate the aforementioned parameters of cultural transmission.

Full model shows us that all the parameters contribute to a faithful description of the distribution function ($[\eta = 67,455; \zeta = 0,221; \nu = 0,429]$).

We ran computer simulation of cultural adaptation in a system with these values and reliably demonstrated that the adaptation is faster than in a system where the parameter values are drawn randomly from the prior used in the statistical model. This result suggests that the distribution function (or, rather, the micromechanisms behind it) was subject to evolutionary optimization - this provides prototypical evidence for the Dual inheritance theory.

It is a matter of discussion to what extent these parameters are influenced genetically and culturally.

SPEED TALKS SESSION 1



Aleksandra Pytlińska (PL)

In the presence of an attractive audience, people report lower levels of sociosexual desire

Due to social desirability biases, individuals tend to present themselves more positively in front of others, sometimes deviating from reality. This tendency is particularly evident when discussing controversial or strongly normative topics. In our study, we examined how the presence of an attractive male or female model influences people's reported socio-sexual orientation, which includes their previous sexual behaviour, attitudes towards casual sex and interest in sexual activity outside of committed relationships. Participants (N=244, 52% male) answered sociosexual questions in solitude or in the presence of an attractive model. Results indicate that both men and women report reduced levels of sexual desire, though not behaviour or attitudes, when an attractive model of either sex is present. Another study (N=188, 51% male) confirmed that this effect was not due to differences in response conditions (out loud vs written down). This study highlights an aspect of human sexuality that is prone to distortion in research due to self-presentation biases that significantly affect how individuals portray themselves.

Anna Chmielinska (University of Wrocław, PL),
Bogusław Pawłowski (University of Wrocław, PL)

Perceived attractiveness in women with Hashimoto disease

Perceived attractiveness is associated with various aspects of health. Previous studies, although not conclusive, have shown a connection between attractiveness and factors such as MHC polymorphism, fertility, immune system reactivity, antibacterial response, and the risk of cardiovascular diseases. This research studies the relationship between perceived attractiveness and the efficiency of the immune system, using Hashimoto's disease as an example. The immune system is a key aspect of human biological condition. Reflecting body's ability to maintain developmental stability despite environmental or genetic perturbations. Hashimoto's disease is an autoimmune chronic inflammatory condition, that affects the thyroid gland. Etiopathogenesis of the Hashimoto disease could be related to genetic predispositions, environmental influences, past infections, lifestyle, or other triggering issues. The hypothesis presented in this research suggests, that women suffering from autoimmune Hashimoto thyroiditis would be rated as less attractive compared to the group of healthy women. The result suggests that women with Hashimoto disease are more likely to be perceived by men as less attractive. The findings also show the influence of the BMI on the ratings of perceived attractiveness of studied women.



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SPEED TALKS SESSION 1



UNIVERSITY OF SILESIA
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Ksawery Łakomy (University of Wrocław, PL), Ada Peryga (University of Wrocław, PL), Marta Kowal (IDN Being Human Lab; University of Wrocław, PL), Jakub Jędrusik (University of Wrocław, PL), Jakub Krasucki (University of Wrocław, PL), Anna Kuztal (University of Wrocław, PL), Maja Nowakowska (University of Wrocław, PL), Julia Szaran (University of Wrocław, PL), Magdalena Kurowska (University of Wrocław, PL), Klaudia Fuławka (University of Wrocław, PL), Aleksandra Nowacka (University of Wrocław, PL), Julia Góreczna (University of Wrocław, PL), Marta Tarasiewicz (University of Wrocław, PL), Grzegorz Jankiewicz (University of Wrocław, PL), Amelia Ciniawska (University of Wrocław, PL), Piotr Jędrusik (University of Wrocław, PL)

The beauty activation's impact on one's behaviour - study relation

The beauty as a concept impact on one's internal attitude or beliefs in the area has been studied extensively. We decided to explore behavior of a person who had been exposed to attractive models' images, assuming it would high probably activate the idea. Female participants who took part participated in the research (n=160, which was lowered during analysis to 130) were wearing head-mounted device which was portrayed to them as head-tracking device. Thereafter the headset was taken off and brought out of the place, leaving participant in for two minutes. Further analysis of the coded (via BORIS software) material led to confirmation of pre-registered three indexes: duration of mirror self-gazing, mirror self-fixations, and occurrences of self-modifications. The results revealed that women who viewed social media models, slightly more frequently glanced at themselves in the mirror, simultaneously less frequently enhanced or adjusted their appearance. We conclude that self-enhancing and self-monitoring might be different result of social comparison towards perfect social media models.



SPEED TALKS SESSION 1



UNIVERSITY OF SILESIA
IN KATOWICE

Justyna Kajstura (University of Wrocław, PL),
Bogusław Pawłowski (University of Wrocław, PL)

New method to assess sexual strategy in humans

Human sexual strategies may be assessed by the revised version of Sociosexual Orientation Inventory (SOI-R). Here, we test if it is possible to assess sociosexual orientation, based on an analysis of the traits sought in a potential partner. We use a simple method, asking respondents to create a personal ad by selecting exactly 6 out of 10 suggested preferred traits in a partner. Among these 10 traits, there were two traits in each of five evolutionary relevant categories i.e. attractiveness, commitment, resources, cognitive and social skills. The subjects were then forced to select two suggested traits in at least one of these five categories. We hypothesize that seeking a potential partner for more physical attributes (i.e. choosing two traits from attractiveness category) is associated with greater focus on mating investments (higher SOI) while seeking commitment (i.e. choosing two traits from this category) is associated with parental investment (lower SOI). The other three trait groups should not be strongly related to SOI.

Out of 416 subjects who participated in the study, 299 heterosexual subjects (188 women) were included in the analysis. We found that for both males and females choosing two traits related to attractiveness was related to less restricted sociosexual orientation, while preference for two traits from the commitment category characterized those with a more restrictive sociosexual orientation. What is interesting, these results were mainly driven by sociosexual attitude and desire components of SOI-R. There was no relationship between SOI-R and preference for cognitive skills or resources in a potential partner. We also found that women with more restricted sociosexual attitude components of SOI-R, and men with less restricted sociosexual attitude, sought partners with better social skills.

We suggest that the proposed new method could be used to assess reproductive strategy. Further study, however, is needed to refine this method.



SPEED TALKS SESSION 1



Šárka Kaňková (Charles University, Prague, CZ)
Daniela Dlouhá (Charles University, Prague, CZ)
Jana Ullmann (Charles University, Prague, CZ)

Disgust sensitivity before and after conception: longitudinal study

Disgust is a part of the behavioral immune system (BIS), which is a mechanism that protects individuals against pathogens. The BIS plays a crucial role during pregnancy, particularly during the critical period of organogenesis in the first trimester when increased protection is needed. It was found that women in the first trimester of pregnancy exhibit higher disgust sensitivity compared to non-pregnant childless women. Presumed mechanisms are related to hormonal, immunological, and psychological changes associated with pregnancy. The main aim of this study was to investigate changes in disgust sensitivity before and after conception and to assess whether psychological factors affect disgust sensitivity during pregnancy. In the ongoing longitudinal project, we have so far collected data from 47 primiparous women who completed questionnaires focused on disgust sensitivity, anxiety, and positive and negative affectivity before pregnancy and at the end of the first trimester. Preliminary results showed a significantly higher disgust sensitivity after conception across all subscales of the Disgust Scale-Revised (DS-R) (p -values mostly <0.001 , Cohen's d s around 0.5). When using the Three Domains of Disgust Scale (TDDS), we observed only a decrease in moral disgust after conception. We also noted a decrease of positive affectivity after conception. Psychological factors, the time between both measurements, as well as the women's age and their menstrual phase at the time of the measurement before pregnancy, did not influence the observed changes in pathogen related disgust sensitivity after conception. Only changes in moral disgust became non-significant after adding positive affectivity to the model. Our results indicate that the increased level of pathogen disgust after conception might be an adaptive response to the ongoing physiological changes. Our findings also support previous suggestions that the TDDS may have limited sensitivity in detecting changes in BIS activity related to women's reproductive changes.



SPEED TALKS SESSION 1



Katarzyna Galasinska (SWPS University, Warsaw, PL),
Anna Szymków (SWPS University, Warsaw),
Jachlewski (SWPS University, Warsaw, PL),
Aleksandra Tołopilo (SWPS University, Warsaw, PL),
Michał Olszanowski (SWPS University, Warsaw, PL)

Creative thinking peaks during ovulation: A by-product of physiological arousal

Recent studies suggest that women's creativity peaks during ovulation, potentially as a signal to attract mates. However, given that arousal is the vital factor facilitating creativity, this increase may be a by-product of general heightened arousal during ovulation. This hypothesis has not been fully explored, as most research relies on self-reported measures of arousal, which is a significant limitation. Thus, the arousal's role in linking ovulation to creativity remains unexplained. To address this question, we conducted an intraindividual study with electrodermal activity (EDA) as a physiological indicator of arousal. Women of reproductive age (N = 69) participated in four creativity sessions across different phases of their menstrual cycle. Results indicate that electrodermal response mediates the relationship between menstrual cycle phases and the originality of ideas. Additionally, reducing arousal through relaxation during ovulation decreased creativity. These findings support the hypothesis of increased creativity being a by-product of general heightened arousal during ovulation.

SPEED TALKS SESSION 1



Daniela Dlouhá (Charles University, Prague, CZ)
Josef Včelák (Department of Molecular Endocrinology, Institute of Endocrinology, CZ);
Šárka Kaňková (Charles University, Prague, CZ)

The association between disgust sensitivity and serum cytokine levels in women: Links to the behavioral immune system and psychological disorders

Besides the body immune system, which protects the organism via the activity of a network of organs, cells and proteins, individuals also possess an active behavioral immune system (BIS). The BIS functions via the emotion of disgust, which triggers an avoidant reaction, protecting the individual from coming into contact with pathogens. The activity of the BIS is increased when there is a higher need for protection and/or when the body immune system isn't active enough. This is supported by a recent study showing a negative association between disgust sensitivity and pro-inflammatory mediators of innate immunity in pregnant women, suggesting that disgust is elevated when the body immune system is not sufficiently activated. In the presented study, we analyzed levels of 17 serum cytokines in 78 healthy non-pregnant women (mean age = 24.4, SD = 5.61), who also filled out the Disgust Scale-Revised (DS-R) and Three Domains of Disgust Scale (TDDS) questionnaires. As in the study on pregnant women, the results showed a significant negative association between disgust and certain pro-inflammatory cytokines, specifically between DS-R core disgust and MCP-1 and DS-R contamination disgust and IL-1 β and TNF- α , which may suggest a compensatory relationship between the behavioral and body immune systems. Simultaneously, a strong positive association was observed between the pro-inflammatory cytokines IL-5 and IL-12 and the DS-R core and overall scores, as well as between the pathogen domain of TDDS and both IL-5 and pro-inflammatory MIP-1 β . Elevated levels of IL-5 and IL-12 have been shown to be associated with neuroticism, depression and anxiety disorders. Moreover, IL-5 and MIP-1 β are linked with asthma, which is associated with anxiety. Previous research has shown a positive association between disgust sensitivity and both neuroticism and anxiety disorders. Our results, therefore, support both the adaptive function of disgust as well as findings regarding its non-adaptive associations.



