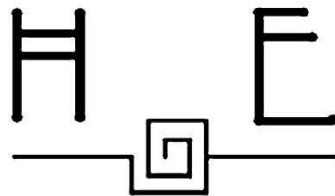


# ISHE 2021 Online Meeting



Human Ethology is the Official Journal of  
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## **TWIN RELATIONSHIP AND PERFORMANCE ON A CONJOINT TASK: COOPERATIVE AND COMPETITIVE BEHAVIOURS**

**Caroline A. G. Almeida, Tania K. Lucci, Vinicius Frayze David, Timon Lebaron-Kherif, Ricardo Prist, Emma Otta**

Departamento de Psicologia Experimental, Instituto de Psicologia, Universidade de Sao Paulo, Brasil

[carolinealmeida258@usp.br](mailto:carolinealmeida258@usp.br)

### **ABSTRACT**

*Behavioural observations are essential for understanding social issues such as cooperation and competition. There is a scarcity of research on twin relationships which represent a privileged research design for understanding characteristics of human nature. Besides zygosity twin siblings share unique developmental characteristics which include starting out in the womb together. In order to study cooperative and competitive behaviors in twin siblings aged 5 to 8 years old in a conjoint task and compare it with parents' perception of the twins relationship, a remote data collection design has been developed. One hundred and nineteen twin parents answered an online survey, containing a four items zygosity questionnaire with 96% agreement with DNA tests, and a 16-items questionnaire about twin siblings relationship, aiming to assess closeness, dependence, conflict and rivalry, and dominance. Sixty five of these parents consented that their children participated in the second part of the research, which consisted of a videotaped behavioural task. The twins were asked to draw together their house on a single sheet of paper. We registered the latency (time until each child started drawing) and the total time each twin spent drawing in ten videos (8 regarding Brazilian twins, and 2 regarding French twins) using BORIS software. Initial exploratory analyses using mixed-effect models showed that the methodology was appropriate for discriminating competitive behaviours, since the more conflictive child showed shorter latency to start drawing and the more dominant one spent more time drawing. Future analyses will include new observational variables in order to address cooperative behaviors, such as co-drawing and oral communication..*

## **IF YOU LIKE IT THEN YOU SHOULD'VE PUT A RING ON IT: SIGNAL DETECTION ANALYSES SHOW A FEMALE COMMITMENT SKEPTICISM AND A MALE COMMITMENT OVERPERCEPTION BIAS**

**Lauren C. Anglemyer, Jordann L. Brandner, Gary L. Brase**

Kansas State University, Manhattan, US

[lcangle16@gmail.com](mailto:lcangle16@gmail.com)

### **ABSTRACT**

*Commitment in a relationship can be an important issue for anyone, but because of the greater potential costs women often face in relationships, women tend to be more conservatively biased when evaluating their partner's relationship commitment. Error Management Theory (EMT) explains this commitment skepticism as an adaptive cognitive bias that occurs to favor the smaller error of missing signals of true commitment, as opposed to the evolutionarily more costly error of investing in a relationship with someone who is uncommitted. Signal Detection Theory (SDT) provides a consistent but more extensive explanation of the same pattern in terms of a more conservative bias in errors when evaluating a partner's relationship commitment for women. SDT, unlike EMT, can give both a measure of the predicted bias and also a measure of sensitivity. A mTurk sample of United States English speakers (N = 77) read a series of vignettes pre-rated as depicting commitment or non-commitment and judged if the behaviors in each vignette indicated if their partner was committed to a relationship or not. SDT analyses found that women underestimate commitment ( $c = 0.309$ ) and surprisingly, that men overestimate commitment ( $c = -0.280$ ). Across all participants, sensitivity was high and driving their responses ( $d' = 3.42$ ). A replication study is underway, and cross-cultural studies would help identify if these results are sensitive to cultural factors or relatively consistent.*

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## MAKEUP WORKS BY MODIFYING FACTORS OF FACIAL ATTRACTIVENESS

**Carlota Batres<sup>1</sup>, Alex L. Jones<sup>2</sup>, Christopher P. Barlett<sup>3</sup>, Aurélie Porcheron<sup>4</sup>, Frédérique Morizot<sup>4</sup>, Richard Russell<sup>3</sup>**

<sup>1</sup>Franklin and Marshall College, Lancaster, USA

<sup>2</sup>Swansea University, Wales

<sup>3</sup>Gettysburg College, USA

<sup>4</sup>CHANEL Fragrance & Beauty Research & Innovation, Pantin, France

[cbatres@fandm.edu](mailto:cbatres@fandm.edu)

### ABSTRACT

*Self-adornment is among the oldest and most widespread of human behaviors. From the wide variety of forms these behaviors can take, the practice of facial cosmetics has emerged in multiple cultures and is among the most prevalent. Makeup is known to increase facial attractiveness, but it remains unclear how it does so. We took a theoretically driven approach, borrowing from the rich literature on facial attractiveness and testing the proposal that cosmetics increase attractiveness by modifying five known visual factors of attractiveness: symmetry, averageness, femininity, age, and perceived health. In six studies using 152 carefully-controlled images of female target faces with and without makeup, participants rated the faces on attractiveness and each of the five factors. We then analyzed the effect of makeup on each of these factors, and whether the factors mediated the effect of makeup on attractiveness. Makeup affected all the factors. Additionally, with all five factors as mediators in a multiple mediation model, we observed full mediation of the effect of makeup on attractiveness. The finding that makeup is used in ways that manipulate underlying factors of attractiveness empirically demonstrates a link between beauty and beautification, and forms the basis for a scientific understanding of makeup.*

## **AN ETHOLOGICAL APPROACH TO THE TREATMENT OF OBSESSIVE-COMPULSIVE DISORDERS AND EVOLUTIONARY IMPLICATIONS**

**Mark H. Bernstein**

Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, USA

[mbernstein502@gmail.com](mailto:mbernstein502@gmail.com)

### **ABSTRACT**

*Based on the comparative study of caged groups and caged individuals of New World primates (at the Smithsonian Tropical Research Institute and other sites in Panama) and my work with patients as a psychiatrist, I propose that many behavior patterns presently labeled as psychiatric disorders evolved in both white-faced monkeys (*Cebus capucinus*) and humans to enable individuals to cope with difficult to resolve inter-individual conflicts. Multiple white-faced monkeys in the caged groups developed highly individual, peculiar, repetitive behavior patterns. These behavior patterns appeared to enable these individuals to stay safely engaged in conflicts with problematic others that could not be resolved with normal signaling. They were able to interact with these problematic individuals without getting too close or avoiding them altogether until the conflicts could be resolved, if and when it was possible to do so. From these studies, I have developed an ethological approach for the treatment of patients with obsessive-compulsive behavior patterns, which appear similar to the peculiar behavior patterns exhibited by the white-faced monkeys in similar situations. More recently, using this approach, I have also successfully treated some patients with panic attacks, anxiety, and depression. I will describe the treatment, the results, and the results of the comparative studies that suggest an evolutionary basis for these behavior patterns exhibited by white-faced monkeys and by humans. Further, the evidence suggests for humans that panic attacks, anxiety, some depressions, etc. may also have evolved as coping mechanisms for humans in difficult to resolve inter-individual conflict situations.*

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# TO WEAR OR NOT TO WEAR: GERM AVERSION, GOSSIP, AND EMPATHY AS MODULATORS OF MASK WEARING DURING THE COVID-19 PANDEMIC

**Jakub Binter<sup>1</sup>, Ondra Pešout<sup>2</sup>, Judit Martínez Molina<sup>3</sup>, Michał Pieniak<sup>4</sup>, Edward J. Noon<sup>5</sup>, Michal M. Stefanczyk<sup>4</sup>, Stephanie Josephine Eder<sup>6</sup>**

<sup>1</sup>Faculty of Humanities and Faculty of Science, Charles University, Prague, Czech Republic

<sup>2</sup>Department of Psychology, Jan Evangelista Purkyně University, Czech Republic

<sup>3</sup>Faculty of Psychology, University of Barcelona, Spain

<sup>4</sup>Institute of Psychology, University of Wrocław, Poland

<sup>5</sup>Institute of Childhood and Education, Leeds Trinity University, UK

<sup>6</sup>Department of Neurosciences and Developmental Biology, University of Vienna, Austria

[jakub.binter@fhs.cuni.cz](mailto:jakub.binter@fhs.cuni.cz)

## ABSTRACT

Risk-related behaviors have been linked to social pressure, sex, empathy, and obedience to authorities. The COVID-19 pandemic presents an interesting environment to study risk-taking and putting others at risk in relation to environmental conditions and inter-personal factors, such as perceived risk for oneself and germ aversion, as well as empathy with those affected most by the disease. For example, an important aspect of wearing face-masks is that they mainly protect other individuals, while causing discomfort to the wearer. Therefore, the motivation to comply with such measures is altruism, reciprocity, and mutual trust. Counteracting factors may include distrust in interacting partners, misinformation about the virus, and discomfort caused by the mask. Similarly, the benefits of vaccination vary according to the social environment of the individual, where being vaccinated is more important if one is not surrounded by fully immunized people or has contact with vulnerable others.

Inspired by game theory, our cross-national, pre-registered study investigates environmental and psychological determinants of compliant behaviors as opposed to actions that put others at risk. Participants were presented with hypothetical scenarios regarding mask-wearing, where we manipulated the prior knowledge about the interacting partner. Further, they responded to questions regarding their vaccination intentions in randomized scenarios. They additionally filled in questionnaires assessing empathy, germ aversion, and beliefs about the virus. Preliminary results show that low germ aversion and COVID-related empathy, as well as false beliefs about the virus are major predictors of both risky mask-wearing behavior and low vaccination intentions. No effect of prior knowledge about the hypothetical interaction partner or social group was found, nor did the participants' sex notably affect the decisions. However, we observed pronounced differences between the countries.

In conclusion, this study offers cross-cultural insights in the factors underlying risky decision-making in a pandemic state. Results are discussed in the light of lacking evolutionary adaptation to fast-spreading viral threats, and suboptimal preferences for information acquisition.

