

Summer Institute in Human Ethology

Charles University, Prague, July 2011



Programme & Abstracts



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Summer Institute in Human Ethology

Prague, Czech Republic, 5-9 July 2011

Programme Committee:

Tom Alley [Chair] - (Clemson University, SC, USA)

Jan Havlicek - (Charles University, Prague, CZ)

Daniel Kruger - (University of Michigan, MI, USA)

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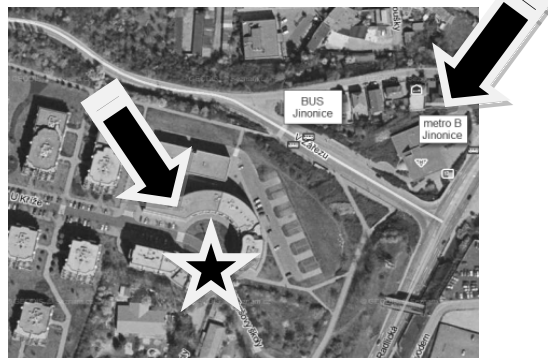
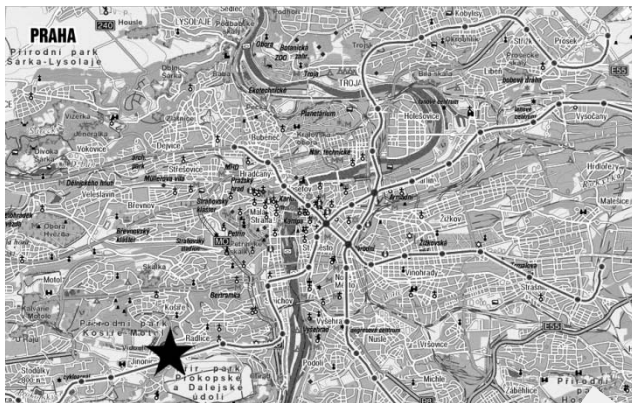


Faculty of Humanities, Charles University, Prague

CONFERENCE VENUE & OTHER USEFUL INFORMATION

The 2011 meeting will take place at the Faculty of Humanities, Charles University in Prague, U Krize 8, 158 00 Praha CZ (see map).

From downtown, take the Metro line B (yellow) to get right to the Faculty complex (station JINONICE). In the entrance hall of the metro take the exit to the right, turn the corner and continue in that direction (right), then cross the street. The red circular building of the faculty is right in front of you.



SOCIAL PROGRAMME**TUESDAY 5th July 2011****7:00 PM Welcome Drink with Buffet**

The opening of the Summer School will be held at the Faculty of Humanities, Charles University (the conference venue of the ISHE Summer Institute, see map on page 3)

FRIDAY 8th July 2011**7:00 PM Banquet: Boat Ride on the Vltava River**

Prague from aboard a boat gives you some astonishing views. You will see the Prague Castle on one side and the Old Town on the other with the Charles Bridge above you.

SATURDAY 9th June 2011**2:00 - 4:00 PM Guided Tour at the Prague Zoo**

Founded in 1931 with the goal to "advance the study of zoology, protect wildlife, and educate the public" in the district of Troja in the north of Prague, the zoo occupies 45 hectares (111 acres) and houses about 4,600 animals that represent 630 species from all around the world. Prague Zoological Garden has contributed significantly to saving the Przewalski horse. For many years it was the biggest breeder of the species in the world. In 2008 Forbes Traveler Magazine listed Prague ZOO among the world's best zoos.

Find out more about the zoo at: <http://www.zoopraha.cz/en>

2:00 - 4:00 PM Guided Tour Old Town

The Old Town is the original place of settlement of Prague. It was separated from the outside by a semi-circular moat and wall, connected to the Vltava River at both of its ends. The moat is now covered up by the following streets (from north to south-west): Revolucni, Na Prikope and Narodni – which remain the official boundary of the Old Town. Notable sights of interest in the Old Town include the Old-New Synagogue, Old Town Square and the Horologe. Across the Vltava River is the Lesser Quarter. These two parts of the city are connected by the Charles Bridge.