SPEED TALKS SESSION 1



Paula Bartecka (Jagiellonian University Medical College, Krakow, PL),
Magdalena Klimek (Jagiellonian University Medical College, Krakow, PL),
Ilona Nenko (Jagiellonian University Medical College, Krakow, PL),
Andrzej Galbarczyk (Jagiellonian University Medical College, Krakow, PL),
Grazyna Jasienska (Jagiellonian University Medical College, Krakow, PL)

A good or a bad gene? Genetic polymorphism of apolipoprotein E and self-rated health in postmenopausal women

Background: Apolipoprotein E (ApoE) is involved in lipid metabolism. ApoE is encoded by a polymorphic gene with three isoforms, ApoE2, ApoE3, and ApoE4. Carriers of the ApoE4 allele have higher cholesterol levels; therefore, we hypothesized they would have a higher risk of poor health in older age. However, ApoE4 is maintained in the population and has not yet been removed by evolutionary mechanisms. This study aimed to investigate the relationship between APOE polymorphisms and self-rated health among postmenopausal women.

Methods: Participants were 432 postmenopausal women aged 45–92 from a Polish rural population at the Mogielica Human Ecology Study Site. Venous blood samples were collected to analyze cholesterol levels and ApoE polymorphisms. Women were divided into two groups: those with at least one ApoE4 allele (n=114), and those with other genotypes (n=318). Women were asked to rate their health. Their responses were dichotomized into two categories, with participants reporting “average,” “bad” or “very bad” health classified as “poor health.” The association between poor health and ApoE was estimated using logistic regression analysis.

Results: Women carrying at least one ApoE4 allele had higher total cholesterol (TC) levels than those without this allele (p=0.026) after adjusting for age and education. ApoE4 carriers also had higher low-density lipoprotein (LDL) levels (p = 0.026), whereas high-density lipoprotein (HDL) levels did not differ between the ApoE genotypes (p=0.94). However, we did not find a statistically significant relationship between ApoE4 genotype and self-rated health (p=0.67).

Conclusions: Genetic polymorphism of apolipoprotein E is well known factor associated with cholesterol levels. In a group of women from a small-scale agricultural community, ApoE4 was related to elevated levels of cholesterol at an older age but not to self-rated health. It is likely that other factors more strongly influence health than the ApoE polymorphism. There must also be some advantages to maintaining this allele in the population.

SPEED TALKS SESSION 2



Slavomíra Jusková (University of Presov, SK),
Grazyna Liczbinska (Adam Mickiewicz University, Poznań),
Martin Hromada (University of Presov),
Lukasz Jankowjak (University of Szczecin, PL),
Anna Kubicka (Poznan University of Life Sciences, PL),
Piotr Tryjanowski (Poznan University of Life Sciences: Technical University of Munich, DE),
Peter Mikula (Czech University of Life Sciences, Prague; Technical University of Munich, DE),
Rajesh K Gautam (Dr. H.S. Gour University, Sagar, IN)

The Impact of Climatic and Socioeconomic Factors on the Age of Menarche in Girls in India

Menarche, a major milestone in female puberty, is affected by various variables, including genetics, diet, status at birth, socioeconomic status, and physical activity. The study emphasizes the intricate connection between environment and biological development by employing a mixed-method approach that includes quantitative data from nationally available databases as well as qualitative insights from field investigations. Our findings indicate that climate change, with its potential to aggravate regional climatic extremes, may alter the timing of menarche in the future. Recent research has shown that climate is important in influencing menarche, especially in places with harsh weather conditions. We studied the effect of climate on menarche in Indian females, a nation with various climatic zones and significant regional changes in temperature and humidity. Our study calls for incorporating climate concerns into public health policies to address the various issues that climatic variability poses to adolescent health in India. Our study uses a mixed-effects linear model to evaluate the impact of climatic and socioeconomic variables on the age of menarche among Indian females. The model includes random effects for different places and fixed effects for factors like post-birth rainfall, poverty, and wealth. The findings show that these factors have a considerable impact on menarche time. The database contains 11 399 women from 10 to 60 years of life and menarche age from 9 to 22 years. Women are from 24 locations in India, the dataset includes variables like age at menarche, socio-economic status, and ecological variables such as mean temperature, and annual rainfall in these 24 localities. The mixed-effects linear model employed in this study has random and fixed effects to account for changes among areas and particular influential variables. The random effects component accounts for variability over 24 discrete locations, with a variance of 0.3103 and a residual variance of 1.5315. The average age of menarche is greatly altered, with an estimated 19.56 years. Rainfall after birth, this factor shows a significant negative effect, indicating that higher rainfall after birth is associated with earlier menarche. Poor socioeconomic status shows a significant negative effect, indicating later menarche compared to the reference group. The richest category has a significant positive effect and the unknown category has no significant effect. These findings highlight the complex effects of environmental and socioeconomic factors on the biological development of girls in India, emphasizing the need for targeted health interventions that consider these variables to address potential risks associated with altered menarche timing.

Aknowledgement

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SPEED TALKS SESSION 2



Jan Toman (Charles University, Prague, CZ)
Jaroslav Flegr (Charles University, Prague, CZ)

Sex-Specific Influence of Latent Toxoplasmosis on Reaction Times: A Case-Control Study

Toxoplasma gondii is a neurotropic parasite whose dormant stages can induce changes in human cognitive abilities, personality traits, and behaviour, meeting the conditions for parasitic manipulation. Many studies showed significantly slower reaction times in *Toxoplasma*-positive individuals, linked to higher risks of occupational injuries or traffic accidents. However, other studies yielded inconclusive results. We conducted a case-control study involving 63 *Toxoplasma*-positive individuals and 66 *Toxoplasma*-negative controls, matched by age (19–55 years) and sex (82 women, 47 men). Participants underwent a computer-based simple reaction time test, measuring response times to a randomly flashing white square in four phases of ten repetitions each. Results were analysed using the Linear Mixed Model (LMM) and non-parametric Kendall partial correlation, considering sex, age, Rh phenotype, and subjective physical state. The LMM revealed significant effects of sex and a marginally significant interaction between sex and *Toxoplasma* status on reaction time. A subsequent partial Kendall correlation tests revealed significantly longer reaction times in *Toxoplasma*-positive men during the first phase of the test, supporting earlier findings. Contrary to this, *Toxoplasma*-positive women exhibited shorter reaction times, significantly in the third and fourth phases. The opposite effects of toxoplasmosis between sexes have been previously reported and may result from the differential shifts in their personality profiles or sex-specific stress-coping mechanisms. Shorter reaction times in *Toxoplasma*-positive women could arise from selection bias: Toxoplasmosis is known to positively affect performance and health of Rh-positive heterozygotes, while negatively affecting the performance and health of the more numerous subjects with other Rh genotypes. It is possible that representatives of the former, healthier subpopulation preferentially accepted the invitation to participate in our experiments. This selection bias could result in the observed better performance and health of *Toxoplasma*-positive women compared to *Toxoplasma*-negative women in our sample.



SPEED TALKS SESSION 2



Michał M. Stefanczyk (University of Wrocław, PL)

Trypophobic reactions depend on a context the clusters of holes are presented in

Trypophobia is an extreme negative reaction to clusters of circular objects. While most find these images tolerable, a sizeable minority of individuals find them difficult to view. The present study investigates how context either aggrandizes or mitigates tryphobic reactions via basic situational priming or cognitive appraisal paradigms. Participants (N=356) were randomly assigned to view tryphobic imagery in one of three context conditions (control - with no prompt, distraction - an art exhibition, or provocation - tryphobic description). Results showed that tryphobic reactions were context-dependent but also tryphobic level-dependent. In essence, providing some type of social context or warning helped those with higher TQ levels. Although age and anxiety levels did not impact the main findings, both were found to play a small role in tryphobia manifestation. These results show that tryphobic reactions can be affected by context, which may help future clinicians and those severely impacted by such imagery.



SPEED TALKS SESSION 2



Anna Mucha (University of Silesia in Katowice, PL)
Anita Pollak (University of Silesia in Katowice, PL)
Ewa Wojtyna (University of Silesia in Katowice; University of Opole, PL)

Evolutionary Concepts and the Healing Properties of Virtual Nature for Mental Well-being

The intersection of evolutionary psychology and modern technologies provides valuable insights into human behavior and well-being. This cross-disciplinary approach significantly enhances environmental psychology, highlighting the evolutionary mechanisms driving benefits from natural virtual environments. Evolutionary theories, such as the Biophilia Hypothesis, suggest that humans have an innate preference for nature, shaped by millennia of adaptation to natural environments for shelter and food. Consequently, according to Attention Restoration Theory, contact with nature contributes to feelings of relaxation, calmness, and mental clarity. Virtual reality (VR), with its immersive capabilities, offers the opportunity to create realistic natural environments and utilize their therapeutic potential.

The study included the projection of two virtual environments (VE). Eighty-four healthy adult volunteers participated, with one group (n = 42) experiencing a projection of a virtual nature environment (VNE) and the other group (n = 42) experiencing a virtual urban environment (VUE). The study assessed the subjective regeneration experience related to being in VR (using the original Restorative Experience in the Virtual World questionnaire). It also considered how much participants liked each VE (using the Visual Analogue Scale) and the level of sense of presence in the VE (using the Slater-Usuh-Steed questionnaire). The results indicated that the level of regeneration experience was higher in the VNE group than in the VUE group, though the Student's t-test result was not statistically significant. Additionally, both environmental preferences and the level of sense of presence were significant for the restorative properties of the environments, as indicated by regression analysis.

These findings indicate the high potential of nature environments related to evolutionary mechanisms and highlight the importance of environmental preferences and the sense of presence in the therapeutic use of VR. Integrating evolutionary perspectives with immersive VR technology offers promising paths for future research and applications in improving mental health.