## JUDGEMENT OF EXTREME AFFECTIVE STATE EXPRESSIONS IN APPROACH/AVOIDANCE PARADIGM

**Silvia Boschetti<sup>1,2</sup>, Tomáš Hladký<sup>1</sup>, Kamila Machová<sup>2</sup>, Daniel Říha<sup>1</sup>, Jakub Binter<sup>1,2</sup>**

<sup>1</sup>Faculty of Humanities, Charles University, Prague, Czech Republic

<sup>2</sup>Faculty of Science, Charles University, Prague, Czech Republic

[boschetti.silvia@gmail.com](mailto:boschetti.silvia@gmail.com)

### ABSTRACT

*Recognition and identification of emotional expressions and affective states are key aspects of enjoyable mutual social interaction. The two axes that we can place each of the affective states are (a) intensity (low - high) and (b) valence (positive - negative). The appraisal is to large degree automatic, fast and accurate. This is, however, different when extreme affective states are experienced. Previous studies have pointed out that when extreme positive and negative affective states are experienced the ability to correctly identify the valence decreases tremendously with increase of intensity if no additional context is provided (e.g., body posture or even olfactory cues). Such studies were focused on sport, reunion of families, violence. We have focused on the context of sexual interaction. To find stimuli matching the context we used single frame from BDSM videos and 2 second long vocalization from the same moment in the video (10 in total – 5 of each sex containing all of the expressions and vocalizations from each actor) during which the actors/actresses experience (presumably genuine) pain and sexual climax. As controls we have used laughter and neutral expression which were previously showed to be easier to identify in comparison with the above mentioned ambiguous displays. The participants were instructed to respond as fast as they could (the response time was measured) categorizing the valence — the choice between positive, neutral, and negative. The paradigm we have used for rating, the choice between positive, neutral, and negative, matches the approach – avoidance paradigm (approach, no action, withdrawal) to estimate the behavioral response to such situations. Our results confirm our hypothesis that the ratings of facial expression of pain and pleasure are almost equally distributed between negative and positive in both sexes. This shows a general inability to correctly identify the affect in case of pain and pleasure, when expressed by facial display and non-contextualized. We observed similar results, and therefore low discriminatory ability, for pain vocalization while for pleasure vocalization the ratings were more consistently towards the correct categorization (positive). The ratings of the stimuli used as control, neutral and laugh, are consistent with the previous findings with over 90% of correct answers. We conclude that the ability of correctly recognize extreme affective state from facial expression or vocalization (separately), without the presence of a context, is very low in both sexes. This inaccuracy in the judgment can have an impact in the communication and understanding of affective state during sexual intercourse and should be further studied which we already plan on.*

## DOES PREGNANCY ENHANCE SENSITIVITY TO EMOTIONAL DISPLAYS OF THREAT?

**Meghan Burkert, Lauren Larsen, Danielle Siegel, Kaitlin Duskin, Amanda C. Hahn**

Humboldt State University, Arcata, USA

[mfb7@humboldt.edu](mailto:mfb7@humboldt.edu)

### ABSTRACT

*The ability to recognize emotional expressions has important implications for survival and cooperation. Failing to recognize emotions indicative of some form of threat (anger, fear, disgust) may be particularly costly given these emotional expressions communicate a potential source of danger in the environment. During pregnancy, women may be especially vulnerable to environmental threats and an increased sensitivity to threat-relevant emotional displays could help prepare women for the protective demands of motherhood. Previous work has suggested that pregnant women may show enhanced sensitivity to threat-relevant emotions in late pregnancy compared to early pregnancy. The current study sought to determine if pregnancy generally increases attentional bias to threat by comparing the performance of 43 pregnant women and 45 non-pregnant controls on an emotion recognition task. Although it was predicted that pregnant women would show enhanced sensitivity to threat-relevant emotional displays compared to non-pregnant controls, no differences were observed between these groups. Women were relatively accurate at detecting anger, disgust, happiness, and surprise (all above 75% accuracy). They were relatively less adept at detecting fear and sadness (accuracy between 50% and 75%). Additional analyses did not detect any effect of pregnancy duration (in weeks) on threat-relevant emotion recognition. The current study does not support the prediction that the dramatic increases in both estrogen and progesterone that occur as a function of becoming pregnant increase sensitivity to threat-relevant stimuli.*

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## ENVIRONMENTAL SENSITIVITY IN A BRAZILIAN POPULATION

**Vinicius Frayze David**

University of São Paulo, Brazil

[vfdavid@usp.br](mailto:vfdavid@usp.br)

### ABSTRACT

*Environmental Sensitivity is a proposal that aims to understand how individuals process environmental stimuli, suggesting that there are people with high or low sensitivity. It emerges as a counterpoint to the diathesis/stress theory, including a positive sensitivity, which could be beneficial in more sensitive people exposed to more stimulating environments. The present study aimed to adapt the Highly Sensitive Person Scale created to measure this sensitivity to the Brazilian population. 179 Brazilian adults (68% female, age: 31.2 + 13.5) answered a Portuguese adapted version of the environmental sensitivity scale, composed of 27 Likert-type items. The reliability analysis and exploratory factor analysis (EFA) indicated the adequacy of the items and a two-factor structure, divided into a positive sensitivity factor and a negative factor. It was also possible to highlight three classes of individuals through a latent class analysis, divided according to a high, moderate, or low overall sensitivity, and that women tend to be more sensitive than men. A comparison with the Big Five personality inventory showed correlations of negative sensitivity to neuroticism ( $r=.55$ ), and extraversion (.30), while positivity sensitivity was correlated to agreeableness ( $r=.37$ ), and openness to experience (.33). Although the original scale proposed a three factors structure, other adaptations also found only two factors. The results point to the adequacy of the scale adapted to the Brazilian population, and a new data collection is being carried out with a larger sample to verify the findings through confirmatory analyses.*

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## THE EFFECTIVENESS OF ONLINE TEACHER TRAININGS IN THE PERIOD OF COVID-19

Alesa Misaki Durgaryan

[alyaska20@mail.ru](mailto:alyaska20@mail.ru)

### ABSTRACT

*There are different ways and courses in modern world which make every teacher and every specialist of different fields improve and develop their professional knowledge and skills according to nowadays' modern technologies and changes: structural system of educational institutions, learners' pedagogical and psychological peculiarities, etc. All these create new ways and opportunities for trainings of teachers saving not only time but also having an opportunity to using modern technologies for their professional development. Virtual training are considered to be one of the prominent and necessary ways of teacher trainings which is quickly spreading all over the world. All these virtual trainings give a chance to keep in touch teachers from different parts of the world sharing their experience and knowledge, getting some advice on different teaching problems and difficulties. On the other hand virtual trainings are always refreshed and include the latest changes and approaches on teaching sphere. The whole process of organizing teacher training course includes various aspects and stages. The systematic and exact organization of this process gives chances for promotion of educational systems in every country. The whole process should be realized taking into account all the details: beginning from the experience of teachers to educational degree and professional competence of teachers. The topic includes the modern issues and problems of virtual trainings and their process. There are discussed problems concerning to difficulties of virtual training process and its structural system. In the end there are suggested some strategic ways and steps for an effective virtual training process.*

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## BRAZILIAN TWINS SEPARATED AS NEWBORNS AND REUNITED IN ADULTHOOD: A CASE STUDY

Eloísa de Souza Fernandes<sup>1</sup>, Jennifer Leão Correia<sup>1</sup>, Mauro Silva Júnior<sup>2</sup>, Hellen Vivianni Veloso Corrêa<sup>3</sup>, Nancy Lee Segal<sup>4</sup>, Emma Otta<sup>1</sup>

<sup>1</sup>Instituto de Psicologia, Universidade de São Paulo, Brazil

<sup>2</sup>Instituto de Psicologia, Universidade de Brasília, Brazil

<sup>3</sup>Faculdade de Psicologia, Universidade do Pará, Brazil

<sup>4</sup>California State University, Fullerton, California, USA

[eloisa.fernandes@usp.br](mailto:eloisa.fernandes@usp.br)

### ABSTRACT

*Twins separated at birth and reunited as adults represent natural experiments that help to disentangle the influence of genetic and environmental factors underlying human behavioral development. In the USP Twin Panel, our main aim is to conduct and promote research with twins on psychological processes and behavior. To the best of our knowledge, this is the first case study of Brazilian twins separated as newborns and reunited in adulthood. Monozygotic twins, TM and GF, born in a large city in the Northeast coast of Brazil, were separated at 15 days of life. Not sure about each other's existence, they grew up more than two thousand kilometers apart under different social, educational and cultural circumstances. TM lived in many cities, but most of his life was spent in a capital city in Northeastern Brazil, with an estimated population of 2,686,612. In contrast, GF lived all his life in a municipality in Southeastern Brazil, with an estimated population of 337,092 people. The twins first met on their 23rd birthday, during the COVID-19 pandemic. We studied the differences and similarities of this pair of twins through questionnaires and online interviews including the Brazilian version of the Life History Interview, adapted from the Minnesota Study of Twins Reared Apart (MISTRA). Remarkable similarities were found. The twins showed similar scores across the Big Five Personality traits and a shared passion for photography which they use to express their feelings. In fact, both are pursuing a professional career in photography. There were also notable differences between them in self-esteem, optimism, hope, life satisfaction, and sexual orientation. These findings and others are discussed with reference to genetic and cultural influences on behavior.*

## **JEALOUSY PROTEST TO A SOCIAL RIVAL COMPARED TO A NON-SOCIAL RIVAL**

**Ana Maria Fernandez & Michele Dufey**

Universidad de Santiago de Chile, Chile

[ana.fernandez@usach.cl](mailto:ana.fernandez@usach.cl)

### **ABSTRACT**

*Jealousy protest has been theoretically linked to parent-offspring conflict which emerges in human children early in life and protects against the intrusion of social rivals that may challenge maternal resources and caring typically accompanying attachment. Previous studies have revealed that the experimental presentation of social rivals compared to non-social rivals evokes the jealousy protest in infants as early as 6 months of age. In the present study we replicate research of the jealousy protest in a novel language and sociocultural context with infants ranging from 10 to 20 months of age. We compared the jealousy behavior of 45 children when their mothers attended to a life-like baby doll (social rival) and a book (non-social rival), and assessed their temperament and attachment dimensions. As hypothesized infants had a stronger jealousy protest to the social compared to the non-social rival, and their response did not depend on temperament, but did interact with attachment avoidance. We discuss attachment avoidance as a precluding factor of the jealousy protest in face of a social rival, which may not be the case for a less disrupting stimulus like the non-social rival.*

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## DOES PRIMING CUTENESS ENHANCE EMOTIONAL RECOGNITION?

**Jeff Frederick, Andrew Diaz, Amanda C. Hahn**

Humboldt State University, Arcata, USA

[jlf485@humboldt.edu](mailto:jlf485@humboldt.edu)

### ABSTRACT

*Infantile characteristics (kindchenschema) readily capture the attention of adults and have been shown to influence a variety of behaviors associated with caretaking. In particular, simply viewing cute stimuli has been shown to increase behavioral carefulness in adults. Here, we investigate whether sensitivity to emotional displays is also enhanced by viewing cute stimuli. The ability to recognize emotional expressions has important implications for survival and cooperation. Failing to recognize threat-relevant emotions (anger, fear, disgust) may be particularly costly given these emotional expressions communicate a potential source of danger in the environment. Forty-three women completed a facial emotion recognition task before and after priming with cute stimuli. Ten facial identities (5 male, 5 female) were displayed with one of six emotions (threat-relevant: anger, fear, disgust; non-threat-relevant: happiness, sadness, neutral). Participants were tasked with identifying the emotional expression for each of the 60 faces as quickly and accurately as possible. Viewing cute stimuli was found to enhance sensitivity to emotional expressions generally, but was not specific to threat-relevant emotions. These results suggest that priming a caretaking mentality may enhance emotional sensitivity in addition to behavioral carefulness, at least in women.*

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## WILL YOU HELP ME OR NOT? A FIELD EXPERIMENT ON SOCIAL SIGNALS AND CULTURAL GROUP

**Gernot Gerger, Lena Wittmann, Marc Mehu**

Webster Vienna Private University, Austria

[gernot.gerger@webster.ac.at](mailto:gernot.gerger@webster.ac.at)