PROGRAMME SCHEDULE

TUESDAY 5th July 2011

- 04:00 - 06:45 PM *Registration*
- 04:30 - 06:35 PM *ISHE Officer Meeting I*
- 07:00 PM *Opening Remarks: Jan Havlicek & Wulf Schiefenhövel*
- 07:15 PM *Welcome Drink & Buffet*

WEDNESDAY 6th July 2011

- 8:00 AM *Registration*
- 9:00 AM *Welcome Note: Marek Skovajsa*
- 9:30 AM *Keynote Talk (Introduction: W. Schiefenhövel)*
Childhood experience and the development of reproductive strategies: an evolutionary theory of socialization revisited
Jay Belsky
- 10:50 AM **Coffee Break**
- 11:10 AM *Session: Facial Cues (Chair: K. Grammer)*
 - * **Face and voice attractiveness: an online questionnaire study using static and dynamic stimuli**
Ana-Maria Petrache, Silviu Apostol, Alexandru Ionut Petrisor & Carmen Adriana Strungaru
 - * **Appealing to vanity: does seeing potential appearance-gains motivate fruit and vegetable consumption?**
Ross Whitehead
 - * **Hot or not? Measuring thermal reactions to social interactions**
Amanda Hahn, Ross Whitehead & Daniel Re
- 12:10 PM **Lunch**

01:10 PM **Session: Cognition** (Chair: J. Belsky)

* **The relation of sexual orientation, gender nonconformity and olfactory abilities**

Lenka Novakova, Jaroslava Valentova & Jan Havlicek

* **Evidence for the life history model of the Flynn effect**

Michael Anthony Woodley

* **The role of early life experience in the development of visual biases during childhood: evidence from a cross-cultural comparison**

Michael J. Penkunas

02:10 PM **Coffee Break**

02:30 PM **Workshops I** (4 parallel sessions)

* *David A. Puts*: **Voice manipulation and analysis**

* *Jan Havlicek, Pavlina Lenochova & Lenka Novakova*: **Performing research in human chemosignalling**

* *Aurelio Jose Figueredo*: **How to apply life history theory to the study of human ethology: evolution, genetics, development, measurement, and implications**

* *Marc Mehu & Jitka Lindova*: **Ethological analysis of nonverbal behavior**

THURSDAY 7th July 2011

09:00 AM **Invited Talk** (Chair: A.J. Figueredo)

From stone age to cyber age in one generation. New Guinean examples for human cognitive and behavioral plasticity

Wulf Schiefenhövel

10:20 AM **Coffee Break**

10:40 AM **Session: Embodiment** (Chair: M. Fisher)

- * **Embodiment: new approaches from an ethological point of view**
Karl Grammer & Elisabeth Oberzaucher
- * **Simulating appraisal processes of emotional events**
Pia Reindl, Karl Grammer & Elisabeth Oberzaucher
- * **Embodiment: understanding by doing**
Elisabeth Oberzaucher & Karl Grammer

11:40 AM **Coffee Break**

12:00 PM **Session: Nonverbal Behaviour** (Chair: M. Mehu)

- * **Space invaders: communication technology and social space in American college students**
Linda Lewin, Jillian Clark, Julia A. Finkel, Stephen P. Polanski & Daniel J. Kruger
- * **The duration effect in rating studies – quantity instead of quality?**
Kathrin Masuch, Raimund Schatz, Sebastian Egger, Iris J. Holzleitner, Elisabeth Oberzaucher & Karl Grammer
- * **Individual distance and some morphological parameters among Russian adolescents**
Julia Fedenok, Valentina Burkova & Marina Butovskaya

01:00 PM **Lunch**

02:00 PM **Workshops II** (4 parallel sessions)

06:00 PM **ISHE Officer Meeting II (Restaurant Stoleti)**

FRIDAY 8th July 2011

09:00 AM **Invited Talk** (Chair: D. Puts)

Human mating and the MHC: preferences, proceptivity and the pill
S. Craig Roberts

10:20 AM **Coffee Break**

10:40 AM **Session: Personality** (Chair: J. Richer)

- * **Human sexual dimorphism in navigational strategies**

Daria Deraga

- * **Does personality smell? Personality assessments on the basis of body odor**