SPEED TALKS SESSION 2



Jan Havlíček (Charles University, Prague, CZ),
Dagmar Schwambergová (Charles University, Prague, CZ),
Marie Štěpánková (Charles University, Prague, CZ),
Daniel Mazánek (Charles University, Prague, CZ),
Kateřina Roberts (Charles University, Prague, CZ),
Lenka Martinec Nováková (Charles University, Prague, CZ),
Jitka Třebická Fialová (Charles University, Prague, CZ),
Lucie Jelínková (Charles University, Prague, CZ),
Šárka Kaňková (Charles University, Prague, CZ)

Possible sex differences in disgust in preschool children

Avoidance of harmful cues, such as pathogens, is mediated by a set of psychological mechanisms that collectively constitute the behavioural immune system, with disgust as a central affective component. There is robust evidence that, on average, women show higher levels of disgust as compared to men. Similar results have been reported for school-age children. Nevertheless, it is currently unclear at what age these differences emerge. The main aim of the current study was to investigate possible sex differences in disgust in 3-4-year-old preschool children. In total, 58 girls and 60 boys were interviewed using the Childhood Disgust Scale. We found no significant differences in the overall score or in the Disgust Avoidance subscale. Interestingly, we found significantly higher scores in boys compared to girls in the Disgust Affect subscale. These results indicate a complex developmental pathway for disgust during childhood. Future studies should focus on the longitudinal examination of these phenomena.

SPEED TALKS SESSION 2



Peter Kutsos (Charles University, Prague, CZ),
Petr Tureček (Charles University, Prague, CZ)

Should researchers imitate each other more? An examination of the consistency of use of the terms “imitation” and “emulation” in the scientific literature

Imitation and emulation are two fundamental processes of social information transmission, observed across many animal species but particularly pronounced in humans and other primates. Generally defined as “copying of process” and “copying of results”, respectively, these concepts often suffer from vague and overlapping interpretations. Despite their potential significance in understanding human cognition, their precise definitions and the roles they play in human social learning remain contentious among researchers.

The debate extends to whether imitation or emulation is key to what makes humans unique and their capacity for cumulative culture. Some studies emphasize the human propensity for over-imitation as a distinguishing trait, while others highlight the effectiveness of human emulation. This inconsistency in definitions and interpretations hampers cohesive academic discourse.

We aim to re-examine these concepts to clarify their distinctions and importance in human social learning, aiming to enhance the consistency and coherence of their use in the literature. Using transmission-chain experiments as a case study, we observe how the proportion of experiments, where participants can observe only the artifacts (or other outputs) of previous cultural generations changes over time. Additionally, we analyze how the terms “imitation” and “emulation” are used in papers describing these experiments



SPEED TALKS SESSION 2



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Laura Gillet (Department of Ethology, ELTE; Hungary; MTA-ELTE Lendület "Momentum" Companion Animal Research Group, HU)
Enikő Kubinyi (Department of Ethology, ELTE; Hungary; MTA-ELTE Lendület "Momentum" Companion Animal Research Group, ELTE NAP Canine Brain Research Group, Budapest, HU)

Caring for a dog like a child? Exploring the child-like role of dogs in a multinational sample

While Western countries face a demographic transition characterised by falling birth rates and smaller kinship networks, they are simultaneously experiencing an increase in the popularity of dog ownership, and more specifically, of the “dog parenting” (i.e., caring for a pet like a child) phenomenon. We hypothesize that, due to changes in their environment, humans have culturally redirected their biological needs to nurture and care for children towards animals. The aim of the present study was to characterize these “dog parents”. Dog owners were asked how much their dog was filling a child role in their lives, on a 5-point Likert scale. Then, we employed an ordinal logistic regression to analyse the relationship between the child-like role of the dog, demographic factors, and attitudes towards dog parenting of a multinational sample of N=383 dog owners. Preliminary results suggest that older North American owners, with no financial difficulty and whose children are teenagers or adults, are more likely to regard their dog as a child, compared to younger European non-parents. Attitudes towards dog parenting also play an important role in defining one’s dog’s role. Owners who consider that dog keeping is a similar experience to child parenting are more likely to regard their own dog as a child compared to the two other groups: owners who perceive dog keeping as requiring less commitment than child parenting, and owners who perceive dogs and children as different despite both requiring high commitment. Our findings highlight the importance of considering the socio-cultural background of pet owners when studying the changing roles of companion animals in society. They also suggest that the current dog-keeping practices of humans are culturally driven.



POSTER SESSION PART 1



Łukasz Strzelczyk (SWPS University, Wrocław, PL)

God is watching you. Exploring the impact of religiousness priming on prosocial behavior

Religion has been with humanity since the beginning of the species. Many researchers wonder how our need to believe in higher and supernatural things arose, what purpose religiosity would serve and why it still exists despite such enormous changes that have taken place in our communities. These issues turn out to be very important for the survival of our species. From an evolutionary point of view, religion is a valuable binder of society. However, it is not a homogeneous entity. Just like health or personality, it is a set of various features and attributes that create a coherent whole. One of the functions of religiosity that could explain the evolutionary basis for the existence of this factor is prosociality.

The work presents a series of experiments aimed at determining whether religiosity increases prosocial behavior. The first study tested whether priming religious sentences by arranging them from random pieces would increase the willingness to donate more money in an anonymous economic game. The study did not confirm the hypothesis. The division of respondents into their religion or lack thereof also did not show any statistically significant differences.

In the second experiment, I checked whether priming religiosity with religious photos, i.e. images of the Christian god, Jesus and abstract images, would increase the number of declarations of donating money to help victims of the war in Ukraine and the intention to help in packing blankets for this purpose. This experiment showed that priming with an image of Jesus significantly increased the willingness to help war victims. It was similar with the group with images of god, although the difference was insignificant. The other groups did not differ in results.

The concluding study was a field experiment that confirmed the assumptions of the first study. More people agreed to sign the petition when a poster depicting an image of Jesus was hung behind the researcher's back than when an image of a Christian god or an abstract painting was visible behind the researcher's back.

A series of experiments showed that, despite numerous studies on this topic, it is not possible to clearly determine whether religion has an impact on prosocial behavior. We can rather talk about a weak relationship between these variables and the influence of the image of God as a representation of moral principles and authority.



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POSTER SESSION PART 1



Dawid Mikulski (SWPS University, Sopot, PL)
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Protecting Children: Is the Behavioral Immune System (BIS) Related to Overprotective Parenting?

The Behavioral Immune System (BIS) comprises psychological mechanisms that act as a firstline of defense against pathogens. It detects the presence of potential health threats in immediate surroundings, facilitating the avoidance of objects and people. Behavioral immune responses are evident across a wide spectrum of human behavior. For instance, research indicates a positive correlation between BIS strength and social conservatism, as well as xenophobic attitudes. Individual differences in BIS reactivity are associated with preventive health behaviors, such as wearing masks during the COVID-19 pandemic or hand washing. Furthermore, it has been found that individuals perceiving themselves as more vulnerable to infections tend to prioritize the trait of obedience in children, which suggests an association between BIS and offspring-protective behaviors.

We investigate this assumption in a correlational study (N = 960). Specifically, we examine whether behavioral immune system indices, namely germ aversion and perceived infectability, are positively related to overprotective behaviors in the context of parenting. Additionally, we aim to determine whether this relationship is stronger among women compared to men, given that women generally invest more in their offspring. Our results are discussed in the context of the evolutionary basis of parenting behaviors and BIS flexibility.

POSTER SESSION PART 1



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50 Shades of Red: The Intersection of Personality and Blushing Perception

Numerous studies highlight the significance of blushing in social interactions, yet the impact of personality traits on perceived blushing remains unclear. Psychopathic traits, often associated with antisocial behaviour, contrast sharply with the prosocial nature of blushing.

Our study aimed to explore the relationship by examining 107 individuals (70 women) aged 18 to 36 (mean age 23 years, SD 3 years). Participants completed the Short Dark Triad (SD3), Light Triad (LT), and Blushing Propensity Scale (BPS). To control self-report bias, participants' long-term partners assessed their partners' personalities using the same questionnaires. Participants then assessed the attractiveness and trustworthiness of facial photographs with neutral expressions under two conditions, with and without blushing.

Preliminary results revealed a negative correlation between the Psychopathy scale (SD3) and perceived trustworthiness in both blushing ($r = -0.348, p < 0.001$) and non-blushing faces ($r = -0.342, p < 0.001$). These findings suggest that low empathy and high impulsivity/thrill-seeking traits are negatively associated with the perceived trustworthiness of faces. Additionally, a significant difference was found between self-reported blushing tendencies and partner reports, with self-reports being significantly higher: $t(106) = 5.13, p < 0.001$. This discrepancy may be due to individuals detecting blushing through increased temperature in blushing areas (such as the face or chest) without visible redness. Moreover, significant discrepancies were found between self-reports and partner-reports of all Dark Triad scales, with self-reports being significantly higher. These differences may be attributed to the "pink glasses" effect, whereby individuals have a non-objective perception of their romantic partners, or the tendency of individuals high in Dark Triad to select partners who idealize them and provide the admiration they seek. Surprisingly, results suggest that neither Dark Triad traits nor Light Triad traits affect blushing or blushing perception.

POSTER SESSION PART 1



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Homocysteine and inflammatory markers levels and reaction time in middle-aged men

The aging population is a growing concern and understanding the physiological processes accompanying aging and their interactions is crucial for developing strategies to counteract its negative effects. One of the important issues is the search for factors contributing to the aging of the nervous system, which can be measured based on reaction time. Homocysteine, an amino acid linked to cardiovascular disease risk, is also implicated in neurodegenerative conditions and faster cognitive decline. Also, acute and chronic inflammation can lead to damage to brain tissue and, consequently, to deterioration of cognitive functions. Both homocysteine and inflammatory state increase with age. The aim of the study was to investigate the relationship between the level of homocysteine and inflammatory markers and the reaction time. The study involved 121 healthy men between the ages of 50 and 60. Reaction time was assessed using two types of simple reaction time measurement to visual stimuli. Serum levels of homocysteine and inflammatory markers (IL-6, ESR, neutrophils, basophils, lymphocytes, WBC, eosinophils, monocytes, procalcitonin) were measured. Inflammatory markers were analysed both individually and as a composite index calculated as the mean of their standardized values. Serum levels of testosterone, estradiol, and cortisol, as well as age, level of physical activity, and body adiposity were controlled. The results showed that higher homocysteine levels were associated with faster reaction time. However, after accounting for the control variables, this relationship was not statistically significant. Similarly, a positive correlation was noted between the composite inflammatory index and reaction time, but no relationship was observed between individual inflammatory markers and reaction time. Future studies should include additional inflammatory markers and assess other cognitive domains to obtain a more complete picture of the relationship between homocysteine levels, inflammation, and cognitive aging.