### ABSTRACT

*Communication is one of the most significant evolutionary adaptations in humans, as it allows the management of complex social environments. Not only verbal, but especially non-verbal and para-verbal signals can have important consequences in social interaction, for example in the context of help requests by strangers. The current research is set out to study how accepting or rejecting requests for help can be reflected in social signals (e.g., facial behaviour, gestures, gaze, and speech) as a function of sex and cultural group membership (Muslim/non-Muslim). The aim of this presentation is two-fold: First, we want to demonstrate the feasibility of conducting a field experiment in which social signals are recorded in maximally ecological, yet controlled, conditions. Second, we want to capitalize on an innovative application of network analyses (NetFACS: Mielke, Waller, Perez, Dubosq, & Micheletta, 2020) to uncover how patterns of co-occurrences of non-verbal and para-verbal signals relate to helping and group membership. In an experimental observational field study conducted in the Viennese public transport system (Austria) - male and female confederates either dressed in western or Muslim clothes (hijab for female; prayer hat and djellaba for male) approached subway commuters to ask for help. This interaction was unobtrusively recorded with cameras and microphones by two experimenters. We observed more transitivity, more density, and lower entropy in social signals directed at the female confederate. Networks of social signals observed in the non-Muslim condition showed more density and transitivity than in the Muslim condition, suggesting different communication styles towards another cultural group. We also observed distinct patterns of associations between social signals when people engaged in helping. All in all, considering co-activation patterns of communicative behaviour can yield deeper insight in the study of intergroup relations. We will discuss these outcomes in line with evolutionary as well as socio-psychological theoretical frameworks.*

## **THE EFFECTS OF ORAL CONTRACEPTIVES ON MOOD AND AFFECT: A META-ANALYSIS**

**Amanda C. Hahn, Erica Motter, Aisha M. Boudiz, Chris Aberson**

Humboldt State University, Arcata, USA

[amanda.hahn@humboldt.edu](mailto:amanda.hahn@humboldt.edu)

### **ABSTRACT**

*Combined oral contraceptive (COC) pills are widely used by women of reproductive age, but there is still little conclusive evidence that exists about the mood-related side effects associated with their use. This meta-analysis examined the relationship between oral contraceptive use and mood effects such as depression and anxiety to determine what role, if any, that COCs may have in the worsening or improvement of women's mood when taking them. Effect sizes compared the differences in women's mood scores before taking COCs and after one or more cycles of use. Seventeen studies made up of 25 individual samples contributed 71 effect sizes for this analysis. The results suggest that COCs tend to contribute to a small but significant improvement in women's overall moods. However, still methodological inconsistencies and difficulties make it difficult for researchers to make and firm conclusions about the role of COCs in mood.*

## EFFICIENCY THROUGH SIMILARITY – THE EFFECT OF PERSONALITY ON COOPERATION AMONG JAPANESE MACAQUES (*MACACA FUSCATA*)

Roy Hammer<sup>1</sup>, Mathieu S. Stribos<sup>1</sup>, Lena S. Pflüger<sup>2,3</sup>, Jorg J.M. Massen<sup>1,2</sup>

<sup>a</sup>Animal Behaviour and Cognition, Department of Biology, Utrecht University, the Netherlands

<sup>b</sup>Austrian Research Center for Primatology, Ossiach, Austria

<sup>c</sup>Department of Behavioral and Cognitive Biology, Faculty of Life Sciences, University of Vienna, Vienna, Austria

[roy.hammer@live.nl](mailto:roy.hammer@live.nl)

### ABSTRACT

*Cooperation is expected to be one of the most important selective pressures in the evolution of primate intellect and societies, including those of humans. Cooperative behaviour has therefore been well studied regarding its ultimate explanations. However, not much is known about the proximate mechanisms that lead to the occurrence of cooperation, and in particular the process of partner choice based on personality traits remains understudied. It is theorised that this process is based on homophily, which means that dyads are more likely to be formed between partners that show similarities in personality. This study tested whether homophily in personality improved the formation, maintenance, and efficiency of a cooperative dyad by studying semi-free ranging Japanese macaques (*Macaca fuscata*). Personality traits were determined with behavioural observations, while cooperation was tested experimentally with a variation of the loose string paradigm. We found three personality traits that can be attributed to Japanese macaques: anxiety, sociability, and dominance. None of these traits influenced dyad formation. The maintenance of a dyad was, however, improved when partners showed similarities in anxiety. Furthermore, dyads that were more similar with regard to anxiety and dominance were more efficient. These results indicate that homophily does not affect dyad formation among these Japanese macaques, but instead improves the dyad maintenance and efficiency. This study thereby shows that partner choice based on homophily in personality is a proximate mechanism that may have aided in the evolution of cooperation.*



## A REPLICATION STUDY OF THE REPRESENTATIVENESS OF SAMPLING SEXUAL AND BEHAVIORAL ACTIVATION SYSTEMS

Tomáš Hladký<sup>1</sup>, Silvia Boschetti<sup>1,2</sup>, Kamila Machová<sup>2</sup>, Daniel Říha<sup>1</sup>, Jakub Binter<sup>1,2</sup>

<sup>1</sup>Faculty of Humanities, Charles University, Prague, Czech Republic

<sup>2</sup>Faculty of Science, Charles University, Prague, Czech Republic

[hladkytomas@seznam.cz](mailto:hladkytomas@seznam.cz)

### ABSTRACT

*In recent years, critique has been raised concerning research bias due to the sampling process. The acronym WEIRD (western, educated, industrialized, rich, democratic) has been created to characterize the type of population taken as a research object in most of psychological and behavioral studies. Furthermore, participating university students are a specific subgroup of the WEIRD population. This type of sample selection can and does create bias in study results. In research involving the sexual behavior, this problem may be further exacerbated by the prudish or modest attitude putatively present in part of the readership, resulting in a biased self-selection of the sample that may further differ from the general population. We investigated previously researched relationships between sexual and behavioral motivational systems (SIS/SES, BIS/BAS and SOI questionnaires) in a representative and non-representative sample of a Czech population collected de facto simultaneously. The replicability of previously published results was strongly influenced by sample choice: the non-representative sample more strongly mirrors previously conducted research than the representative sample does. This was true for both sexes; but for men a greater influence of the effect of sampling was found. We interpret this difference as a possible consequence of higher social and peer pressure in men regarding sexual performance and sexual attitude towards expression of their masculinity, leading men that experience more insecurity regarding themselves or their sexual aspect in not taking part to the research (unless motivated differently, i.e., financially) and therefore creating a distortion in the results. We argue that it is necessary to increase the attention to the representativeness and the possible presence of systematic bias so as to allow for truly replicable results. Another option is to apply methods that are immune to such treatment.*

## THE EFFECT OF THE COVID-19 PANDEMIC ON DISGUST SENSITIVITY IN PREGNANT WOMEN

Šárka Kaňková<sup>1</sup>, Lea Takács<sup>2</sup>, Jana Hlaváčová<sup>1</sup>, Pavel Calda<sup>3</sup>

<sup>1</sup>Department of Philosophy and History of Science, Faculty of Science, Charles University, Prague, Czech Republic

<sup>2</sup>Department of Psychology, Faculty of Arts, Charles University, Prague, Czech Republic

<sup>3</sup>Fetal Medicine Centre, Department of Obstetrics and Gynaecology, First Faculty of Medicine, Charles University and General University Hospital, Prague, Czech Republic

[sarka.kankova@natur.cuni.cz](mailto:sarka.kankova@natur.cuni.cz)

### ABSTRACT

*The emotion of disgust is considered a part of the behavioral immune system, facilitating avoidance of pathogens. During the COVID-19 pandemic, the risk of exposure to pathogens is higher, and an increase in disgust sensitivity may therefore be expected. In this pre-registered study, we tested the hypothesis that disgust sensitivity will be higher in pregnant women during the pandemic compared to those who were pregnant before the pandemic outburst. This study was designed as a prospective study using data from two cohorts. The first cohort (205 women) was recruited before the pandemic outburst (2017-2019), the second (398 women) after the pandemic outburst (2020-2021). All women completed the Disgust Scale-Revised (DS-R) at the 12th-13th week of pregnancy. ANCOVA was conducted to assess the differences in disgust sensitivity before and after the pandemic outburst. The analyses controlled for maternal age. The women who were pregnant during the COVID-19 pandemic reported higher disgust sensitivity than those who were pregnant before the pandemic outburst ( $p=0.013$ ,  $F=4.96$ , Cohen's  $d=0.20$ ). However, after stratifying for parity, this effect was only significant in primiparous women ( $p=0.004$ ,  $F=8.54$ , Cohen's  $d=0.34$ ). In multiparous women, disgust sensitivity did not differ before and after the pandemic outburst, and their DS-R scores were similar to those found in primiparous women during the pandemic. Our results support the hypothesis that disgust sensitivity in pregnant women increases in response to a higher risk of exposure to pathogens. Interestingly, this effect seems only to occur in primiparous women, probably because disgust sensitivity rises in women after giving birth, so they would be able to teach their offspring with the not yet fully developed immune system how to avoid potential pathogens.*

## **PHYLOGENETIC ROOTS OF MUSIC, DANCE, AND MARCH: A BRIEF SURVEY AND A MODEST CONTRIBUTION**

**Glenn E. King**

Department of History and Anthropology, Monmouth University, West Long Branch, USA

[gking@monmouth.edu](mailto:gking@monmouth.edu)

### **ABSTRACT**

*Rhythmic behavior, especially when coordinated between or among individuals, has been postulated to play an important role in human social behavior, relations, and emotions. Some researchers have suggested that such behavior has phylogenetic roots in the common ancestry of humans and chimpanzees (*Pan troglodytes*) because both species are characterized by complex societies and highly flexible behavior. The behavior itself is complex, so it probably consists of components that may be based on distinct proximal mechanisms. Some of these may be homologous between humans and chimpanzees, some analogous, and some superficially similar but derived under different environmental and/or social circumstances. Cultural mechanisms must also be considered for both species. Researchers have also postulated that these innate behavioral influences underlie human music, dance, and various other forms of social coordination, including group aggression. This paper (1) summarizes and synthesizes hypotheses about the role of rhythm, especially rhythmic coordination, in human social evolution; (2) surveys and summarizes relevant evidence from chimpanzee behavior; and (3) adds a contribution from the author's observation of an unusual event in a group of captive chimpanzees. This last event involved two adult male chimpanzees engaging in a joint performance of rhythmic foot stamping while sitting facing each other.*

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## LIFE HISTORY THEORY ADVANCES UNDERSTANDING OF RETIREMENT SAVINGS AND CRIMINALITY PATTERNS IN THE DANISH POPULATION

Daniel J. Kruger<sup>1</sup>, Morten Holm<sup>2</sup>, Shannon F. Murphy<sup>3</sup>

<sup>1</sup>University of Michigan, Ann Arbor, USA

<sup>2</sup>Copenhagen Business School, Denmark

<sup>3</sup>Palo Alto University, USA

[kruger@umich.edu](mailto:kruger@umich.edu)