Agnieszka Sorokowska & Piotr Sorokowski

11:20 AM **Coffee Break**

12:00 PM **Session: Body Size** (Chair: T. Alley)

- * **Is human body size related to dominance and intra-sexual competition?**

Gert Stulp, Abraham P. Buunk, Thomas V. Pollet & Simon Verhulst

- * **I want you because you are so tall**

Jaroslava Valentova & Jan Havlicek

12:40 PM **Lunch**

02:00 PM **Poster Session I** (featuring odd numbered posters)

1. **Personality and religiosity in a public goods game among Brazilian undergraduates**

Tiago Soares Bortolini, Karoline Vieira Dantas, Nayara Lima Soares, Rogério Damião de Souza Júnior, Thamires Pinto Soares, Wallisen Tadashi Hattori, Claudio Simon Hutz & Maria Emilia Yamamoto

2. **Impulsivity as an adaptive response to environmental instability**

José Henrique Benedetti Piccoli Ferreira, Daueba Zanini Ferreira, Lívia Anicet Zanini, Maíra de Souza Melício Rodrigues, Marcel Henrique Bertonzzin, Verônica Cristina de Souza Arrieta, Vinicius Veríssimo de Oliveira Silva & Vera Silvia Raad Bussab

3. **Social cues as triggers for visual attention**

Urska Stepanek, Karl Grammer & Elisabeth Oberzaucher

4. **How do social markers promote cooperation?**

Rochele Castelo-Branco & Fívia de Araujo Lopes

5. **What happened to our marriage? The break-up decision**

Nivia Lopes, Wallisen Tadashi Hattori, Natália Andrea Craciun, Vítor Araújo, Fívia de Araújo Lopes & Maria Emília Yamamoto

- 6. Do men and women evaluate their attractiveness in the same way?**
Anthonieta Looman Mafra, Felipe Nalon Castro, Wallisen Tadashi Hattori, Maria Emília Yamamoto & Fívia Araujo Lopes
- 7. Sex differences in the use of social information in mate preferences**
Kelly Denise Cobey, Gert Stulp, Sandra Wiersema, Anne Looijmans & Thomas Pollet
- 8. Recognition of facial expression of emotions: exploring performance in psychiatry residents**
Jairo Ignacio Muñoz-Delgado, Iván Arango de Montis, Martin Brüne, Javier Villanueva, Vida Ortega & Ricardo Saracco, Ana Fresán
- 9. Does financial support background changes romantic age preferences in our species?**
Felipe Nalon Castro, Wallisen Tadashi Hattori, Maria Emília Yamamoto & Fívia de Araújo Lopes
- 10. Attractiveness, attraction and feeding behavior in dining pairs**
Olivia M Fox & Thomas R Alley
- 11. Male nonverbal behaviour during dating is affected by women's menstrual cycle**
Radka Kucerova, Katerina Klapilova & Jan Havlicek
- 12. Hard work pays off! But does it really work?**
Vit Trebicky, Jan Havlicek & Jaroslava Valentova
- 13. Parental violence against children**
Christof Peer
- 14. Can you smell garlic? The effect of garlic consumption on body odor**
Jitka Fialova, Pavlina Lenochova & Jan Havlicek
- 15. The study of asymmetry and sexual dimorphism on Hadza teens facial images**
Ekaterina Aleksandrovna Postnikova, Elisaveta Valentinoovna Veselovskaya & Marina Lvovna Butovskaya
- 16. Does the cutest child receive more cooperation?**
Catiane Dantas Souza
- 17. Oh no she didn't: intrasexual competition is partly mediated by characteristics that men find attractive**
Tia Y. Walters
- 18. Eye gaze behavior as a measure for social attention**
Kaja Smole, Karl Grammer & Elisabeth Oberzaucher