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POSTER SESSION PART 1



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Assessment of nutritional status and face proportions in people diagnosed with sleep apnea syndrome and in those showing symptoms of this condition

Sleep apnea syndrome (SAS) affects approximately one billion people around the world. It is characterized by episodes of apnea and hypopnea during sleep of various etiologies: obstructive due to the collapse of the upper respiratory tract, central and mixed. There are many risk factors that predispose to SAS like male gender, obesity and craniofacial abnormalities. There are three stages of SAS: mild, moderate and severe. The aim of this study was to investigate the differences in selected craniofacial proportions and nutritional status between people with SAS, confirmed by polysomnography, and people only showing symptoms related to SAS. The same characteristics were also examined between individual disease progression groups. The study included 37 patients diagnosed in Lower Silesian Center of Oncology, Pulmonology and Hematology in Wrocław due to SAS symptoms. There were 28 people diagnosed with SAS who were in the study group and 9 people in the control group who only had symptoms of SAS. All study participants underwent polysomnography and completed a set of questionnaires regarding their health condition, and craniofacial and body measurements. Study showed that people with confirmed SAS had greater body weight and body circumferences (neck, waist and hip) than the control group. Additionally, the study group differed significantly from the control group in several facial proportions. Group with SAS had shorter faces, smaller interorbital distance, and a smaller surface area of the nasal base than the control group. It was also found that people with severe SAS had larger waist and neck circumferences, and a greater waist-to-hip ratio than the group with mild or moderate apnea. There were no intergroup differences in craniofacial proportions. Craniofacial abnormalities can be valuable predictors of SAS. Further research is required to use morphological features to diagnose sleep apnea syndrome.



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In-group Similarity Preferences in Mate Selection: The Role of the Behavioral Immune System

One of the universal qualities considered attractive is good health, which indicates good genes (Little et al., 2011). Despite universal qualities such as sexual dimorphism (Rhodes, 2006), more recent studies emphasize similarity-to-ingroup as an important but at the same time subjective health-related cue (Bressan, 2021). While mating with closely related individuals (characterized by high similarity) can result in genetic disorders and miscarriage (Bittles, 2001), mating with genetically dissimilar individuals can disrupt gene complexes and suppress genes adapted to specific environments (Bateson, 1983). Moreover, as organisms develop resistance to local microbes, contact with a 'stranger' increases the risk of infection from novel pathogens (Schaller & Murray, 2010). Hence, the balance between inbreeding and outbreeding becomes a complex trade-off, making an ideal partner neither too similar nor too dissimilar (DeBruine et al., 2008). Here, we test the role of the Behavioral Immune System (BIS) in shaping preferences for similarity in potential partners.



POSTER SESSION PART 1



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Eye contact with conspecifics with scleral depigmentation elicits reduced rate of contact calls in pygmy marmosets (*Cebuella pygmaea*)

Previous studies suggest that reduced scleral pigmentation (i.e., around the iris) in primates is a by-product of selection against aggression, thus functioning as an honest marker of reduced emotional reactivity. Pygmy marmosets are known to show signs of arousal upon eye contact with human experimenters and to emit vocalisations in situations when they are aroused. More specifically, pygmy marmosets emit two contact calls – the trill, common to other callitrichids, and the species-specific J-call. This study compares marmoset vocalisations when exposed to stimuli depicting conspecifics with different levels of scleral pigmentation. If scleral depigmentation marks reduced emotional reactivity, we expect fewer vocalisations when exposed to portraits of conspecifics with depigmented sclerae.

We recorded marmoset vocalisations in the Toruń Zoo (Poland), presenting images of conspecifics with light sclera, dark sclera, or closed eyes. We found that disruptions (e.g., zoo keepers entering the enclosure) significantly reduced vocalisation rates, halving them. J-calls were most frequent with closed eyes stimuli, less frequent with dark sclera, and least frequent with light sclera. Other types of vocalisations were not affected by the condition.

This study demonstrates that marmoset vocalisation rates can be used as a proxy for arousal. Our results do not support expectations of “honest temperament signalling”; dark sclera conditions did not elicit greater arousal or vocalisation rates. Instead, our results may respond to perceptual fluency. It seems that disruptions elicit reduced vocalisation rates. If so, it may be that arousal translates into freezing behaviours and that the percept of eye contact in the bright sclera condition was simply clearer due to the contrast between the iris, sclera, and surrounding facial features.

In conclusion, both visual stimuli and distractions significantly influence marmoset vocalisation behaviour. These insights enhance our understanding of primate communication, emphasising the importance of visual cues and controlled environments in behavioural research.

POSTER SESSION PART 1



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"Apemen Faces" - database of artificially generated faces of 'generalised hominins'

We present a first, preliminary version of the Apemen Faces Database, composed of 30 realistic, artificial facial images of generalised "hominins" (15 female, 15 male), with a broad range of applications as stimulus in evolutionary-psychological research. The images are being developed to meet the following criteria: 1) represent a diverse range of facial morphologies that 2) look sufficiently humanlike to be rated on human attributes such as dominance or trustworthiness, but 3) are clearly non-human, i.e. clearly distinct from any extant human population.

The main advantage of this "humanlike but not human" stimulus is that it can be used to rate features outside of the range of human variation. A specific example from our own ongoing research is ocular appearance. Features such as very dark sclerae or bright-yellow irises, which are typical of chimpanzee eyes, look highly unnatural in humans; because of that, human faces cannot be manipulated to have dark sclerae or yellow irises, since this instantly attracts the raters' attention to the manipulation. However, "apemen" faces pass as equally natural when presented with either chimpanzee-like or human-like coloration. By manipulating scleral and iridal coloration beyond what is present in modern-day humans, we can check how these different morphologies affect perceived trustworthiness, conspicuity and threat, which in turn informs influential hypotheses on the evolution of the peculiar human ocular coloration (esp. unusually pale sclerae).

When fully developed, the Apemen Faces Database will constitute a high-quality, versatile stimulus set, openly available to the academic community. It can be productively applied not only to studying ocular appearance, but also to other features or contexts. One example is the study of facial shape configurations with the tools of geometric morphometrics; another is adapting this stimulus for use in studies with non-human primates in zoos.



POSTER SESSION PART 1



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"So scary, so true!". Relationships between opinions about horror movies, morbid curiosity, paranormal beliefs, and life history strategies

People watch horror movies even though their content seems threatening and unpleasant. However, watching horror movies can be explained through an evolutionary lens.

In horror movies, we can see characters avoiding predators and pestilence or trying to make sense of unknown objects and organisms, to which we cannot apply the theory of mind (e.g. psycho-killers) and intuitive biology (e.g. ghosts; Davis, Javor, 2004). Therefore, horror films can serve as a tutorial for coping with real evolutionary threats (Tooby, Cosmides, 2001) and an analogical tutorial simulation for evolutionary adaptive purposes happens in dreams of threatening situations (Revonsuo, 2000). Moreover, the presence of paranormal entities and events in such stories can increase their training value by attracting attention and improving the memorization of the content (Boyer, Ramble, 2001). Morbid curiosity theory also explains humans' interest in terrifying content in terms of searching for knowledge that may protect against real dangers (Scrivner, 2021). On the other hand, less is known about whether interest in horror films correlates with actual functioning in more threatening physical and social environments. In our study, we investigated links between morbid curiosity dimensions (e.g., minds of dangerous people, supernatural danger, interpersonal violence, and body violation), paranormal beliefs, and preferences of common horror themes (e.g., predation, contagion, and person-schema violation). Moreover, we correlated participants' preferences of common horror themes with their life history strategies (fast/slow) as a variable reflecting the characteristics of their environment. Our sample consisted of 226 participants (59 men and 167 women) aged 18 to 49 years ($M = 22.19$, $SD = 5.15$).

POSTER SESSION PART 1



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"Disarming jokes". Relationships between humor, the Dark Triad traits, and styles of resolving couple conflicts

Humor is a multifaceted phenomenon that serves various functions in human life from both evolutionary and practical perspectives. Evolutionarily, humor is considered an adaptive cognitive mechanism, helping with emotional regulation and testing social boundaries and norms. In romantic relationships, humor is an important factor in increasing attraction and relationship maintenance. Women prefer men who make them laugh and men prefer women who appreciate their humor (Bressler et al., 2006). Sex differences in the frequency of joking and laughing persist even in long-term relationships; moreover, in such relationships, the frequency of laughing and evaluation of a partner's jokes correlate positively with dyadic adjustment (Jach et al., 2022). On the other hand, less is known about the functions of humor in processes occurring within relationships, such as conflict resolution. In our research, we investigated whether humor can serve as a strategic tool for resolving conflicts in couples. Our sample consisted of heterosexual individuals who had been in romantic relationships for at least three months. We asked participants to indicate their own and their partner's frequency of joking and laughing and to rate the quality of their own jokes and their partner's jokes. Moreover, we measured participants' humor styles (e.g., affiliative, self-enhancing, aggressive, and self-defeating), the Dark Triad traits (e.g., Machiavellianism, narcissism, and psychopathy), conflict resolution behaviors (e.g., avoidance, agreement, and attack), and their perception of the current relationship (short term/long term). Next, we correlated humor styles and humor-related phenomena (e.g., joking, laughing, and quality of jokes) with the Dark Triad traits and conflict resolution behaviors, controlling for participants' sex and relationship perception.

POSTER SESSION PART 1



Saeed RezvaniNejad (Charles University, Prague, CZ),
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Martin Hula (Charles University, Prague, CZ)

Beyond the Prospect: Examining the Factors That Influence Sleep Location Preferences

Humans spend a significant portion of their lives sleeping, a state of vulnerability that may have influenced preferences for sleep environments. The Prospect-Refuge theory suggests three factors affecting these preferences: prospect (good view), refuge (safety and concealment), and danger avoidance. Distance from the entrance has also been proposed as a factor.

Our research aimed to replicate previous findings and explore new factors, including general anxiety and social aspects of sleeping arrangements. We used 3D bedroom simulations to generate objective scores and improve functional definitions of variables.

Study 1 (N=141 Iranian) found distance and refuge, but not prospect, to be significant predictors of location preferences. We observed sex differences in allocating preferred locations to partners, while both sexes prioritized children's locations.