### ABSTRACT

*Life History Theory (LHT) is a powerful explanatory framework integrating evolutionary, ecological, and socio-developmental perspectives, illustrating how environments shape allocations in resource trade-offs. Harsh and unpredictable environments lead to accelerated development and reproduction, with riskier patterns of behavior. Stable environments foster future oriented, risk-averse strategies. We apply LHT to real-world issues with considerable theoretical significance and great practical importance. Industrialized countries have a retirement savings crisis in which large portions of workers risk having inadequate funds. This crisis involves time perspective (time horizons, future discounting, etc.), which is a construct central to life history variation. Biosocial Criminology is an emerging area of application for evolutionary theory. Most empirical works focus on the heritability of criminal behavior patterns. Environmental conditions are sometimes included, though often as a “black box” of unexplained variance. LHT incorporates the role of developmental environments, integrating and extending the focus on socio-economic status in the mainstream literature. We analyze data from government-administered registers including a wide range of de-identified information on all individuals born in Denmark between 1975-1980 (N~375,000). We investigate how childhood environments influence behaviors later in life, predicting that greater harshness and unpredictability (as measured by childhood neighborhood and family conditions) is associated with (a) lower retirement savings; and (b) higher likelihood of being convicted for criminal behavior. We find that individuals who grew up in harsher and more unpredictable neighborhood and family conditions were engaged in significantly more criminal activity than peers who grew up in less harsh and more stable childhood environments. Life history factors explain substantial variance even when controlling for traditional socio-economic indicators.*

## ASSESSMENT OF COOPERATION AND COMPETITION IN YOUNG TWINS: AN ETHOGRAM

Timon Lebaron-Kherif<sup>1</sup>, Caroline A. G. Almeida<sup>1</sup>, Sylvia Corte<sup>2</sup>, Tania K. Lucci<sup>1</sup>, Vinicius F. David<sup>1</sup>, Emma Otta<sup>1</sup>

<sup>1</sup>Departamento de Psicologia Experimental, Instituto de Psicologia, Universidade de Sao Paulo, Brasil

<sup>2</sup>Departamento de Biología Animal, Instituto de Biología, Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay

[lktimon@outlook.fr](mailto:lktimon@outlook.fr)

### ABSTRACT

*One major concern parents face in raising multiple birth children concerns cooperation, behaviours enabling mutual goal achievements, and competition, behaviours securing access to resources. This is an important topic for researchers from diverse disciplines interested in the puzzle of cooperation in human evolution. As stated by Nancy Segal twins are an important window into human nature. In our study, twins aged 5 to 8 years old performed a task together, with the mutual objective of drawing their house. Material resources were limited to 1 paper sheet and 5 markers of different colors. Other resources, such as physical space and opportunities to develop drawing skills, were also restricted in this task. To assess behavioural differences in cooperation and competition between monozygotic (MZ) and dizygotic (DZ) twin children, an ethogram of 17 behaviours was constructed around 3 kinds of behaviors: Cooperative including task realization and fostering of collaboration through different ways; Non-cooperative including either non-investment and withdrawal of personal resources or hindering of extrapersonal resources investment; and Neutral, possibly interacting with cooperative or competitive behaviors. We obtained a mean inter-rater agreement with Intra-Class Correlation of 0.93 with this ethogram. Remote data collection enabled us to already collect 12 videos from Brazil and France despite the pandemic. Using Boris software, the videos were analyzed with focal individual observations of each child and yielded interesting preliminary results. Children were observed in highest proportions to be engaged in non-negative talk (Cohen's kappa: 0.801) for 29.8% of the time, in non-negative physical contact (Cohen's kappa: 0.905) for 28.6%, and in drawing (Cohen's kappa: 0.867) for 23.5%, which are considered as cooperative behaviours. On the opposite, leaving the task definitely (Cohen's kappa: 0.857) was observed in 27.2% of the children, and was interpreted as a reaction to frustration.*

## PARENTAL DIMORPHISM AND ATTRACTIVENESS AS INDICATORS OF OFFSPRING QUALITY

Linda H. Lidborg<sup>1</sup>, Gülfem Tanrikulu, Gillian Cooper<sup>2</sup>, Rachael Graham, Nicholas Pound<sup>3</sup>, Elizabeth Meins<sup>4</sup>, Lynda G. Boothroyd<sup>1</sup>

<sup>1</sup>Durham University, UK

<sup>2</sup>University of Liverpool, UK

<sup>3</sup>Brunel University, London, UK

<sup>4</sup>University of York, UK

[linda.h.lidborg@durham.ac.uk](mailto:linda.h.lidborg@durham.ac.uk)

### ABSTRACT

*So-called 'Good Genes' theories, such as the immunocompetence handicap hypothesis, posit that sexually dimorphic (i.e. masculine) traits in males should be associated with greater fitness outcomes. Based on this, it can be expected that more masculine men should produce healthier, more viable offspring. This prediction has rarely been tested, however, and existing evidence for a linear relationship between paternal masculinity and offspring quality is equivocal (e.g. Boothroyd et al., 2017). An alternative or complementary route for more masculine men to improve fitness is by acquiring more fertile, better quality mates, often claimed to be indexed by increased femininity. Here, we test the associations between both paternal and maternal traits and offspring quality, indexed by health and survival, in two studies. In study 1, we test whether parental facial traits (facial dimorphism, attractiveness, perceived health, and physical dominance), height, and strength predict longitudinal offspring health in a British sample (N=96). In study 2, we report the relationships between parental facial traits (dimorphism, attractiveness, and perceived health) and offspring health and survival in a sample of 26 Turkish families. While results are mixed, we find little evidence suggesting that parental traits predict offspring quality. Results are discussed in terms of their implications for sexual selection research.*

## HERITABILITY OF FACIAL EXPRESSIONS: A STUDY OF BRAZILIAN TWINS

**Tania Kiehl Lucci, Renata Aparecida de Oliveira, Jonas Arantes Bueno, Vinicius Frayze David, Ricardo Prist, Emma Otta**

Departamento de Psicologia Experimental, Instituto de Psicologia, Universidade de São Paulo, Brazil

[tanielucci@usp.br](mailto:tanielucci@usp.br)

### ABSTRACT

*The human face is an essential source of signals for interpersonal communication and in the comprehension of affective states and intentions. Our aim was to study the heritability of facial expressions comparing pairs of monozygotic (MZ) and dizygotic (DZ) twins in response to audiovisual stimuli of different valence. Eighty-six same-sex pairs (71 MZ and 15 DZ) with a mean age of 30 years ( $\pm 12$ ) participated in the study. In the Laboratory they watched a film lasting 2 minutes and 40 seconds containing scenes eliciting sadness, disgust and joy. Siblings sat side by side without eye contact and a camera recorded their facial expressions. Videos were analysed by the software FaceReader (8.1.15). Covariance was higher between monozygotic twins compared to dizygotic twins for the expressions of joy and disgust (heritability 65.7% and 41.4% respectively according to ACE model), but not for sadness. Furthermore, there were no significant effects of sex and age, but a tendency was found for women to express disgust more than men (Beta = 0.051 (-0.006 - 0.108),  $p = 0.077$ ). Our findings are partially in line with Ekman's results suggesting that genetic similarity can be an influencing factor in the manifestation of some of the basic expressions of emotions.*

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## **MOTHER, INFANT AND FATHER BEHAVIOUR IN THE DELIVERY ROOM: A BRAZILIAN NATURALISTIC STUDY**

**Tania Kiehl Lucci & Emma Otta**

Departamento de Psicologia Experimental, Instituto de Psicologia, Universidade de São Paulo, Brazil

[tanielucci@usp.br](mailto:tanielucci@usp.br)

### **ABSTRACT**

*Infants communicate from birth, through gaze, voice, facial expression, gesture, and touch. The aim of this study was to enhance knowledge regarding early interaction through the study of behaviours of the mother, father and newborn immediately after birth in a naturalistic situation. For this, we analysed 120 videos, 60 recorded in the immediate postpartum and 60 recorded about twenty minutes after delivery. The recorded behaviours were (a) infant: body movement, crying, open eyes and calming down; (b) mother: affectionate touch, smile, eyes focused on the infant and talking to or about the newborn (c) father: touching the mother, touching infant or touching both. The videos were analysed using instantaneous sampling method (10 seconds). Newborns spent most of the time moving their body in both samples, but showed a lower frequency of crying ( $F=37.053$ ;  $p<0.001$ ) and higher frequency of open eyes 20 minutes after delivery than immediate postpartum ( $F=14.430$ ;  $p<0.001$ ). Maternal behaviours did not differ comparing these subsamples. Fathers touched mothers more frequently in the immediate post birth and increased the frequency of touching both infant and the mother 20 minutes after delivery. These observations show the changing frequencies of behaviour of each of those involved in the postpartum period and helps us to better understand maternal, paternal and infant experience at the time of childbirth.*

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## ACOUSTIC CHARACTERIZATION OF THE DIPHTHONG [‘OJ] IN FEMALE TWINS

Lilian Cristina Luchesi<sup>1,2</sup>, Bruna Campos Paula<sup>1,3</sup>, Patricia Ferreira Monticelli<sup>1</sup>, Emma Otta<sup>2</sup>

<sup>1</sup>Ethology and Bioacoustic Laboratory, Department of Psychology, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, University of São Paulo, Brazil

<sup>2</sup>Psychoethology - Human Ethology Laboratory, Department of Psychology, Instituto de Psicologia, University of São Paulo, Brazil

<sup>3</sup>Department of Mechanical Engineering, Escola Politécnica, University of São Paulo, Brazil

[luchesilc@alumni.usp.br](mailto:luchesilc@alumni.usp.br)

### ABSTRACT

*The genetic and environmental similarities shared by twins are related to the vocal tract anatomy and voice production. Monozygotic twin’s (MZ) voice is often confusable for listeners, making the distinction between them difficult. However, these similarities are not homogenous, and other times MZ twins can be as different as dizygotic twins (DZ). In addition to genetics and environment, life history also seems to influence voice production. This study aimed to describe formant parameters of MZ and DZ twins while speaking the diphthong [‘oj] (hi) and possible effects of age and zygosity. For this, we measured formants (f1 to f4) and calculated the Euclidean distances of 66 female adults (31.7 ±11.6 years old), MZ (n=46), and DZ (n=10) twin pairs of Brazilian Portuguese native speakers. We generated GLMM based on Akaike’s Information Criterion (AIC). A significant zygosity x age interaction effect was found for f1 (Wald  $\chi^2(2) = 6.04, p = 0.05$ ) and f3 (Wald  $\chi^2 = 4.074, p = 0.044$ ). No effect was found for f2 and f4. DZ twins showed a tendency to apart more intensely in f1 with age than MZ. These findings align with the expected, with MZ being more alike than DZ, suggesting a genetic effect on vowel quality. We intend to continue investigating twins’ acoustic parameters, enlarging our sample, including male twins, to understand genetics, environment, and life-history contribution on their voice parameters.*

## **ARE CONSCIENTIOUS PEOPLE REALLY THE MINORITY? COMPLIANCE IN FACE MASK WEARING BEHAVIOR IN A CROSS-CULTURAL STUDY**

**Kathrin Masuch<sup>1,2</sup>, Katharina Prager<sup>2</sup>, Pia M. Böhm<sup>1,2</sup>, Susanne F. Schmehl<sup>2</sup>, Emma Riggs<sup>3</sup>, Mackenzie Zinck<sup>4</sup>, Carlota Batres<sup>3</sup>, Maryanne L. Fisher<sup>4</sup>, Elisabeth Oberzaucher<sup>1,2</sup>**

<sup>1</sup>Faculty of Life Sciences, University of Vienna, Austria

<sup>2</sup>Urban Human, Vienna, Austria

<sup>3</sup>Department of Psychology, Franklin & Marshall College, Lancaster, USA