19. **Basic emotions and their dynamics (Research Proposal)**
Alexandra Muehlhauser, Karl Grammer & Elisabeth Oberzaucher
20. **Time preference, socioeconomic variables, and risk-taking propensity in a Brazilian sample**
Leonardo Cosentino & Emma Otta
21. **Sex differences in motivation for music and arts careers in brazil: evolutionary implications**
Marco Antonio Corrêa Varella, José Henrique Benedetti Piccoli Ferreira & Vera Silvia Raad Bussab
22. **Would you be competitive when playing with young children?**
Monique Leitão & Maria Emilia Yamamoto
23. **Across cultures and times: a new approach to the research on facial attractiveness**
Iris J. Holzleitner, Elisabeth Oberzaucher & Karl Grammer
24. **Characterization of the non-verbal behavior in a group of women with the dia of social phobia: a pilot study**
Jairo Ignacio Muñoz-Delgado, Bibiana Montoya, Ana María Santillán-Doherty, Rita A1 Rosas & Marina Piñeiro
25. **Accuracy of judgments of personality made on the basis of composite pictures**
Vera Pivonkova, Anna Rubesova, Jitka Lindova, Jaroslav Flegr & Jan Havlicek
26. **Attractiveness of male nonverbal displays**
Lydie Kubicova & Jaroslava Valentova
27. **Influence of homogamy, complementarity and sexual imprinting on long-term partner choice (a study proposal)**
ZuzanaSterbova & Jaroslava Valentova
28. **Research Proposal: pro-social and cooperative behavior in a peer context amor preschoolers**
Jenny Collard
29. **Developing mate choice patterns: who am I? Who do I want? Who do I get?**
Wallisen Tadashi Hattori, Felipe Nalon Castro & Fívia de Araújo Lopes
30. **The influence of contaminated and uncontaminated feeding on perceived intimacy in dyads**
Lauren W. Brubaker, Tom R. Alley & Olivia M. Fox
31. **Partner choice preferences in Indian diaspora in Tanzania (Dar-es-Salaam)**
Daria Dronova & Marina Butovskaya

32. Variable preferences for sexual dimorphism in stature (SDS) might not be universal

Piotr Sorokowski, Agnieszka Sorokowska, Bernhard Fink, Mara Mberira

03:45 PM **Coffee Break**

04:00 – 5:30 PM **Poster Session II (featuring even numbered posters)**

07:00 PM **Banquet & Boat Trip**

SATURDAY 9th June 2011

09:00 AM *Invited Talk (Chair: S. C. Roberts)*

Why is evolution frozen and what does it mean for life sciences – evolutionary and ecological implications of punctuational theories of adaptive evolution

Jaroslav Flegr

10:20 AM **Coffee Break**

10:40 AM *Session: Social Cognition (Chair: D. Kruger)*

*** Theory of mind and metacognition in deaf, blind and normal-sensory children**

Laura Cristina Stobäus, Sylvia Beatriz Joffily, Maria Lucia Seidl-de-Moura

*** The influence of menstrual cycle shifts and contraceptive use on social comparison**

Kelly Denise Cobey, Thomas Pollet, Christine Klipping, Martin Tovee, Abraham P Buunk

*** Postpartum depression and maternal interaction styles effects on mother-infant interaction in brazil**

Renata Pereira DeFelipe, Vera Silvia Raad Bussab

11:40 AM **Coffee Break**

12:00 PM *Session: Varia (Chair: E. Oberzaucher)*

*** Homesickness as an adaptive response**

Maryanne L. Fisher

* **Wife-battering and traditional methods of its control in contemporary Datoga pastoralists of Tanzania**

Marina Butovskaya

* **Sleep and evolution: theory, comparative studies and epidemiology**

Altay Lino de Souza

01:00 PM

Closing Remarks: Jan Havlicek & Wulf Schiefenhövel

01:20 PM

Lunch

02:00 PM

Guided Tour Zoo & Guided Tour Old Town

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PLENARY ABSTRACTS

CHILDHOOD EXPERIENCE AND THE DEVELOPMENT OF REPRODUCTIVE STRATEGIES: AN EVOLUTIONARY THEORY OF SOCIALIZATION REVISITED***Belsky Jay****University of California, Davis, USA, jbelsky@ucdavis.edu*