Study 2 (N=316, Czech and Iranian) used a modified room design. Distance remained the strongest predictor of preferences. Curtained beds, as modern artificial refuge modifiers, increased preferences across locations. Anxiety levels showed no significant correlation with actual sleeping locations or preferences. The pattern of allocating preferred locations to partners and children persisted. Czech participants showed more distinct preferences between most and least preferred sites compared to Iranians.

Our findings highlight the sensitivity of sleeping preferences to social parameters and suggest that previous studies may have overestimated the importance of the prospect element. The research provides insights into the complex interplay of factors influencing human sleeping location preferences across different cultures.



POSTER SESSION PART 1



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Sex differences in the anatomy learning methods - preliminary results of the anonymous study realized among medical students

Introduction: Studying human anatomy is an essential element of medical education. Many aspects can impact the learning process.

Aim: The study aimed to reveal the differences in the performance and choice of learning methods of anatomy learning in medical students and their relationship with the obtained results.

Materials and methods: The anonymous questionnaire concerning learning anatomy methods was conducted among 111 medical students from Opole University from 01.04.2024 to 01.06.2024. 21 questionnaires were excluded from further analysis (the first-year students, and students who did not report their sex or grade obtained from the anatomy course). A total of 90 questionnaires (57 women, 33 men; age range:20-31; Mean:22,34; Mean:21,5) were subjected to the statistical analysis (Excell and Statistica v.12.).

Results: No differences between female and male students were found in the final grade (4,77vs.4,65; $p = 0,141$), attendance to the lectures (74,14%vs.66,67%; $p=0,448$) and to the anatomical dissecting room (71,19%vs.81,81%; $p=0,604$), preferring study alone than in pair/group (73,68% vs.72,72%; $p=0,921$), use of mobile phone during learning (64,91%vs.81,81%; $p=0,088$). No relationship was found between the female students' assessment and attendance to lectures ($p=0,257$) or the dissecting room($p=0,161$), the use of distractors ($p=0,398$), and the way of learning (alone or in pair/group; $p=0,306$). No relationship was revealed between the male students' assessment and attendance at lectures ($p=0,127$) and the dissecting room ($p=0,451$), the use of distractions ($p=0,466$), the way of learning (alone, in a couple or in a group; $p=0,0739$). Male students who regularly changed their environment during the learning process obtained better grades than those who didn't (4.89 vs.4.56; $p=0,009$). This relationship was not confirmed in the female students(4.83vs.4.727; $p=0,203$).

Conclusions: The learning environment is an important aspect of the learning process. The effective ways of studying differ among sexes. Regular changes in the learning environment improve the male students' performance.



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POSTER SESSION PART 1



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What is the awe for? Awe as a social hierarchy reinforcement emotion

Awe is an emotion composed of two factors: perceived vastness and the need for accommodation. Perceived vastness involves a sense of encountering a vast stimulus, whether physically (e.g., a panoramic mountain view), mentally (e.g., contact with a deity or a charismatic leader), or cognitively (e.g., a grand theory). The need for accommodation is defined as the process of assimilating an experience into existing mental structures (Keltner & Haidt, 2003). The evolutionary function of awe remains a topic of debate in the scientific community. One theory posits that awe originally evolved as a response to power, such as interactions with individuals who hold high positions in the social hierarchy (Keltner & Haidt, 2003). This hypothesis suggests that a positive reaction to dominance reinforces social hierarchy, thereby increasing the survival chances of group members. Conversely, another theory suggests that displaying awe can signal high social status to potential partners, as it is associated with access to awe-inspiring objects (Konecni, 2005).

We investigated these opposing hypotheses in a correlational study (N = 281) and found a positive correlation between the predisposition to experience awe and the subjectively perceived social status. The more someone is likely to experience awe, the higher their perceived social status is. However, the correlation analysis did not reveal any effect between the predisposition to experience awe and opposition to authority or the need for power. This is consistent with the theory that expressing admiration may signal a high social status, associated, with access to objects worthy of awe.

POSTER SESSION PART 1



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Gesture and stress regulation: self-touches as coping mechanisms. A theoretical review

Self-touches, just like gestures, attract visual attention in face-to-face interaction (Orzechowski et al., in review). They, however, have a different role from co-speech hand movements - rather than augment speech, they inform others about their interlocutor's emotional state. Neuropsychological research shows that self-touch-related sensorimotor stimulation may lower emotion-related cognitive load (Grunwald et al., 2014). Parents with higher levels of parental stress use self-touching and touching a child's face as self- and child-soothing techniques (Alghowinem et al., 2021). On a biochemical level, self-touching as a soothing technique is shown to lower cortisol levels (Kikuchi et al., 2018). Mueller et al. (2019) write that despite research showing that cognitive and emotional load play a role in the occurrence of self-touches directed towards the face, we still do not know much about the physiological underpinnings of this behaviour. In our poster, we present a systematic (though a narrow) review of literature and theoretical basis for self-touching behaviours. We start with self-regulatory behaviours in children, we discuss the developing brain in adolescents, and we present recent research on self-touching behaviours in adults in communicative setting. We also provide examples of self-regulation in non-human animals. Eventually, we propose an eye-tracking research design which links self-touching to empathy and emotional intelligence.



POSTER SESSION PART 1



Jakub Fořt,
Dominika Benešová,
Petr Freudenfeld,
Jaroslava V. Valentova,
Jan Havlíček

Exploring the Interplay of Sexual Orientation, Gender Nonconformity, and Psychological Well-being and Self-Esteem

Sexual minority individuals often confront unique challenges because of living in a predominantly heterosexual society, leading to, e.g., impaired psychological health and lower levels of well-being and self-esteem. Recent research suggests that their relatively higher gender nonconformity (GN; nonconformity to norms for traditional masculinity and femininity) contributes to these differences. In an online survey, Rosenberg Self-Esteem Scale (RSES), Satisfaction with Life Scale (SWLS, well-being measure), and The Recalled Childhood Gender Identity (RCGI) was administered to Czech self-identified heterosexual (N = 2,225), gay/lesbian (N = 1,713), bisexual (N = 1,301), pansexual (N = 418), and asexual (N = 175) men and women. We performed ANCOVAs for two focal measures (RSES & SWLS), separately for each sex, both not controlled and controlled for childhood gender nonconformity. Our findings revealed notable disparities; specifically, pansexual men exhibited lower self-esteem than heterosexual, homosexual, and bisexual men. Similarly, pansexual men showed lower well-being than heterosexual and homosexual men, and bisexual men showed lower well-being than heterosexual men. In women, asexual, bisexual, and pansexual individuals reported lower self-esteem than heterosexual and homosexual women, and pansexual women reported lower self-esteem than bisexual women. Asexual and pansexual women showed lower well-being than heterosexual and homosexual women, and bisexual and homosexual women had lower well-being than heterosexual women. Notably, the level of childhood gender nonconformity partially explained some of these differences, i.e., gender-nonconforming individuals had lower self-esteem and well-being. Our results are in line with previous studies. These differences can be partially explained by differences in their gender nonconformity, indicating possible victimization of gender nonconforming individuals and/or different coping mechanisms among gender nonconforming individuals.



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POSTER SESSION PART 1



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Przemysław Żywiczyński (Nicolaus Copernicus University, Toruń, PL),
Petr Tureček (Charles University, Prague & Charles University and Czech Academy of Sciences, Prague, CZ),
Sławomir Wacewicz (Nicolaus Copernicus University, Toruń, PL),
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Theresa Matzinger (University of Vienna, AU)

Different culture, similar view: Congruence in eye colour perception in WEIRD and non-WEIRD samples

Insights from genetics, cross-cultural psychology, and evolutionary linguistics challenges the existence of a universal human colour naming system. Nevertheless, research treats the phenomenon of eye (iris) colour variation as a fact that is perceived constantly by everybody. The question whether raters from distinctive cultural origin agree on iris colour has been, perhaps consequently, understudied. Using a large set of colour-calibrated facial photos of individuals from Czech population, a population with naturally high iris colour variance (N=195, 106 women, 89 men, mean age=23.23±4.17), we asked participants of Czech (N=61) and South African (N=25) origin to assess eye colour of the photographed persons. We measured iris colour in CIELab L*a*b* colour space. The eye colour has also been assessed by a group of Czech psychologist and biologist (N=10). The resulting eye colour categorisation pattern did not significantly differ between the three groups (male eyes: $\chi^2(6,89) = 7.55, p=0.27$; female eyes: $\chi^2(6,106) = 8.78, p=0.19$). Eye colour variance in a* and b* scale is relatively small (a* from -3.11 to 12.77, b* from -6.67 to 20.91); however, the variance is a credible predictor the iris colour categorisation. According to Bayesian multinomial regression (run separately for each raters' sample and sex of stimuli), each samples' ratings are affected mainly by red-green (a*) and blue-yellow (b*) channels: Human raters respond to a* and b* variance in a predicted way (lower a* and b* values lead them to assess the eyes as "blue", rather than "brown", and the other way round). Regardless of varying expertise in the field (the scholars vs. random samples), and different anticipated knowledge of iris colour variance (Czech vs. South African raters), we observe nearly identical pattern of results in all the three samples. Updated results, based on a broader cross-cultural sample of raters will be available at the time of the conference.

POSTER SESSION PART 1



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Andrzej Galbarczyk (Jagiellonian University Medical College, Krakow, PL)

Oral sex may serve as low mate value compensation among men: Evidence from a preregistered study

Our study explores whether men with lower mate value (MV) compared to their female partners use active oral sex (specifically cunnilingus) as a strategy to retain their partners. Evolutionarily, maintaining a committed relationship is crucial for reproductive success but involves risks such as infidelity. Partners usually prefer similar MV to avoid rejection, but when a mate value discrepancy (MVD) exists, the lower MV partner might use strategies like active oral sex to maintain the relationship. We hypothesize that men with lower MV than their partners perform cunnilingus more frequently to sexually satisfy them and reduce the risk of infidelity. Furthermore, we hypothesize that this relationship is moderated by men's perceived vulnerability to disease (PVD). We predict that men less concerned about disease will show a stronger link between MVD and cunnilingus frequency, as active engagement in oral sex poses a substantial risk of exposure to health-threatening pathogens. Data from 540 men in committed heterosexual relationships show that higher MVD (when the man's MV is lower than his partner's) leads to a higher motivation to sexually satisfy partners, resulting in more frequent cunnilingus. PVD does not moderate this relationship. Our study provides evidence that men perform cunnilingus on their female partners as a benefit-provisioning mate retention behavior to reduce the risk of their partner's infidelity. This behavior appears to be a form of compensation for their lower MV compared to their partners.