<sup>4</sup>Department of Psychology, Saint Mary's University, Halifax, Canada

[masuch@urbanhuman.eu](mailto:masuch@urbanhuman.eu)

### **ABSTRACT**

*The SARS-CoV-2 pandemic has disrupted regular behavior worldwide. Despite of vaccines being available, the vaccination process is slow and it will still take a while until herd immunity is achieved. All over the world, a variety of containment measures have been used to keep transmissions in check. Most widely employed actions include social distancing and face masks. Some groups of people are reluctant to wear masks, and others complain about the violations of mask-wearing regulations in public settings. To provide insights into the actual behavior, we carried out a cross-cultural observational study in the USA, Canada and Austria, resulting in a total of 14625 observations. We annotated mask wearing behavior of people in different public settings such as public transport, supermarkets, shopping malls and train stations. Our data show some differences between the countries. Overall, we observed a sex difference, with women showing more compliance. There were no age differences. The behavior settings differ insofar, as in most countries people show more compliance in public transport than in shopping malls. All in all the compliance of the general population is better than their reputation, and higher than in individual perception. This might be due to an overperception error, i.e. the human tendency to perceive undesired events as more salient and more frequent. Our findings emphasize the importance of standardized observations for validations of just-so-observations.*

## THE EVOLUTIONARY TWILIGHT OF THE GODS

**Juan Perote-Peña**

University of Zaragoza, Spain

[jperote@unizar.es](mailto:jperote@unizar.es)

### ABSTRACT

*I propose that deities in polytheistic religions evolved culturally as personifications of brain modules specialized in dealing with universal adaptive challenges or sub-selves (Kenrick & Griskevicius (2013)). Ritualistic connection with specific deities might have served as artificial cues to enhance the activation of mental resources useful to deal optimally with adaptive challenges or reach a better compromise when two or more sub-selves were in conflict. This may account for the similarities observed in comparative religions across different pantheons, since all deities associated to universal evolutionary challenges played a role in improving the quality of individual choices. Following this interpretation, the continuous success of new monotheistic religions since the axial age is associated with cultural religious innovations that suppressed the deities typically in charge of dealing with the competitive and zero-sum challenges along the life cycle (fight for status and sex), that were more costly to the group than they were beneficial to the affected individuals in terms of adaptive fitness. Therefore, monotheistic believers might have enjoyed an evolutionary advantage when they restricted their interactions within the sect with respect to polytheistic individuals without appealing to the institution of monogamy, that was actually the rule (combined with slavery) in the societies where monotheism first emerged. The cultural group advantage of monotheistic religions by “domesticating” competitive men arises from new values that made costly competition a less attractive option not backed by any deity, rather than from a real institutional change towards monogamy, as Henrich (2020) assumes. The lower acceptance of slavery under monotheistic religions might have contributed to the process. I illustrate the theory with a mathematical model of population dynamics to generate predictions.*

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## OBSERVING BEHAVIOURAL EXPRESSIONS OF DEPRESSION USING REMOTE ETHOLOGICAL ANALYSIS

Alasdair R. Pickles<sup>1</sup>, Helena Grant<sup>1</sup>, Amy Burman<sup>1</sup>, Ruth Stafford<sup>1</sup>, Hannah Briggs<sup>1</sup>, Colin A. Hendrie<sup>2</sup>

<sup>1</sup>School of Biomedical Sciences, Faculty of Biological Sciences, University of Leeds, UK

<sup>2</sup>School of Psychology, University of Leeds, UK

[a.r.pickles@leeds.ac.uk](mailto:a.r.pickles@leeds.ac.uk)

### ABSTRACT

*Depression is commonly diagnosed using clinician or self-administered rating scales. The current study aimed to determine whether remote observation of facial postures could be of value in this context. 40 participants were recruited via social media (9 males, 31 females, mean age = 22.1, range 18-44 yrs) and shown over video conferencing software, two pictures of faces (downloaded with thanks from FaceResearch.org), with a third picture of a kitten serving as control. Stimuli were shown three times in randomised order within each set. Participants then completed the Patient Health Questionnaire (PHQ-9). PHQ-9 indications ranged from 'minimally depressed' (0-4) to 'severe' (20-27) with most in the 'mild', 'moderate' and 'moderately severe' categories. Facial postures were analysed using a purpose developed ethogram. Key findings were that, as PHQ-9 scores increased the expression of facial postures, body movements and blinking decreased. These data are consistent with our own findings and the findings of others. These correlational data therefore give good indication that analysis of facial postures could serve as a proxy for more traditional diagnostic tools, which in turn may prove useful in situations where on-line clinical consultations are increasingly becoming the norm.*

## SEXUAL DIMORPHISM IN SPATIAL BEHAVIOUR

**Marie-Helene Polt<sup>1,2</sup>, Maryanne Fisher<sup>3</sup>, Carlota Batres<sup>4</sup>, Susanne Schmehl<sup>2</sup>, Kathrin Masuch<sup>1,2</sup>, Pia Böhm<sup>1,2</sup>, Elisabeth Oberzaucher<sup>1,2</sup>**

<sup>1</sup>Faculty of Life Sciences, University of Vienna, Austria

<sup>2</sup>Urban Human, Vienna, Austria

<sup>3</sup>Department of Psychology, Saint Mary's University, Halifax, Canada

<sup>4</sup>Department of Psychology, Franklin & Marshall College, Lancaster, US

[polt@urbanhuman.eu](mailto:polt@urbanhuman.eu)

### ABSTRACT

*Since the hashtag #manspreading first appeared on tumblr and twitter it sparked heated discussions on twitter repeatedly it is now used as synonym for inappropriate (male) behaviour. The online backlash however was not long in coming and manifested itself under the hashtag #shebagging. Both refer to behavioural patterns serving the protection of one's preferred personal space in public settings such as public transport. Since the desire for maintaining ones personal space is universal, albeit the dimensions of interpersonal distance varying among cultures, we addressed the question whether #manspreading and #shebagging really do occur with the presumed sexual dimorphism. Therefore we conducted behavioural observations gathering data from underground trains and busses in several cities (Halifax, St Andrews and Vienna). Both spreading and bagging are behaviours that affect the seat next to the one a person is sitting on. We annotated therefore the seats occupied by our locals and how their behaviour affected the adjacent seat. Further the transport-line, station, daytime and level of utilisation of the vehicle were annotated. Preliminary results indicate that the sexual dimorphism in behavioural patterns is much smaller than indicated by the gendered wording and further emphasises the desire of preserving as much personal space as possible, even in public environments. This study highlights the importance to validate common knowledge against objective observational data. It also serves as a basis for understanding inhowfar evolutionary behavioural patterns can be broken by social and cultural rules that come into play as a necessary side effect of urbanisation.*

# FAREWELL TO CRONBACH'S ALPHA. IT IS UNRELIABLE AND FAR-TOO-OFTEN USED WHEN THE LOGICAL ASSUMPTIONS OF TAU-EQUIVALENCE AND UNCORRELATED ERRORS ARE VIOLATED. REJECT IT AND (RE)DO THE ANALYSIS WITH ARTIFICIAL INTELLIGENCE METHODS

Hermann Prossinger<sup>1</sup>, Silvia Boschetti<sup>2,3</sup>, Tomáš Hladký<sup>2,3</sup>, Jakub Binter<sup>2,3</sup>

<sup>1</sup>Department of Evolutionary Biology, Faculty of Life Sciences, University of Vienna, Austria

<sup>2</sup>Faculty of Humanities, Charles University, Prague, Czech Republic

<sup>3</sup>Faculty of Science, Charles University, Prague, Czech Republic

[hermann.prossinger@univie.ac.at](mailto:hermann.prossinger@univie.ac.at)

## ABSTRACT

*Cronbach's Alpha is used and reported in more than 97% of all psychology and sociology publications that statistically evaluate questionnaires during their development, and consistency of translation into other language. There are numerous problems related to its use that arise from various violations of its intended applicability. Firstly, because responses are categorical variables, the assumption of normality cannot be satisfied. Secondly, numerous publications (including Gu et al., 2013) have used Monte Carlo simulations to conclude that Cronbach's Alpha should be rejected. Thirdly, we have recently identified a previously unknown problem that is related to the properties of Likert scales (Carifio & Perla, 2007) — more precisely, the statistics of boundaries between response options presented on a Likert scale. The boundaries perceived by the participant force him/her to make a response choice. If the boundary is not halfway between two response option centers, then the spectrum (not: the distribution) of categorical variables will be skewed in a difficult-to-supervise manner. The resolution of this dilemma is to (a) reject the use of Cronbach's Alpha and (b) use an alternative method of statistical analysis involving machine learning techniques. AI (artificial intelligence) algorithms do not encounter the Cronbach's Alpha problem. We present one example of AI use: feature vector extraction, followed by neural networks (autoencoders), and cluster detection. We use an actual data set obtained from a questionnaire of participants' perceptions of color boundaries. The analyses of responses demonstrate not only the shortcomings of linearizing Likert scales but also how to overcome these by using AI methods.*

## SAVING FOR A RAINY DAY: INVESTIGATING HOARDING IN HUMANS

**Tomos E. Roberts, Helen Corby, Bethany J. Graham, Harry J. Simpson, Jess Frankland, Caroline Allen**

Newcastle University, Newcastle, UK

[tomosellisroberts@gmail.com](mailto:tomosellisroberts@gmail.com)

### ABSTRACT

*Hoarding a common behaviour in a range of non-human species, is often related to cues of resource availability (Kellett, 2007), and is considered adaptive for survival. To date, most investigations into human hoarding have focused on those meeting clinical diagnostic criteria (Nordsletten et al, 2013), however, we know that hoarding is prevalent more broadly in the general population (Cooke, 2017). This raises the question of whether human hoarding tendencies are also related to cues of resource availability. If so, we would expect humans to hoard the same items as animals, ones that are instrumental for survival and ones that hold intrinsic value. Here we will present data from 6 studies which aimed to investigate this question, using a variety of scarcity manipulations (written scarcity primes & hunger manipulations) and a natural comparison between participants before and after the onset of the COVID-19 Pandemic (where cues of scarcity were increasingly present). To measure hoarding behaviour we employed a novel 'collect-'em-up' online game consisting of four levels where participants had the opportunity to collect instrumental items (necessary for the completion of levels) or intrinsic items (of no value in the game). Each study could be broadly defined as having a resource scarce and resource plentiful condition, and a meta-analysis was conducted revealing that overall, there was a significant main effect of scarcity on both instrumental and intrinsic item collection. Individuals collected more items when scarcity cues were present, in keeping with the animal evidence, and providing further evidence that hoarding can be considered an adaptation to mitigate environmental uncertainty. This work provides a novel experimental way to study various questions regarding hoarding in humans and future work can continue to underpin the various conditions that exacerbate the tendencies to hoard.*

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## THE TRAINS HAVE EYES: INVESTIGATING THE WATCHING EYES EFFECT IN A NOVEL SITUATION

**Tomos Roberts & Billie Moffat-Knox**

School of Psychology, Newcastle University, United Kingdom

[tomosellisroberts@gmail.com](mailto:tomosellisroberts@gmail.com)