Two decades ago, after being greatly influenced by Draper and Harpending's (1982) effort to re-interpret findings pertaining to the effects of father absence on adolescent functioning, Belsky, Steinberg and Draper (1991) advanced an evolutionary theory of socialization. Expanding on D&H's restricted focus on father absence, BSD offered a general theory of how stressful and supportive rearing experiences, shaped as they are by the broader intra- and extra-familial ecology, regulate the development of reproductive strategy in the service of fitness goals. Central to the theory and distinguishing it from all other theories that sought to explain early family influences on sexual behavior, mating, pair bonding and parenting later in life, BSD advanced an "uncanny" prediction: Rearing experiences would influence somatic development and, in particular, the timing of puberty. In this talk the theory is revisited and the state of the evidence pertaining to it--and especially the critical puberty prediction--is reviewed. Of special interest are prospective, longitudinal studies which now show that the theory is really about female, not male development. Moreover, recent evidence provides support for a critical amendment to the theory advanced by Belsky (2000) a decade ago and hinted at in passing upon the theory's original formulation. And that is that, again for evolutionary biological reasons, individuals should vary in their susceptibility to rearing (and other environmental) influences, so the theory of rearing regulated pubertal development should apply to some more than others. Also addressed in the talk will be future research needs.

Draper, P. and Harpending, H. (1982). Father absence and reproductive strategy. *Journal of Anthropological Research*, 38, 255 - 272.

Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development*, 62, 647-670.

Belsky, J. (2000). Conditional and Alternative Reproductive Strategies: Individual Differences in Susceptibility to Rearing Experience. In J. Rodgers, D. Rowe, & W. Miller (Eds.), *Genetic Influences on Human Fertility and Sexuality: Theoretical and Empirical Contributions from the Biological and Behavioral Sciences* (pp. 127-146). Boston: Kluwer.

FROM STONE AGE TO CYBER AGE IN ONE GENERATION. NEW GUINEAN EXAMPLES FOR HUMAN COGNITIVE AND BEHAVIOURAL PLASTICITY

Schiefenhövel Wulf

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Most people may think that a transition from neolithic living conditions with corresponding mind-set to today's world with its cognitively demanding urban ecology will require a long period of adjustment. After all, European/Western type civilization and technology has taken more than 8.000 years to develop and one usually believes that the intermediary steps, from Mesopotamian script to mobile phones, from Aristoteles to Assange, have to be recapitulated somehow in an educational process, if not physically by living through the different stages and a small-scale tradigenetic process of passing on knowledge.

Members of traditional peoples in the formerly very isolated Highlands of New Guinea are showing that this idea of humans being shaped in a necessarily slow process of cultural evolution is wrong. Interdisciplinary fieldwork among the Eipo, a group of Papuan culture and language (the Mek culture and language) with a stone-bone-tooth-wood toolkit started in 1974 and continues to the present. As their material social, religious and other characteristics resemble those of humankind after the neolithic „revolution“ these indigenous people can be seen as „modern models of the past“.

Around 1980, they accepted Christianity in a conscious, rather more political than theological decision. They hoped that this would open the road for them from what they perceived as a tiny bubble of isolated stone age existence to the fascinating, materially so much advanced modern world. This decision has worked out well for them. The first Eipo students have now received their magister degrees, many are enrolled in academic studies and others participate in the political process of self-government within the framework of „special autonomy“ given to the Indonesian Provinces of Papua and Papua Barat.

It is truly amazing with how much realism the Eipo, young and old, embrace the modern world and try to utilise its benefits. Of course, there are also some setbacks, but it can be stated that they have made the transition from stone age to computer age with incredible ease. This shows how flexible human cognitive and behavioural structures are and how surprisingly little impact culture may have on the process of acculturation.

HUMAN MATING AND THE MHC: PREFERENCES, PROCEPTIVITY AND THE PILL

Roberts S. Craig

*School of Natural Sciences, University of Stirling, Great Britain,
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In animals, females choose mates which provide a high level of heterozygosity in offspring, especially at genes in the major histocompatibility complex (MHC). Recent research indicates that human females may have similar preferences, but the methods of studies to date are highly variable and the conclusions drawn from them are mixed. In this talk, I will attempt to provide a cohesive overview of the current research. What are the benefits associated with MHC-correlated choice? Do women really prefer men who share relatively few MHC alleles with them? What kinds of physical cues enable them to make such choices? Do these decisions predict relationship satisfaction and what happens if women make the wrong choice? I will go on to examine claims that use of hormonal contraception may disrupt the outcome of human romantic relationships in general, and specifically in relation to MHC.