POSTER SESSION PART 1



UNIVERSITY OF SILESIA
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Julia Zaborowska (Nicolaus Copernicus University, Toruń, PL),
Mahzad Berenji (Nicolaus Copernicus University, Toruń, PL),
and Antoni J. Zyndul (Nicolaus Copernicus University, Toruń, PL)

Emojis on, Gen Z! The Grammatical Roles and Placement Patterns of Emojis in Computer-Mediated Communication of Generation Z

Since their introduction in 1999, emojis have revolutionized digital interaction, filling the gap created by the lack of non-verbal cues in Computer-Mediated Communication (CMC) (Tang and Hew 2019: 2459). As language is not only transmitted culturally but also functions as a carrier of cultural information (Kirby et al. 2008), we aimed to assess whether the evolution of non-verbal communication, in the form of emojis, undergoes cultural evolution similarly to linguistic communication. Previous studies suggest cultural differences between generations in emojis and CMC use (Coomes and DeBard 2004, Lu 2022, Cohn et al. 2019, Guntuku et al. 2019). Cohn et al. (2019) conducted an experiment on Millennials, in which they found that emojis replace nouns and adjectives more often than verbs and adverbs in messages. To build up on that data, our study focused on generational differences in word-emoji substitution of Generation Z. We hypothesized that nouns and adjectives would be replaced with emojis more often than verbs and adverbs. The participants were presented with twenty sentences, each followed by four answer options where different parts of speech (nouns, verbs, adverbs, and adjectives) were replaced by emojis. Participants were to choose the answer with the word-emoji substitution they would most likely use when messaging. We applied a logistic regression model to fit the data, presenting the results in a form of a pairwise comparison. The results of the model showed that Generation Z replaces nouns and verbs with emojis ($\beta = -0.095$, $p < 0.01$) more often than adverbs and adjectives (noun-adverb $\beta = 0.17$, noun-adjective $\beta = 0.185$, $p < 0.001$), which is partially in accordance with the hypothesis. Our findings differ from those from Cohn et al. (2019) study; Generation Z contrasts with Millennials, who more commonly substitute emojis for nouns and adjectives, indicating a potential generational difference in emojis used as non-verbal cues in CMC.



POSTER SESSION PART 2



Vojtěch Fiala (Nicolaus Copernicus University, Toruń, PL),
Petr Tureček (Charles University, Prague; Charles University and Czech Academy of Sciences, Prague, CZ),
Zuzana Štěrbová (Charles University, Prague, CZ),
Sławomir Waciewicz (Nicolaus Copernicus University, Toruń, PL)

Facial characterisation is culture dependent, but social media use matters, too

Cultural and ethnical distances cause lower agreement in facial characterisation between mutually unfamiliar cultures. On the contrary, access to mass media like television and internet, makes the facial characterisation more congruent across cultures. However, these new information channels may be mere correlates of other civilisation resources and the change in preferences can be just an adaptive reaction to improved health, wealth, and more equal and predictable environment.

We tried to estimate the exclusive effects of visual diet, operationalised as the intensity of social media use. Participants from two distant countries (Czech Republic [N=152] and South Africa [N=47]) rated Czech faces (N = 195, 106 women, mean age=23.23±4.17) on Trustworthiness and Attractiveness. Faces were previously rated by a large Czech 'Control' sample (N=777, 577 women), which presented the baseline, to which the other groups' ratings were compared. The 'New' raters answered questions about their social media use and were split into higher and lower intensity user groups, blocked by the country.

A Bayesian mixed effect model revealed no systematic difference between ratings of Czech and South African raters and a systematically lower correlation between Czech and South African raters. However, for attractiveness, alternative analysis with averaged ratings for each face, showed a decreasing congruence, measured as correlation, between the Control and the New samples: Czech frequent social media users (mean correlation=0.93 [95 % CI: 0.90; 0.95]) infrequent Czech users (0.89; [0.85; 0.92]), followed by South African frequent (0.70 [0.64; 0.76]) and infrequent users (0.61, [0.53; 0.68]). 95% Credibility intervals for the differences between these correlations did not overlap zero.

All raters had some internet access. However, the results suggest that intensive use of online social media is a relevant factor for cross-cultural agreement in facial characterization, once we average the individual ratings over a face.



POSTER SESSION PART 2



Zuzanna Schneider (University of Silesia, Katowice, PL),
Marcin Moroń (University of Silesia, Katowice, PL)

Are you going to manipulate me? Facial makeup and attribution of manipulativeness

Facial makeup has been associated with ambiguous social perception. Although women wearing makeup were perceived as attractive and warm, other studies indicated that they were also perceived as dominant and less trustworthy. Makeup has been described as a tactic to attract mates and compete with rivals, which indicates that it may be perceived as a sign of an intention to exert influence. The present studies examined 382 participants to investigate whether the presence or absence of makeup would affect the attribution to women of attractiveness and the tendency to exert influence tactics to get what they want. In the first experiment, with two within-subjects factors design: makeup (no makeup vs. light makeup vs. full makeup) x interpersonal influence tactic, women with light or full makeup were perceived as more likely to use dominant, calculating and cold influence tactics compared to women with no makeup. Higher attractiveness attributed to women led participants to attribute a higher likelihood of dominance tactic to women with light makeup, but also a higher likelihood of warm, ingratiating and gregarious tactics to women with light and full makeup. In the second experimental study, with one between-subjects factor: makeup and one within-subjects factor: influence tactics, the makeup effect was non-significant. Attractiveness attributed to women predicted attribution of higher willingness to use warm but submissive influence tactics to women in no makeup condition, both submissive and dominant warm tactics in light makeup condition, and lower willingness to use cold influence tactics in heavy makeup condition. The results showed that the makeup effect on attribution of influence tactics may be due to attractiveness attributed to women wearing makeup.

POSTER SESSION PART 2



Jakub Krasucki (University of Wrocław, PL)

“My sheep listen to my voice!”: How men’s storytelling and public speaking abilities relate to their charisma, leadership competence, and policy control – an evolutionary approach

What makes a great leader? The ability to effectively communicate and inspire others has long been considered a cornerstone of leadership. From an evolutionary perspective, storytelling may have evolved as an adaptive trait that enhances the manipulation of audience behavior, thereby enhancing the fitness of the narrator. This perspective aligns with the Machiavellian intelligence hypothesis, which suggests that storytelling skills have evolved to manipulate and influence others, thereby enhancing the storyteller’s leadership abilities. In this study, men’s storytelling and public speaking abilities were examined in relation to key leadership attributes: charisma, leadership competence, and policy control. A power analysis was performed to estimate the minimum sample size. In total, 149 Polish men participated in the study (age range: 18–81; $M = 30.37$; $SD = 11.12$). Participants filled out a set of self-report measures via an online survey and completed: 1) the Storytelling Ability Questionnaire – a preliminary scale for measuring storytelling skills; 2) the Polish translation of the short-form of the Personal Report of Confidence as a Speaker; 3) the Polish adaptation of the General Charisma Inventory; and 4) the Polish version of the Sociopolitical Control Scale. Regression analysis was used to test the hypotheses. The results showed that men’s storytelling and public speaking abilities were significant predictors of their charisma, leadership competence, and policy control, thus confirming the hypotheses. Findings are discussed in light of an evolutionary approach.

POSTER SESSION PART 2



Ádám Putz (University of Pécs, HU),
Adrián Fehér (University of Pécs, HU),
Ferenc Kocsor (University of Pécs, HU),
Andrea Czibor (University of Pécs, HU),
Szabolcs Ajtony Bandi (University of Pécs, HU),
Dorian Vida (University of Pécs, HU),
Viktor Márton Kemény (University of Pécs, HU),
Gyöngyvér Csapó (University of Pécs, HU),
András Láng (University of Pécs, HU)

The Impact of Mind Perception and Machiavellianism in an Inter-Group Social Dilemma Game

The dynamics of intra- and intergroup cooperation have been extensively examined from evolutionary and social psychological perspectives. Prior research has established that individuals with higher levels of Machiavellianism tend to adopt more selfish strategies in social dilemmas, aiming to maximize personal gain through manipulation and exploitation. Furthermore, it has been observed that high Machiavellian individuals often exhibit impaired mind-reading abilities and perform poorly on mind perception tasks. This suggests that their manipulative tendencies may stem from an inability to attribute intentions, emotions, and moral rights to others.

This study investigates the relationship between mind perception, Machiavellianism, and strategic behavior in an Inter-Group Social Dilemma, specifically the Flood Defense Game (N = 259). Participants were tasked with allocating resources among three locations to defend against an impending flood, representing selfish, in-group favoring, and interdependent strategies.

While no direct link was found between mind perception scores and Machiavellianism, the results indicate that higher mind perception abilities lead to fewer resources spent on selfish strategies among low Machiavellian individuals. Conversely, lower mind perception scores were associated with fewer resources allocated to protect one's own village in low Machiavellian, but not in high Machiavellian participants.

These findings suggest that both mind perception and Machiavellianism influence strategic decision-making in inter-group social dilemmas. However, mind perception appears to play a more minor role, exerting only a limited impact on resource allocation strategies. This research contributes to our understanding of how individual differences in psychological traits affect cooperative and competitive behaviors in complex social contexts.



POSTER SESSION PART 2



Wiktoria Majewska (SWPS University, Warsaw, PL),
Dawid Mikulski (SWPS University, Warsaw, PL),
Julia Sachar (SWPS University, Warsaw, PL),
Magdalena Iwan (SWPS University, Warsaw, PL),
Justyna Zaucha (SWPS University, Warsaw, PL)

Embracing well-being: Does the frequency of touch relate to our well-being?

In relation to the COVID-19 pandemic and the associated isolation, many people began to notice deficiencies in feeling close to others. One of the elements that may be missing due to such isolation is touch. The positive impact of touch can be observed among other species. For example, mice administered with oxytocin increased their grooming behaviors and other primates often groom close individuals, which positively affects social bonding among them. Given how essential touch is for the functioning of animals, we assumed its significance would be noticeable among humans. We hypothesized that the subjective sense of fulfilling the need for touch might be correlated with current well-being. We assumed that a fulfilled need for touch would positively correlate with currently perceived well-being. So far, many beneficial correlates of meeting this need have been demonstrated. For instance, touch reduces stress in infants and positively influences liking others. In the context of the pandemic, it was also discovered that touch deprivation resulting from isolation is positively associated with greater anxiety and a sense of loneliness.