### ABSTRACT

*A growing number of studies across the behavioural sciences have investigated the watching eyes effect, in which people increase their prosocial behaviour when exposed to cues of being watched. Despite the range of findings in this field, the strength of this effect across contexts is unknown, especially considering the limited environments used in field studies. This study aimed to investigate the watching eyes effect in a novel situation regarding prosocial behaviour. Data collection occurred over a 3-week summer period on a heritage railway in Snowdonia national park. It was hypothesized that donations would be significantly higher when eye stimuli were present compared to when control stimuli were present. Overall, 8725 passengers travelled on the train during testing and were exposed either to the eyes condition ( $n = 4371$ ) or a control condition consisting of stars ( $n = 4354$ ). The stimuli were stickers attached to donation envelopes which were available at all seats on the train. These were collected in and counted. There was no significant difference in the donations between the eyes and stars condition. This was in relation to number of donation envelopes returned, total donated and average donation of the two conditions. In addition, we investigated if weather interacted with either condition, finding no significant correlations or interactions. This study joins a small group of papers that have found null results in relation to the watching eyes effect. We interpret this as evidence of the importance of the stimuli exposure duration as in our study passengers were exposed to the stimuli for a long time. These results do not support the evolutionary theories on prosocial behaviour and watching eyes, suggesting that the effect may not work in all situations regarding donations.*

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## EVOLUTIONARY TRICKS IN PERCEPTION OF LEADER'S APPEARANCE

**Victoria V. Rostovtseva<sup>1</sup>, Anna A. Mezentseva<sup>1</sup>, Sonja Windhager<sup>2</sup>, Marina L. Butovskaya<sup>1</sup>**

<sup>1</sup>Institute of Ethnology and Anthropology, Russian Academy of Sciences, Moscow, Russia

<sup>2</sup>Department of Evolutionary Anthropology, University of Vienna, Austria

[victoria.v.rostovtseva@gmail.com](mailto:victoria.v.rostovtseva@gmail.com)

### ABSTRACT

*Here we report the results of an online study on the perception of generalized portraits of young men (Buryats of Southern Siberia, age  $20 \pm 2$  y.), created by means of geometric morphometrics and based on actual propensity for leadership (was previously revealed in our experimental study). Stimulus portraits represented three leadership styles: prosocial leader, leader-cheater, and not-a-leader, and were judged by men (N=70) and women (N=100) (age  $22 \pm 4$  y.), representatives of the same Buryat population. The judgments were made on a number of individual traits (trustworthy, healthy, generous, masculine, leader, dominant, competitive, physically strong, attractive). The results revealed that regardless of sex, respondents rated the appearance of leaders-cheaters as the most trustworthy. They were also perceived to be more masculine and physically strong than prosocial leaders and non-leaders. At the same time, the appearance of prosocial leaders was associated with high ratings on good health. These results indicate that leaders-cheaters have certain features of facial morphology, which make them to be perceived as trustworthy. Although the respondents did not directly assess leaders-cheaters as better leaders, but something in their appearance made people trust them, which is also well illustrated by the results of our previous experiment on cooperation with the same subjects (Rostovtseva et al., 2021). It is proposed that the behaviour of leaders-cheaters (the tendency for active cheating) may be partly a consequence of their specific charm, which is expressed not only in the features of communicative and emotional behaviour (discussed in previous works), but also in the features of static facial morphology, which allows them to effortlessly free-ride on the goodwill of others. This is also supported by the results of other empirical studies indicating that more attractive people are more likely to deceive successfully. The study was supported by Russian Science Foundation (project 18-18-00075).*

## LOOK, DON'T ASK – WHEN ASKING QUESTIONS CAN LEAD YOU ASTRAY

Susanne Schmehl<sup>1</sup>, Kathrin Masuch<sup>1,2</sup>, Theresa Engelbogen<sup>2</sup>, Elisabeth Oberzaucher<sup>1,2</sup>

<sup>1</sup>Urban Human, Vienna, Austria

<sup>2</sup>Faculty of Life Sciences, University of Vienna, Austria

[schmehl@urbanhuman.eu](mailto:schmehl@urbanhuman.eu)

### ABSTRACT

*In the field of human ethology, a variety of methods are employed. Which specific set of methods is selected, depends on a number of factors. The classical ethological approach, i.e. direct observation of behavior is extremely time consuming and requires trained observers to achieve sufficient reliability, and not all behaviors can be observed reliably. Online and in-person surveys, on the other hand, are usually the quicker and less demanding way to accumulate a dataset. However, the insights generated through observational studies and surveys might differ substantially. The present study addresses the question, whether and how survey and observational data lead to different results. At a tram station we asked 120 people (61 women, 59 men, mean age 48 years), which distance they would preferably travel standing, and from which journey duration they would prefer to sit. Answers varied widely: 34,2% of all participants stated that they would immediately sit down, the average travel time from which they would prefer to sit down was 7.2 min. We observed 200 people (102 women, 98 men) entering the tram at the same tram station. 96% of all people sat down immediately after entering the tram regardless of the distance they traveled. None of the passengers remained standing for more than 3 stops, or 3.5 minutes. This study shows that surveys do not correspond to actual behavior. The bias in survey data derives from a number of psychological mechanisms, such as social desirability, self promotion, unawareness, and cognitive dissonance. Therefore, insights gained through surveys have to be validated against actual behavior.*

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## THE SIGNATURES OF SENATORS: NATURALISTIC OBSERVATION OF SEX DIFFERENCES IN HANDEDNESS IN A PROFESSIONALLY ACCOMPLISHED SAMPLE

Nancy L. Segal & Francisca J. Niculae

California State University, Fullerton, USA

[nsegal@fullerton.edu](mailto:nsegal@fullerton.edu)

### ABSTRACT

*A previous study, using an academically advanced sample, did not find the typical excess of male vs female left-handers (Segal, 1984). This result was explained by the self-selected nature of the participants in which males, known to show higher proportions of left-handedness than females (partly linked to adverse birth events), would have been omitted. An opportunity to further explore this issue in a naturalistic setting occurred on January 16, 2020. That day, United States senators signed an oath to act impartially in the president's first impeachment trial. This event was televised, enabling direct comparison of the proportion of right-handers and left-handers in a professionally accomplished. The sex and hand preference of each senator were observed by the first author as each individual was called for signing, and confirmed by an assistant via a YouTube recording of the event. At the time, the United States Senate included 74 male and 26 female senators. A statistically significant sex difference in the proportion of left-handed male and female senators was not found, supporting the view that left-handedness among this select group of males is explained by genetic factors. However, the frequency of left-handedness was higher among male than female senators, possibly reflecting the small sample size. Associations between handedness and political orientation, and handedness and party affiliation were not found, although political orientation correlated significantly with both party affiliation ( $r = .94$ ) and with sex ( $r = -.22$ ). Specifically, Democratic senators and female senators showed a more left-wing political orientation than Republican senators and male senators. Future studies should attempt to organize participants according to source of left-handedness (birth adversity; familial tendency). Attention to hand skill and handedness consistency are also important to examine across academically and professionally oriented male and female populations.*

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## DO DIFFERENCES IN STIMULI CONTRIBUTE TO CONTRADICTORY FINDINGS CONCERNING ORAL CONTRACEPTIVE USERS AND FACIAL MASCULINITY PREFERENCES?

Francesca P. Singleton<sup>1</sup>, Benedict C. Jones<sup>2</sup>, Anthony C. Little<sup>3</sup>, Lisa M. DeBruine<sup>4</sup>, S. Craig Roberts<sup>1</sup>

<sup>1</sup>University of Stirling, UK

<sup>2</sup>University of Strathclyde, UK

<sup>3</sup>University of Bath, UK

<sup>4</sup>University of Glasgow, UK

[f.p.singleton@stir.ac.uk](mailto:f.p.singleton@stir.ac.uk)

### ABSTRACT

*Hormonal contraceptives are thought to suppress biological processes associated with women's preferences for partner qualities, which are believed to be reflective of genetic fitness. That is, women may prioritize cues of partner genetic fitness to a lesser extent than those who are non-users. However, more recent evidence suggests that links between reproductive hormones and preferences are more limited than proposed which has subsequently generated controversy in this area. Here we investigated whether the contradictory findings within this research area might be generated by differences in methodology. We compared facial judgments of participants exposed to stimuli sets used in two previous studies that show different results. In addition, participants were also exposed to a third image set collected using an entirely different method and which does not involve facial transforms along the sexual dimorphism continuum. We predicted we would find the same effects between oral contraceptive (OC) users and non-users as the two preceding studies, when judging the corresponding stimuli for masculinity preferences. A replication of these findings would indicate that the differences in the degree of manipulation may indicate different results, even when being judged by the same rater. Our results show we were not able to replicate findings of the two previous studies, nor did not find a significant difference between OC users and non-users in our third image set. Exploratory analysis was therefore conducted to further understand our results in greater detail. Based on our findings, we cannot conclude the differences in methods used to generate facial stimuli, account for between-study differences in outcomes. They also further call into question previous findings between hormonal contraceptive use and facial preferences. The present study aimed to provide further insight into the area of contraceptives and facial masculinity research.*

## WHAT ARE YOU LOOKING AT?! DIFFERENCES IN VISUAL ATTENTION TO FACES OF POTENTIAL MATES AND RIVALS

Žaneta Slámová<sup>1,2</sup>, Vít Třebický<sup>1,2,3</sup>, Dominika Grygarová<sup>1</sup>, Petr Adámek<sup>1,4</sup>, Jitka Třebická Fialová<sup>1,2</sup>, Karel Kleisner<sup>2</sup>, Jan Havlíček<sup>1,2</sup>

<sup>a</sup>National Institute of Mental Health, Czech Republic

<sup>b</sup>Faculty of Science, Charles University, Prague, Czech Republic

<sup>c</sup>Faculty of Sports and Physical Education, Charles University, Prague, Czech Republic

<sup>d</sup>Third Faculty of Medicine, Charles University, Czech Republic

[zaneta.slamova@natur.cuni.cz](mailto:zaneta.slamova@natur.cuni.cz)

### ABSTRACT

*Consanguineous relationships are widespread around the globe and may be found in historical as well as contemporary populations. For agricultural societies, it has been shown that consanguinity is associated with an increased intergenerational transmission of landholdings through the patriline. The concentration of wealth hereby might contribute to the maintenance of high family socioeconomic status as well as its ability to have and raise children to adulthood. Intermarriage is at the same time associated with fewer descendants due to a pedigree collapse and health issues due to inbreeding depression. In this paper, we develop a theoretical model to estimate the population- and niche-specific thresholds where the benefits of consanguineous marriages compensate the costs. The beneficial aspects of a consanguineous relationship are a function of the effectiveness and availability of hereditary resources; e.g. farmland. The costs are composed of a static biological component, e.g. deriving from inbreeding depression, and from a dynamic and environment-specific component which is basically the fitness detriment resulting from fewer descendants. However, a reduction of descendants and extensive kinship might be a welcome side-effect in high-K environments where cutthroat competition calls rather for offspring quality than quantity. We use historical family reconstitution data from the Krummhörn region in Germany (1720-1874) and the St. Lawrence Valley in Canada (1670-1799) as template for synthetic populations to test the explanatory power and the predictions of our model. Furthermore, we discuss the impact of socio-environmental constraints such as kin availability on the matrimonial market and cultural norms.*