WHY IS EVOLUTION FROZEN AND WHAT DOES IT MEAN FOR LIFE SCIENCES – EVOLUTIONARY AND ECOLOGICAL IMPLICATIONS OF PUNCTUATIONAL THEORIES OF ADAPTIVE EVOLUTION

Flegr Jaroslav

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The mechanism of natural selection can easily explain the evolution of adaptive traits amongst asexually reproducing organisms where genotype and fitness is regularly and fully inherited from parent to offspring. As shown by Richard Dawkins, amongst organisms that reproduce sexually, the genotype of the individual is formed in each generation through the random mixing of the genes of the two parents and thus the genotype and fitness of individuals is not fully inherited, which complicates adaptive evolution by means of natural selection. The selfish gene theory was proposed in the 1970's to explain the functioning of adaptive evolution amongst sexually reproducing organisms. According to this theory, individuals do not compete for the greatest fitness within a population, but rather the alleles compete in the framework of a single locus for the ability to transfer the greatest number of their copies into the gene pool of the next generation. However, this theory neglects the fact that the effect of the individual alleles on the phenotype, as well as the effect of the individual phenotype traits on the fitness of individuals, depends on the other alleles that are present in the genotype of the individual. The theory of evolutionarily stable strategies indicates that, under such conditions, selection pressures cannot lead to long-term changes in the phenotypes of organisms, but only to a deflection of the frequency of the individual alleles from equilibrium. The greater this deflection, the more the gene pool resists this pressure; after the cessation of selection pressure, the frequency of the alleles spontaneously returns to their original values. The theory of frozen plasticity (Flegr 1998; Flegr 2008) suggests that sexually reproducing species can respond evolutionarily to selection pressures (they are evolutionarily plastic) only when members of that particular species are genetically uniform, i.e. only after a portion of the population of the original species has split off, balanced on the edge of extinction for several generations, and then undergone rapid multiplication. Following a short period of time, estimated on the basis of paleontological data to correspond to 1-2% of the duration of the species, genetic polymorphism accumulates in the gene pool; and thus, in each generation, new mutations occur in the presence of different alleles – the species ceases to behave in an evolutionarily plastic manner and becomes evolutionarily elastic on a microevolutionary time-scale and evolutionarily frozen

on a macroevolutionary time-scale. It then exists in this state until such time as such changes accumulate in the environment that the evolutionarily frozen species becomes extinct.

The frozen plasticity theory has a large number of evolutionary and ecological implications. Most of these predictions could be tested empirically, and should be analyzed in greater depth theoretically. The frozen plasticity theory, which includes the Darwinian model of evolution as a special case - i.e. the evolution of species in a plastic state, not only offers many new predictions to be tested, but also provides explanations for a much broader spectrum of known biological phenomena than classical evolutionary theories.

Flegr, J. 1998. On the "origin" of natural selection by means of speciation. *Rivista di Biologia-Biology Forum*, 91:291-304.

Flegr, J. Frozen evolution. Charles University Press: Prague 2008

WORKSHOP ABSTRACTS

VOICE MANIPULATION AND ANALYSIS

Puts David

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Like many other animals, humans communicate heavily through vocal signals. The human voice constitutes a rich source of information about both the intrinsic qualities of the speaker and the speaker's emotional state. Some of the largest human sex differences are also found in the voice. For example, men and women differ by more than five standard deviations in voice pitch, 3.5 times the sex difference in height. Thus, the voice serves as an excellent focal trait for studying the influence of sexual selection. Fortunately, the acoustic properties of the voice are eminently quantifiable. Voice pitch, the most perceptually salient acoustic feature of the voice, can be measured accurately by a single quantity, fundamental frequency. In this workshop, attendees will first learn the basics of vocal acoustics and some of the ways in which the voice has been studied in human ethological research. Next, attendees will learn how to both measure and manipulate various acoustic properties of the voice, including amplitude, fundamental frequency, and formant frequencies, using the powerful freeware program Praat. This workshop will focus on hands-on practical instruction, and attendees should finish the workshop prepared to conduct their own experimental and correlational voice research.