We investigate this assumption in a correlational study (N = 207). Specifically, we examine whether current satisfaction of the need for touch positively correlates with well-being. Additionally, we aim to determine whether the relationship between well-being and the subjective sense of fulfillment of the need for touch is stronger in individuals who enjoy touch compared to those who do not. Our results are discussed in the context of the evolutionary basis of touch and grooming behaviors, and its function in the process of creating social bonds.

POSTER SESSION PART 2



Jakub Zgutka (SWPS University, Warsaw, PL),
Joanna Sweklej (SWPS University, Warsaw, PL)

Authoritarianism like any other: testing the authoritarianism symmetry hypothesis from the evolutionary perspective

Traditionally, authoritarianism has been considered a far-right characteristic. However, recent evidence provides support for the existence of Left-Wing Authoritarianism (LWA), formerly referred to as a “Loch Ness monster of social psychology”. Some researchers have proposed the “authoritarianism symmetry hypothesis” – a notion that both constructs share their core characteristics and are created by the same mechanisms in right-wing and left-wing individuals. They are both positively correlated with prejudice – against environmental groups in case of the Right-Wing Authoritarianism (RWA) and against religious minorities in case of LWA. There is also a positive correlation between dogmatism and both constructs.

Current project’s goal is to test the authoritarianism symmetry hypothesis from the evolutionary perspective. According to Behavioral Immune System (BIS) research, several constructs related to conservatism, including RWA, can be reinforced when individuals experience higher perceived pathogen threat. From this perspective, RWA is a strategy focused on avoiding outgroups and eliciting compliance with the rules within group. It is hypothesized that similar effect should occur for LWA. In the current project, two studies have been designed. Study 1’s objective is to investigate if there is a correlation between perceived pathogen threat and LWA. This study is currently in progress. In Study 2 (planned start after collecting data for Study 1), causal connection between perceived pathogen threat and LWA will be verified. Both studies will utilize measures commonly used in the (BIS) research as well as novel left-wing authoritarianism scales.



POSTER SESSION PART 2



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Lenka Martinec Nováková (National Institute of Mental Health, CZ),
Dagmar Schwambergová (National Institute of Mental Health, CZ),
Iveta Hocko Fajnerová (National Institute of Mental Health, CZ),
Jan Havlíček (National Institute of Mental Health, CZ)

Are beliefs that one emits an unpleasant body odour associated with odour sensitivity and olfactory abilities?

Olfactory Reference Syndrome (ORS) is a psychiatric condition characterized by individuals strongly believing they emit a foul smell. Recently, it was suggested that the ORS might be linked to obsessive-compulsive disorder (OCD). However, the association between the ORS and olfactory abilities or self-reported odour irritability remains unclear. We explored a possible link between ORS severity and odour irritability in the general population (S1), and between ORS severity and odour identification/discrimination in OCD patients and healthy controls (S2).

In Study 1, we employed a quota sampling and recruited 996 Czech participants who completed an online survey on the significance of olfaction, olfactory irritability, trait anxiety, and severity of ORS and obsessive-compulsive symptoms. In Study 2, we recruited 25 OCD patients and 26 healthy controls who completed the same set of questionnaires and were tested for their olfactory identification and discrimination.

In Study 1, we found a significant positive association between ORS severity and OCD symptoms ($\beta = 0.09$), trait anxiety ($\beta = 0.15$), and odour irritability/reactivity ($\beta = 0.075$) in the general population. Study 2 revealed that OCD patients differed from healthy controls only in OCD symptoms ($d = 2.44$) and trait anxiety ($d = 0.73$), while healthy controls reported higher significance of olfaction ($d = -0.48$). However, we did not find an association between ORS severity and olfactory identification or discrimination. This suggests that ORS may be more closely linked to self-reported odour irritability and reactivity than to the actual olfactory abilities.



POSTER SESSION PART 2



UNIVERSITY OF SILESIA
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Wioletta Czernicka (University of Wrocław, PL),
Elżbieta Cieplak (University of Wrocław, PL)

Assessment of attractiveness of same-sex individuals with different BMI and body parameters and self-esteem of the assessor

Rationale: The perception of the attractiveness of the female figure is a widely studied topic, however, the perception of the attractiveness of women by other women has only recently attracted more attention from researchers. According to the authors of various studies, the most attractive female figure is usually between BMI 19 and 21, but this is usually the lower range of healthy BMI. Relationship between the body parameters of women assessors and the assessments of the attractiveness of women with different BMI is unclear. The aim of this research was to verify the hypothesis that attractiveness ratings of people of the same sex (female-female) with different BMI is related to the body parameters of the assessing person and her self-esteem.

Methods: In study participated 100 women from Poland in age from 20 to 30 ($M_{age} = 22.3$ $SD_{age} = 2.13$). The study was complex and consisted of collecting data from: questionnaire, participants' assessment of the attractiveness of the presented silhouettes (stimuli) and anthropometric measurements of participants.

Results: The analysis showed relationship between BMI, BAI and WHR of assessing women with attractiveness assessment of underweight and overweight figures. However, there was no relationship between the participants' self-esteem (measured by satisfaction with their own silhouettes and individual body parts) and the frequency with which women compared themselves to others, and ratings of the attractiveness of silhouettes with varying BMI.

Implications: These results suggest that women who consciously evaluate the attractiveness of other women do not take into account how they evaluate their own figure. However, unconsciously, their criticism changes depending on the parameters of their figure.



POSTER SESSION PART 2



Marek Jankowski (Nicolaus Copernicus University, Toruń, PL)
Agnieszka Goroncy (Nicolaus Copernicus University, Toruń, PL)

Breast ptosis: investigation of age of onset and related quality of life

Background: Breast ptosis is known to be associated with age however the actual “normal” age of onset and rate of age-related sagging has not been studied.

Objectives: The objectives of this study were to determine the age when ptosis becomes evident and to recognize the impact of ptosis on women's quality of life. Our ancillary objectives were to find out how accurate women predict the degree of ptosis in their age peers and whether desired positioning of the breasts on the chest is universal as assumed in previous publications

Methods: 519 adult females with no previous breast pathology who were not actively seeking breast enhancing surgery were invited to take part in a survey which included Rainbow Scales of breast ptosis and BREAST-Q patient reported outcome instrument

Results: The transition from Kirwan's grade II to grade III, the first clinically significant stage of breast ptosis, spans two decades. The desired shape of breast is not universal as suggested by previous research, but in case of women is dependent on the degree of ptosis of respondent's own breasts. There is a tendency among women with more advanced ptosis to underestimate the degree of breast ptosis in age peers.

Conclusions: The study provides normative data for age related breast sagging and ptosis-related quality of life. Satisfaction with own breasts follows a non-linear correlation with breast ptosis. Results suggest that wearing a bra may interfere with perception of woman's actual age.

POSTER SESSION PART 2



Konrad Budzyński (PL)

Individual interests in pair of friends - diadic analysis

In the lence of evolutionairy psychology friendships are a peculiar way of establishing lasting bonds within a community - reaching beyond kinship and intersex relationships.

People differ in their ways of perceiving and establishing friendships as well as they differ in the kinds of strategies they broadly use towards social relationships. Some people establish them with a more instrumental approach and ones that engage in them more naively, honestly and emotionally based. Styles of self-actualization is a concept that helps dertermine the types of strategies that people may adopt in social interactions in order to fulfill their needs. The main dimensions identified in this regard are cooperation and synergy, self-protection and the will to actualize oneself.

In this study pairs of friends were gathered in order to deepen the understanding of interaction within the phenomenon of friendship . The fist main aim of this research was to check whether people tend to align themselves according to their self-actualization styles. The second was set to find out if those with more secretive, manipulative and taking attitude can establish a lasting friendship with people more open and giving. Thirdly the study examine how both parties rate their relationship and what kind of benefits both parties can reap from it.

POSTER SESSION PART 2



Monika Kwiek (Jagiellonian University, Krakow, PL)

An Evolutionary Perspective on Collective Narcissism: Enhancing Reproductive Fitness through Creating an Image of Group Superiority

There is extensive literature linking narcissism with a high position in the mating market. Narcissistic males tend to enjoy higher socioeconomic status (Grosz et al., 2020), engage in sexual relationships with more partners (Borráz-León i Rantala, 2021), and receive higher attractiveness ratings from women (Holtzman i Strube, 2009). In evolutionary psychology, narcissism is often portrayed as part of an adaptive strategy that maximises reproductive fitness in short-term mating context (Borráz-León et al., 2019).

Much less is known about the evolutionary perspective on collective narcissism, which involves the belief in the superiority of one's own group, often combined with vulnerable narcissism and intergroup hostility. The literature portrays collective narcissism as an unsuccessful strategy for compensating for low self-esteem, often resulting in increased frustrated personal entitlement (see Golec de Zavala & Lantos, 2020).

This talk attempts to extend the current perspective on collective narcissism with a possible evolutionary explanation. I propose that collective narcissism might be driven by similar motivations to enhance reproductive fitness, as seen in individual narcissism. Creating a self-image of being a member of a superior and entitled group, combined with an aggressive and dominant attitude, might serve as a strategy for increasing one's position in the mating market among individuals with objectively lower mate value.

POSTER SESSION PART 2



Urszula Kurysz (University of Wrocław, PL),
Elżbieta Cieplak (University of Wrocław, PL),
Monika Krzyżanowska (University of Wrocław, PL)

Which students do parents prefer - parental investments in adult offspring

Parental investments are often expressed through biological, financial and time (emotional) investments. Their amount and quality depend on the gender of the parent, the observed sex ratio in the population (Trivers, 1972) and the biological characteristics of the parent, their socio-economic status and child's characteristics. This study focused on the characteristics of adult offspring, e.g. their sex, age, and health status. It was assumed that being older and the second or subsequent child in the family would translate into low levels of parental investment, and that being an only or first-born child, healthy and of heterosexual orientation would be associated with higher investment.

The subjects were first-year students of the University of Wrocław who came to Wrocław to study. Finally, data was collected for 261 students using an original survey. Indicators of the emotional, financial and total investment of the father, mother and both parents were created, as well as an indicator of the student's health.