## **'LET ME PRESENT YOU - MY DISGUST!' DECLARATIONS OF DISGUST LEVELS IN PRESENCE OF ATTRACTIVE MODELS**

**Michał Mikołaj Stefańczyk**

Instytut Psychologii, Uniwersytet Wrocławski, Poland

[michal.m.stefanczyk@gmail.com](mailto:michal.m.stefanczyk@gmail.com)

### **ABSTRACT**

*Disgust sensitivity differs among men and women and this phenomenon has been observed across numerous cultures. However, it remains unknown why such sex differences occur. One of the reasons may relate to differences in self-presentation techniques. We tested that hypothesis in an experiment comprising 299 participants (49% women), randomly allocated into three groups. Each group completed the Three Domains of Disgust Scale (TDDS) and rated repulsiveness of physical sensory stimuli under different conditions. The first group presented their responses aloud to an attractive male experimenter, the second group—to an attractive female experimenter, and the control group completed the questionnaire in solitude. We hypothesized that male participants in the female experimenter group would declare decreased levels of disgust sensitivity and female participants in the male experimenter group would declare increased levels of disgust sensitivity. Results showed that sex differences in pathogen and sexual disgust were particularly salient, but attractive experimenters did not evoke any differences in disgust sensitivity across groups with one exception—both men and women self-presented as more sensitive to sexual disgust in the presence of the attractive female experimenter. We discuss our findings in the light of evolutionary and social theories.*

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## **FACIAL SHAPE PROVIDES A VALID CUE TO SOCIOSEXUALITY IN MEN'S BUT NOT IN WOMEN'S FACES**

**Ian D. Stephen & Joseph Antar**

Macquarie University, Sydney, NSW, Australia

[ian.stephen@mq.edu.au](mailto:ian.stephen@mq.edu.au)

### **ABSTRACT**

*Existing work suggests that observers' perceptions of sociosexuality from strangers' faces are positively associated with individuals' self-reported sociosexuality. However it is not clear what cues observers use to form these judgements. Over two studies we examined whether sociosexuality is reflected in faces, which cues contain information about sociosexuality, and whether observers' perceptions of sociosexuality from faces are positively associated with individuals' self-reported sociosexuality. In Study One, Geometric Morphometric Modelling (GMM) analysis of 103 Caucasian participants revealed that self-reported sociosexuality was predicted by facial morphology in male but not female faces. In Study Two, 65 Caucasian participants judged the sociosexuality of opposite sex faces (faces from Study One) at zero acquaintance. Perceived sociosexuality predicted self-reported sociosexuality for men, but not women. Participants were also presented with composites of faces of individuals with more unrestricted sociosexuality paired with composites of faces of individuals with more restricted sociosexuality and asked to indicate which was more unrestricted. Participants selected the more unrestricted sociosexuality male, but not female, facial composites at rates significantly above chance. GMM analyses also found that facial morphology statistically significantly predicted perceived sociosexuality in women's and, to a greater extent, in men's faces. Finally, facial shape mediated the relationship between perceived sociosexuality and self-reported sociosexuality in men's but not women's faces. Our results suggest that facial shape acts as a valid cue to sociosexuality in men's but not women's faces.*

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## AN INVESTIGATION INTO DEVELOPMENTAL AND SITUATIONAL FACTORS IMPACTING FAIR BEHAVIOUR IN A ONE-SHOT DICTATOR GAME

Charlotte Grace Storey, Imogen Bellamy, Caroline Allen

School of Psychology, Newcastle University, UK

[c.storey3@newcastle.ac.uk](mailto:c.storey3@newcastle.ac.uk)

### ABSTRACT

*Humans often sacrifice their own resources to accommodate strangers, despite the reduced likelihood of reciprocal benefits. These non-mutual acts of fairness facilitate the existence of large-scale communities and are regarded highly within society. From an evolutionary perspective, one's past experiences and current state should inform current decisions and behaviours around resource sharing. Indeed, research has begun to investigate the situational and societal factors which influence fairness, using one-shot dictator games (DG) to experimentally remove reciprocity (Camerer, 2003). Here we present a hypothetical lottery dictator game, adapted from Karni et al. (2008), exploring the ways in which individual states and past experiences, as well as the resources at stake, affect the display of fair behaviours. We recruited 294 participants and measured the effects of childhood socio-economic status (SES), developmental experiences of food scarcity, current hunger and prize type (food or non-food), on fair ticket allocation in a DG. A binary logistic regression revealed that developmental experience (childhood SES and past food scarcity) did not predict fair ticket allocation, whereas the current state of hunger did— with hungrier individuals allocating tickets less fairly. A chi-squared test also revealed that prize type was associated with participant fairness; specifically individuals were less fair when allocating tickets to win a food prize compared to a music download prize. The present findings suggest that current circumstances, specifically hunger and the domain of the resource being shared, determined whether the participants behaved fairly within the DG, whereas developmental experiences did not. Whilst the limitations of using a hypothetical DG are acknowledged, the discussion points towards the future exploration of decision making, focussing on calculating the costs and benefits of fairness in relation to ones current circumstances, in order to predict the likelihood of fair behaviour being displayed.*



# SEEING THROUGH THE EYES: A COMPARISON OF JUSTICE KAVANAUGH'S EYE BLINKS BETWEEN HIS SENATE CONFIRMATION HEARING

**Emily L. Stouffer**

University of Arkansas, Fayetteville, AR, USA

[elstouff@uark.edu](mailto:elstouff@uark.edu)

## **ABSTRACT**

*This article reviewed Justice Kavanaugh's eye blinks between two days of Justice Kavanaugh's Senate confirmation hearings for the Supreme Court. The Senate Judiciary Committee questioned Judge Kavanaugh concerning his nomination to the Supreme Court over the course of a four-day hearing, September 4–7th 2018. On September 16th, Christine Blasey Ford came forward with sexual assault allegations against Justice Kavanaugh that took place while they were both in high school. Justice Kavanaugh testified against the Senate Judiciary Committee in an effort to clear his name. I reviewed the hearings and coded Justice Kavanaugh's eye blinks to draw a conclusion that his eye blink rate would be a signal of stress. I proposed that during the confirmation hearing after Justice Kavanaugh has been accused, Justice Kavanaugh displays an increase of micro expressions that play a role in regulating emotions and behaviors. Over the period reviewed here, the variables reviewed were eyeblinks. Research shows that Justice Kavanaugh's eye blinks have intensified and increased after he was accused compared to the hearing before the accusations. Data collected and evaluated was through a coding system called Anvil. Anvil shows patterns that correlate between nonverbal cues and emotional behavior in Justice Kavanaugh. This study interpreted and analyzed the eye blinks and the political message Justice Kavanaugh conveyed.*

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## REACTION TO UNEQUAL REWARD IN A COOPERATION GAME WITH JAPANESE MACAQUES (*MACACA FUSCATA*)

Mathieu S. Stribos<sup>1</sup>, Roy Hammer<sup>1</sup>, Lena S. Pflüger<sup>2,3</sup>, Jorg J.M. Massen<sup>1,2</sup>

<sup>1</sup>Animal Behaviour and Cognition, Department of Biology, Utrecht University, the Netherlands

<sup>2</sup>Austrian Research Center for Primatology, Ossiach, Austria

<sup>3</sup>Department of Behavioral and Cognitive Biology, Faculty of Life Sciences, University of Vienna, Vienna, Austria

[m.s.stribos@gmail.com](mailto:m.s.stribos@gmail.com)

### ABSTRACT

*The evolution of cooperation between non-kin is much debated. “Free-riders” that minimize their own effort while aiming to gain the most benefit may exploit “faithful co-operators” who are always willing to cooperate. Hence it is questioned how cooperation could be an evolutionary stable strategy. It has, therefore, been hypothesised that a sense of fairness, or an aversion for inequity, may have co-evolved with cooperation. This study seeks to gain ground for that theory by exploring the reaction of Japanese macaques (*Macaca fuscata*) to an unequal food reward distribution after cooperation. The macaques cooperated in a string-pulling task that required two individuals to pull simultaneously to open a box with rewards, and subsequently rewarded them with either an equal or an unequal distribution of two rewards (both small, or one small and one big reward respectively). The macaques live in semi-free conditions and the experiment was based on voluntary participation, which also allowed for free partner choice, enhancing the ecological validity of the study. We measured the macaques’ stress-related – and aggressive behaviour, as well as their refusal to re-cooperate after the different distributions of reward. We found that the likelihood of stress-related and aggressive behaviour was higher when co-operators experienced a disadvantageous inequity of rewards, than when reward distribution was equal. These findings cannot be explained by the frustration hypothesis since subjects that had previous experience with a large reward did not have higher likelihoods of aversive reactions when receiving a small but equally sized reward compared to their partner. The study also controlled for the food expectation hypothesis by investigating the influence of having seen the possible rewards before distribution. We therefore conclude that the observed behaviour likely was the expression of first order inequity aversion. This supports the co-evolution theory of cooperation and fairness.*

## POSITIVE BEHAVIORS IN THE HUMAN ADAPTATION TO ISOLATED AND CONFINED ENVIRONMENTS

**Carole Tafforin**

Ethospace, Toulouse, France

[ethospace@orange.fr](mailto:ethospace@orange.fr)

### ABSTRACT

*Ethological studies have now investigated a large panel of real missions, simulations, analogs and experimental settings for the needs of space research. Our fundamental question remains on how the crews optimize their relationships with novel, extraordinary or extreme conditions by regulating physiological and sensori-motor effects, and coping with cognitive and socio-psychological factors. We expose how the already challenging conditions that isolated and confined environments (ICE) pose to the crewmembers could be magnified by inter-individual differences, inter-cultural differences, new referentials, cyclic and periodic changes. We present our relevant results from five publications regarding five ICE: The Mars-500 experiment (Tafforin, 2013), the Concordia Station (Tafforin, 2015), the Mars Desert Research Station (Tafforin & Giner Abati), one short-term orbital flight (2018) and the SIRIUS-19 experiment (Tamponnet & Tafforin, 2021). The findings focus on positive behaviors that undertake a salutogenic adaptation of humans in space and on Earth. The discussions integrate philosophical, anthropological and ethological perspectives.*

1.Tafforin C. (2013). *The MARS-500 crew in daily life activities: An ethological study*. *Acta Astronautica*, 91, 69-76.

2.Tafforin C. (2015). *Behavior, isolation and confinement. Generation and application of extra-terrestrial environment on Earth*. Rever Publishers Book. Volume 6, edited by D. Beysens & J. Van Loon, 26, 265-271.

3.Tafforin C., Giner Abati F. (2016). *Interaction and communication abilities in a multicultural crew simulating living and working habits at the Mars Desert Research Station*. *Antrocom Journal of Anthropology*, 12(2), 97-110.

4.Tafforin C. (2018). *From the individual to the cultural space group. Into Space - A journey of how humans adapt and live in microgravity*. IntechOpen Book edited by T. Russomano & L. Rehnberg, 3, 1-44.

5.Tamponnet C., Tafforin C. (2021). *La sagesse de l'homme dans l'espace: perspectives philosophique et éthologique*. *Journal of Humanities and Social Sciences Studies*, 3(1), 57-61.