PERFORMING RESEARCH IN HUMAN CHEMOSIGNALLING

Havlicek Jan¹, Lenochova Pavlina² & Novakova Lenka³

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Recently, human olfaction in the context of social interactions has received intensive attention from the scientific community. Research in this area is based on a wide variety of approaches ranging from psychophysics to endocrinology and brain imaging. The aim of the workshop is introduction to the mainly used methods in (a) body odor sampling and (b) odor sample assessment. In particular, the attendees will actively participate in the following experimental paradigms: 1) Individual body odor recognition using a match to sample approach. 2) Changes in skin conductance following sniffing androstadienone – an axillary compound active in odor communication. 3) Psychophysical tests assessing odor identification (i.e. ability to name odors) and 4) odor memory tests. A specific time slot will be devoted to discuss the practiced methods and the pros and cons of the individual paradigms.

HOW TO APPLY LIFE HISTORY THEORY TO THE STUDY OF HUMAN ETHOLOGY: EVOLUTION, GENETICS, DEVELOPMENT, MEASUREMENT, AND IMPLICATIONS

*Figueredo Aurelio J.*¹

¹ Graduate Program in Ethology and Evolutionary Psychology, Department of Psychology, School of Mind, Brain, and Behavior, College of Science, University of Arizona, USA, ajf@u.arizona.edu

Life History (LH) theory is the mid-level evolutionary theory governing the allocation of bioenergetic and material resources among different components of fitness, such as survival and reproduction. LH theory partitions total effort into Somatic Effort, directed towards the survival of the individual organism over time, and Reproductive Effort, directed towards the production of new individual organisms as vehicles for the genes of its parents. Reproductive Effort is further divided into Mating Effort, directed towards obtaining and retaining sexual partners (in sexually reproducing species), and Parental Effort, directed towards the long-term survival of the individual offspring over time.

LH theory presumes that, because the resources available to any individual organism are limited, tradeoffs between these different resource allocations are inevitable. A systematic pattern of resource allocations is typically referred to as an LH Strategy. The species-typical pattern for humans has been referred to a slow (previously K-selected) LH strategy, generally favoring somatic effort over reproductive effort, and parental effort over mating effort. The opposite pattern is referred to as a fast (previously r-selected) LH strategy.

Although LH theory has found broad application across a wide array of species of animals and plants, the way that these resource allocations play out in different species depends on their specific ecologies and natural histories, in which these allocations may have different implications for both biology and behavior. In applying LH theory to humans, it is therefore important to work out the specific implications for our own species of a slow LH strategy. Furthermore, in humans, as in many other species, there is substantial individual variation in LH strategy, and this fact has important consequences as well. For example, in humans, this pattern also constitutes an entire coordinated suite of personality and behavioral traits, present in individuals who are predominately characterized as altruistic, family-oriented, and risk-adverse. Nevertheless, it is evident that alternative phenotypes are also common.

This workshop will first present an overview of a long-term research program designed to work out the implications of LH theory in the study of human diversity, ranging from considerations of human evolutionary dynamics,

behavioral genetics, behavioral development, psychological measurement, and social implications, to illustrate the general approach, and then invite attendees to interactively explore ways in which these strategies can be applied to their own research, both with the group and with the workshop presenter.

ETHOLOGICAL ANALYSIS OF NONVERBAL BEHAVIOUR*Mehu Marc¹, Lindova Jitka²*¹ *Swiss Center for Affective Sciences, Geneva, Switzerland, Marc.Mehu@unige.ch*² *Faculty of Humanities, Charles University, Prague, jit.hanusova@centrum.cz*