Statistical analyzes indicated that the student's sex other than male or female ($F=3,15$, $p<0,05$) and non-heterosexual orientation ($F=4,01$, $p<0,01$) is negatively associated with the father's emotional investments. The further away students were from their family home, the less investment they experienced from their mothers ($r=-0,16$, $p<0,05$). Respondents who declared that they were treated worse than their siblings reported significantly lower levels of all investment indicators ($F=5,87$, $p<0,001$). The health of the respondents showed a negative correlation with the emotional and total investments of both parents together ($r=0,21$, $p<0,001$ and $r=0,13$, $p<0,05$) and individually (for mother $r=0,21$, $p<0,001$, $r=0,15$, $p<0,05$, and for father $r=0,19$, $p<0,01$, $r=0,15$, $p<0,05$). The age of students, the sibling's sex and birth order did not show any relationship with investment indicators. Therefore, it can be said that parents prefer healthy, heterosexual male or female students, regardless of their birth order.

POSTER SESSION PART 2



Maja Pietras (University of Wrocław, PL),
Łukasz Piotr Pawelec (Wrocław University of Environmental and Life Sciences, PL),
Monika Krzyżanowska (University of Wrocław, PL),
Anna Lipowicz (Wrocław University of Environmental and Life Sciences, PL)

Discriminant analysis of postmenopausal women's voices in the context of the evolutionary significance of voice pitch as a signal of strong sexual dimorphism

While existing literature suggests that menopause can influence certain acoustic parameters, findings remain inconclusive. This research aims to explore the extent of vocal variations among men, premenopausal and postmenopausal women. The objective of this study was to utilize discriminant function analysis to classify postmenopausal female voices into either men or women categories and to evaluate the validity of this method.

The sample comprised 199 volunteers aged 18-72 y., divided into two groups: (i) 81 men and 103 premenopausal women, (ii) 15 postmenopausal women. Each participant underwent measurements of height and body mass, as well as voice recordings of five sustained vowels: /a:/, /ɛ:/, /i:/, /ɔ:/, /u:/. Acoustic analysis was conducted with Praat software to extract acoustics parameters such as: fundamental frequency (F0), formant frequencies (F1-Fn), intensity, jitter, shimmer, and harmonics-to-noise ratio (HNR).

The analysis revealed that F0 and intensity were the most significant variables in the discriminant analysis based on participants' sex, with F0 showing the highest significance in the intergroup correlation between the canonical discriminant function and acoustic variables. Classification accuracy was high, with female voices correctly labeled at 99% and male voices at 93,8%. Notably, all voices of postmenopausal women were accurately classified as female voices.

The findings of this study align with existing research, confirming that discriminant analysis primarily relies on F0. The observed differences in male and female voices are likely due to variations in laryngeal size and vocal cords' length, which develop during childhood and adolescence. It suggests that hormonal changes during menopause have a minimal impact on voice parameters and sexual dimorphism of vocal apparatus is a strong predictor of human voice quality. These results reveal that voice is a reliable biological signal which is crucial to sexual selection.



POSTER SESSION PART 2



Michael Pleyer (Nicolaus Copernicus University, Toruń, PL)
Svetlana Kuleshova (Nicolaus Copernicus University, Toruń, PL; Université Paris Nanterre, FR)

Braided Streams and Weakly Structured Stems: What are the Implications of New Models of Human Evolution for the Emergence of Language?

"Findings in palaeoanthropology and related disciplines in the last two decades have led to new conceptual frameworks for understanding human evolution (e.g. Bergström et al. 2021; Harvati & Reyes-Cento 2022). These especially concern the role of admixture in human evolution, hominin social dynamics, and the antiquity of hominin cognitive capacities. However, the new models of human evolution growing out of these findings have so far not been brought into detailed contact with language evolution research.

In this talk, we discuss potential implications of new models of human evolution for the emergence of language. We focus on three aspects: (i) new studies proposing that homo sapiens evolved from a patchwork of populations in different parts of Africa (the 'weakly structured stem' model; Ragsdale et al. 2023); (ii) models that conceive of human diversification in- and outside of Africa as an open 'braided stream' network (e.g. Ackermann et al. 2019); (iii) recent re-evaluations of the cognitive and linguistic capacities of Neanderthals and homo heidelbergensis (e.g. Dediu & Levinson 2018; Sykes 2020; Kuleshova 2024).

Discussing these models puts into focus the role of cultural evolution and population dynamics in the emergence of complex behaviours such as language in an intricate mosaic of cultural trajectories (e.g. Heyes 2018; Scerri & Will 2023).

These new models of human evolution have wide-ranging implications for research on language evolution. Specifically, we argue that they support accounts that highlight the role of interaction, cultural and social dynamics. They also resonate with approaches in cognitive contact linguistics which stress that language contact leads to the flexible acquisition of 'multilingual repertoires' instead of 'languages' (Matras 2020). This point of view suggests that the explanatory target of language evolution should be the emergence of (and ability to acquire and use) multilingual repertoires (instead of 'languages').

POSTER SESSION PART 2



Adrián Fehér (University of Pécs, HU),
Ádám Putz (University of Pécs, HU),
Anita Deák (University of Pécs, HU),
Orsolya Inhof (University of Pécs, HU),
Norbert Meskó (University of Pécs, HU),
András Norbert Zsidó (University of Pécs, HU),
Béla Birkás (University of Pécs, HU),
Botond László Kiss (University of Pécs, HU),
Cintia Bali (University of Pécs, HU),
Réka Rendes (University of Pécs, HU),
Julia Basler (University of Pécs, HU),
Tamás Bereczkei (University of Pécs, HU)

Patterns of Cooperation: Behavioral Dynamics in an Inter-Group Social Dilemma

Understanding human cooperation is essential and has been extensively studied in simple scenarios such as the Prisoner's Dilemma. However, our understanding of natural human tendencies in more complex situations, particularly those involving in-group versus out-group dynamics, remains limited. In our study, we utilized an experimental social dilemma game called Flood Defence. Participants were tasked with distributing resources between three locations to defend against an impending flood as residents of two neighboring villages, with rewards contingent on successfully stopping the river. These locations represented selfish, in-group favoring, and interdependent strategies. Over nine rounds, experimenters controlled the other players, employing various strategies throughout the game. Our objective was to explore the strategies participants naturally gravitated toward and the personality traits influencing each strategy.

In an online study with 259 participants, we identified seven distinct player types using latent profile analysis. The primary defining factor of these strategies was Machiavellianism. Participants with higher Machiavellianism scores exhibited more flexible strategies, frequently reallocating resources between rounds and displaying more selfish behavior. Conversely, participants with lower Machiavellianism scores were more cooperative with the out-group and maintained more stable strategies. Future research aims to develop methods to encourage cooperative strategies, which could be applied in real-life scenarios to foster collaboration among diverse groups.

POSTER SESSION PART 2



Vojtěch Fiala (Charles University, Prague, CZ; Nicolaus Copernicus University, Toruń, PL),
Petr Tureček (Charles University, Prague; Charles University and Czech Academy of Sciences, Prague, CZ),
Sławomir Waciewicz (Nicolaus Copernicus University, Toruń, PL),
Zuzana Štěrbová (Charles University, Prague, CZ),
S. Adil Saribay (Kadir Has University, Türkiye, TR),
Juan David Leongómez (Universidad El Bosque, Bogotá, CO),
Ondřej Pavlovič (Charles University, Prague, CZ),
Robert Mbe Akoko (University of Buea, Cameroon, CA),
and Karel Kleisner (Charles University, Prague, CZ)

Preferred human eye phenotype in different cultures

"Evolutionary psychology considers the human eye unique among primate species for its white sclera and dark iris. Yet it often neglects the role of within-population variance in eye phenotype for facial characterization. Despite this, evidence suggests that scleral and iris coloration affect perceived attractiveness and sex-typicality, like other facial features do.

To determine which aspects of eye colouration affect how the face is perceived, we measured iris and scleral colour in CIELab $L^*a^*b^*$ across eight samples from seven distant cultures (N=947), distributed across three continents. The faces were assessed on facial attractiveness and sex-typicality by raters from the corresponding populations. Controlling for skin lightness, age, and facial shape, we run a Bayesian model to estimate both global and sample-specific effects, assessing congruence between distant cultures. Given that systematic differences in eye colour variance between cultures may exaggerate the effects of eye colour in some populations, the data were standardized within each sample before pooling.

There was an overall tendency to perceive women with bluer iris as more attractive (mean=-0.18; [95% CI: -0.35; -0.03]). Furthermore, there was a moderate preference for lighter irises in Colombian (0.37 [0.09; 0.56]) and Turkish women (0.32 [0.08; 0.57]), the two populations where very light irises are present, but relatively rare. It suggests on the tendency to prefer rare eye phenotypes once they appear in the population. Simultaneously, raters perceived darker sclera as slightly more attractive and feminine in half of the samples (with the tendency pointing in the same direction in all but one of the other samples).

The results suggest that less conspicuous eyes, with lower contrast between sclera and iris, are perceived as more feminine and, consequentially, as more attractive. These findings contradict the concept that the white-sclera, high-contrast eye phenotype, distinctive from the ape-like eye, is always preferred by human raters.

POSTER SESSION PART 2



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Androgen receptor sensitivity and body masculinization in men

Morphological masculinity is considered a key factor in male attractiveness. From an adaptive perspective, attractive traits convey information about an individual's biological condition. In this context, morphological masculinity has been proposed as a cue of androgen levels. However, many studies find no correlation between testosterone (T) and T-dependent sexually dimorphic traits in men. One explanation is that the effects of T depend on androgen receptors (ARs), which vary in sensitivity due to CAG repeats polymorphism in exon 1 of the AR gene. Shorter CAG repeats increase receptor sensitivity to androgens, while longer repeats decrease it, potentially complicating the relationship between morphological masculinity and androgen levels. This study aimed to verify the relationship between morphological masculinity, AR CAGn, and androgen levels by examining 133 men (mean age 35.50 years) from a homogenous, urban Polish population. Morphological masculinity was assessed using SHR, WHR, facial WHR and sexual dimorphism, grip, torso strength, muscularity index, and 2D:4D ratio. A Composite Masculinity Index (CMI) was calculated by averaging the z-scores of these parameters. Serum androgen levels (T, fT, DHT) were measured, and AR CAG repeat lengths were analyzed from buccal swabs. The results showed that only SHR and fWHR were positively related to total T but unrelated to AR CAG repeat length. There was also no interaction between androgen levels and AR CAG repeat length in relation to masculine traits. The results align with studies suggesting that normal variability of AR CAGn has little or no impact on T-dependent phenotypic characteristics and that AR sensitivity may be compensated by varying androgen levels throughout ontogenesis. Therefore, the lack of association between CAG repeat length and masculine traits does not fully undermine their validity as indicators of T.

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