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## THE NEURAL CORRELATES OF MALE BODY PERCEPTION WITHIN MATE CHOICE AND COMPETITION

Vít Třebický<sup>1</sup>, Petr Adámek<sup>1</sup>, Dominika Grygarová<sup>1</sup>, Žaneta Slámová<sup>1</sup>, Jitka Třebická Fialová<sup>1</sup>, Jan Havlíček<sup>2</sup>

<sup>1</sup>National Institute of Mental Health, Czech Republic

<sup>2</sup>Charles University, Prague, Czech Republic

[vit.trebicky@nudz.cz](mailto:vit.trebicky@nudz.cz)

### ABSTRACT

*Psychological research showed that people are highly attentive to others, particularly towards morphological traits related to mate choice and competition. Male body morphology seems to be a rich source of salient cues upon which we base various assessments of others. Though both men and women show a remarkably high level of agreement in assessments, the underlying neuro-cognitive processes facilitating the perception and assessment are largely unknown. This study aimed to assess psychophysiological processes involved in judgements of male quality in the context of mate choice and competition. We employed functional magnetic resonance imaging (fMRI) to investigate potential differences in the activation of brain regions involved in formidability and attractiveness assessments stimulated by male body stimuli. Eighty participants (40 women) took part in the neuroimaging session to assess a set of 45 male body images on attractiveness and formidability scale while their brain activity was recorded. Whole-brain analysis showed significant differences in neural activity between both contexts and sexes. Only a part of the visual cortex showed increased activation when assessing attractiveness compared to formidability in women. Regions related to emotional response, attention processing, movement, and preparation to move showed increased activation in men when assessing formidability compared to attractiveness ratings. Moreover, we found increased activations in the middle frontal gyrus, cerebellar vermis and Rolandic operculum - areas related to interoceptive self-perception and embodiment – in men (but not in women) when assessing formidability. Our fMRI study shows context-dependent and sex-specific brain activation accompanying assessments of male quality. When potentially threatening rivals are assessed, body morphology seems to elicit substantial and complex neural responses in men suggesting cognitive states similar to preparation for potential contest and “sizing up” the rivals. Women showed only minor differences in brain areas’ activations in both formidability and attractiveness ratings of the male body.*

## DEVELOPMENT AND INITIAL ASSESSMENT OF THE PARTNER EXPLOITATION INVENTORY

**Lisa L. M. Welling<sup>1</sup>, Anna Wysocki<sup>2</sup>, Alex C. Orille<sup>1</sup>, Virginia E. Mitchell<sup>1</sup>**

<sup>1</sup>Oakland University, Rochester, USA

<sup>2</sup>University of California

[welling@oakland.edu](mailto:welling@oakland.edu)

### ABSTRACT

*Due to disparities in minimum parental investment, men and women express differences in their mating preferences, strategies, and goals, which can lead to conflict within a romantic relationship. One method of addressing such conflict is exploitation, which occurs when deception, manipulation, coercion, or force is used to obtain a resource that the exploited is reluctant to provide. Here we create and provide initial assessment of the validity of the Partner Exploitation Inventory (PEI), which measures the use of tactics to exploit a romantic partner. First, we generated 62 exploitative acts that may be used against a romantic partner using an act nomination procedure. Next, we used an act frequency procedure and grouped those acts into three exploitation components using exploratory factor analysis: Harm-Inducing (e.g., "Threatened to hit my partner if they did not have sex with me"), Ego-Boosting (e.g., "Flattered my partner in order to get them to have sex"), and Emotional Manipulation (e.g., "Cried or whined until my partner spent time with me"). Men reported using exploitation tactics more than women, particularly Harm-inducing and Ego-Boosting tactics, whereas women reported using Emotional Manipulation tactics more than men. PEI scores were positively associated with the Coercive subscale of the Tactics to Obtain Sex Scale (Camilleri et al., 2011), the Sexual Deception Scale (Marelich et al., 2008), and with components of the Short Dark Triad Scale (Jones & Paulhus, 2013). Lastly, high sociosexual orientation explained a significant proportion of the variance in all three PEI sub scales in women, but not men. This study expands our knowledge of men's use of exploitation strategies, is the first study to directly investigate women's use of exploitation strategies, and creates a tool that can be used to examine exploitation strategies in the future.*

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## **SPATIAL DEPENDENCY IN LOCAL RESOURCE DISTRIBUTIONS INFORMS MISPERCEPTION OF RANDOMNESS RESEARCH**

**Andreas Wilke**

Clarkson University, Potsdam, USA

[awilke@clarkson.edu](mailto:awilke@clarkson.edu)

### **ABSTRACT**

*We investigated the spatial patterns of different classes of resources in a familiar local environment. Past psychological research investigating why humans are so prone to misunderstand random data sets has typically focused on empirical resource distributions of equal base rates and regular arrangement to compute alternation probabilities that indicate the degree of spatial aggregation, randomness or dispersion. We incorporate a statistical methodology from the spatial ecology literature to overcome these limitations. Over recent semesters, we observed and coded various resources near our university campus from both developed and natural domains, such as seats taken at a café and in a restaurant, occupied parking spots, geese and cow groupings, and patterns of wilderness, forest, and water in the nearby Adirondack State Park. Our data collection methodology for this study included the use of custom-made resource coding sheets, flying of an aerial drone to obtain video footage of the animal distributions, and extracting patterns of land use from published New York State map data. Our results provide new evidence that natural resource domains indeed show similar, yet more aggregated distribution patterns than those from human-developed resource domains. We discuss our results in light of claims that our ancestral human cognitive evolution selected for specific reasoning mechanisms to detect resources that are distributed in clumps or patches in space and time.*

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## TRADING DESCENDANTS FOR PERSISTENCE? – UNDERSTANDING THE COST-BENEFIT-RATIO OF CONSANGUINITY

Kai P. Willführ<sup>1</sup>, Johannes Johow<sup>2</sup>, Eckart Voland<sup>3</sup>

<sup>1</sup>Carl von Ossietzky Universität Oldenburg, Germany

<sup>2</sup>Independent researcher

<sup>3</sup>Justus Liebig Universität Gießen, Germany

[kai.willfuehr@uol.de](mailto:kai.willfuehr@uol.de)

### ABSTRACT

*Consanguineous relationships are widespread around the globe and may be found in historical as well as contemporary populations. For agricultural societies, it has been shown that consanguinity is associated with an increased intergenerational transmission of landholdings through the patriline. The concentration of wealth hereby might contribute to the maintenance of high family socioeconomic status as well as its ability to have and raise children to adulthood. Intermarriage is at the same time associated with fewer descendants due to a pedigree collapse and health issues due to inbreeding depression. In this paper, we develop a theoretical model to estimate the population- and niche-specific thresholds where the benefits of consanguineous marriages compensate the costs. The beneficial aspects of a consanguineous relationship are a function of the effectiveness and availability of hereditary resources; e.g. farmland. The costs are composed of a static biological component, e.g. deriving from inbreeding depression, and from a dynamic and environment-specific component which is basically the fitness detriment resulting from fewer descendants. However, a reduction of descendants and extensive kinship might be a welcome side-effect in high-K environments where cutthroat competition calls rather for offspring quality than quantity. We use historical family reconstitution data from the Krummhörn region in Germany (1720-1874) and the St. Lawrence Valley in Canada (1670-1799) as template for synthetic populations to test the explanatory power and the predictions of our model. Furthermore, we discuss the impact of socio-environmental constraints such as kin availability on the matrimonial market and cultural norms.*

## DIFFERENCES ON SOCIAL CONSERVATISM BETWEEN SENSORY DISABLED AND SIGHTED AND HEARING PEOPLE

**Lidia L. Wojtycka & Anna Oleszkiewicz**

Institute of Psychology, University of Wrocław, Poland

[wojtyckalidia@gmail.com](mailto:wojtyckalidia@gmail.com)

### ABSTRACT

Recent studies have widely examined our perception of people with disabilities whilst neglecting the way they are perceiving the others. In fact, we found the latter just as interesting. In the present study we have focused on the comparison of blind and deaf people with sighted and hearing ones on liberalism – conservatism dimension. Those groups differ in much more aspects than sensory abilities, therefore, we refer to them as to socio - cultural groups (Braithwaite, Harter, 2000; Cheng, Zhang, Hu, 2016) with their own community, similar experiences, way of communication and with their own specific perception of the world, being the result of different sensory modalities. In order to approach this issue, we asked the participants (N = 370) to fill the questionnaire based on the 12-item scale of social conservatism by JP. Henningham in which author distinguishes three conservatism factors: 1. Conventional morality (attitudes towards: church authority; pre-marital virginity, abortion, euthanasia, prostitution); 2. Intolerance (attitudes towards: multiculturalism, immigrants, gay rights); 3. Punitiveness (attitudes towards: death penalty, stiffer jail terms). \nOne-way Anova results indicate that there is a significant difference between each group on each conservatism factor. Interestingly, based on Tukey HSD test, we found that the group of deaf people scored the highest on factor 1. “Conventional morality” (M = 4.6; SD = 1.13) and 2. “Intolerance” (M = 4.67; SD = 1.23). While factor 3. “Punitiveness” rated the highest in the fourth group consisted of non-sighted people (M = 4.45; SD = 1.42). The results reveal that non-impaired people tend to score less on conservatism factors 1 and 2, while getting higher marks when it comes to Punitiveness. The underpinning factors are discussed regarding cultural background, education, age, and socioeconomic status.

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## **JEALOUSY RATINGS CHANGE IN RELATION TO RIVAL'S FACIAL SEXUAL DIMORPHISM IN WOMEN, BUT NOT MEN**

**Kati Kezić<sup>a</sup>, Irena Pavela Banai<sup>a</sup>, Robert Burriss<sup>b</sup>, Benjamin Banai<sup>c</sup>**

<sup>a</sup>Department of Psychology, University of Zadar, Croatia

<sup>b</sup>Department of Psychology, University of Basel, Switzerland

<sup>c</sup>Banai Analitika, Zadar, Croatia

[kezic.kati@gmail.com](mailto:kezic.kati@gmail.com)

### **ABSTRACT**

*Men, in comparison to women, manifest greater jealousy when it comes to their partner's sexual infidelity. On the other hand, women report higher levels of jealousy in case of a partner's emotional infidelity. Apart from the type of infidelity, jealousy ratings also depend on the rival's characteristics that may indicate their mate value. While women's mate value is mostly determined by fertility cues and physical attractiveness, men's mate value is related to their potentials of gaining and sharing resources. Previous studies have shown that higher sexual dimorphism in the human face (masculine men's face and feminine women's face) can serve as an indicator of mate value. Therefore, potential rivals with these desirable characteristics can evoke greater jealousy. Hence, the aim of the present study was to investigate differences in jealousy regarding participants' sex, infidelity type and rivals' facial sexual dimorphism. The study included 401 (164 male and 237 female) participants of early adult age from various study programmes and professions in Croatia. Photographs of either a male or female prototype face were presented as rivals via Psytoolkit in two versions - masculine and feminine. Jealousy was assessed by using hypothetical scenarios of emotional and sexual infidelity with masculine and feminine rivals. Participants reported their intensity of jealousy on a 7-point scale. Results showed that women generally reported more intense jealousy than men. Furthermore, women were more jealous than men in both situations of infidelity, but this sex difference was greater for the scenarios of emotional infidelity. Finally, while there was no difference in jealousy intensity in relation to rival's facial sexual dimorphism in men, women reported greater jealousy towards a rival with a feminine face.*