Measurement of nonverbal behaviour utilizes a wide spectrum of methods, ranging from automatic analysis, through categorical coding and judgment studies to computer animation and self-report analysis. Our workshop will focus on methods derived from classical ethology, i.e. methods of systematic behavioural observation; as well as on coding schemes that have been developed in psychological research. More specifically, we will show the process of compiling an ethogram (catalogue of behaviour units) and the procedure of coding the ethogram behaviours on a video recorded interaction. This systematic measurement can yield a detailed picture about gestures, postures and movements of individuals or small groups which can be further analyzed to answer specific questions concerning behavior. The workshop will also introduce methods used in the measurement of facial behaviour, with a demonstration of the Facial Action Coding System (FACS), developed by Paul Ekman and Wallace Friesen. We will show examples of how FACS can be applied to studies of emotional expression and social interaction. Finally, we will present a brief overview of the methods for automatic analysis of nonverbal behaviour and emphasize the contribution these made in the acquisition of measures that can be difficultly obtained with traditional ethological methods. To let the attendees the opportunity to practice behavioural measurements, 2 widely used softwares for behaviour coding – Interact and Anvil – will be available on site for personal try out.

TALK ABSTRACTS

FACE AND VOICE ATTRACTIVENESS: AN ONLINE QUESTIONNAIRE STUDY USING STATIC AND DYNAMIC STIMULI

*Petrache Ana-Maria*¹, *Apostol Silviu*², *Petrisor Alexandru*³, *Strungaru Carmen*⁴

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Humans, as other sexually reproducing species, evolved to choose their mates because their fitness increases proportionally with the mate value. Humans base their choice on physical attractiveness cues along other personality and social factors (Gangestad, 1993). As for the physical attractiveness signals, faces and voices are the first things used to assess the putative mate value of a person (Hughes, 2004).

We are interested in whether the impression a person makes by visual appearance is similar with the one made by vocal means. Based on the assumption that in social situations we perceive simultaneously the face and the voice of a person, we investigated which of the ratings of the two stimuli presented separately predicts more clearly the ratings of the simultaneous presentation. Also we looked if there are any differences in ratings according to the sex of the raters.

From each of the 35 participants selected we obtained an audio recording, a video recording and a frontal face photo. This data was used as stimuli, which were rated by 550 participants using an online questionnaire. They were asked to rate the stimuli on a 5 point scale with respect to their attractiveness.

Based on the feedback obtained after the previous study, we updated the methodology using more ecologically valid stimuli (Grammer, 2003), i.e. videos in which participants were filmed frontally while uttering a standard sentence.

We will use this data to test our previous findings using Pearson's coefficient of correlation:

- human faces and voices attractiveness are not significantly correlated;
- men are mostly paying attention to women faces then to women voices;
- women are mostly paying attention to men voices then to their faces.

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APPEALING TO VANITY: DOES SEEING POTENTIAL APPEARANCE-GAINS MOTIVATE FRUIT AND VEGETABLE CONSUMPTION?

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Less than twenty-five per cent of British and American adults consume fruit and vegetables in line with WHO guidelines. Such inadequate intake is linked to myriad health conditions, such as cardiovascular disorder, diabetes and cancer. There is consequently an urgent requirement for more effective interventions in this area.

This study aims to develop and test a novel appearance-based dietary intervention targeting fruit and vegetable consumption. We attempt to motivate diet-change by appealing to people's vanity, illustrating how their appearance (specifically, skin colour) may benefit from a diet that is rich in fruit and vegetables.

Skin colour differences between high and low fruit and vegetable consumers were determined and this defined a fruit and vegetable colour transform'. Sixty-two students were then allocated to three groups receiving: no intervention; NHS dietary advice; or NHS advice in addition to viewing their own faces manipulated with this colour transform via a computer programme and printed photographs. Diet, lifestyle and health information were collected at baseline and again after 3 and 6 weeks, and skin spectrophotometry (CIE L*a*b*) was conducted at each of these sessions.

Controlling for ethnicity, makeup and fake-tanning products, fruit and vegetable consumption was associated with increased skin yellowness and redness. Individuals participating in the appearance-based intervention significantly increased the colour transform to optimize the appearance of health in their face. Controlling for baseline fruit and vegetable intake, a significant effect of group was seen ($F(2,58) = 4.177$, $p = .020$, $\eta^2 = .13$), such that the group viewing their own face manipulated showed an improved diet relative to the other individuals. Increases in fruit and vegetable consumption over the course of the 6 week study significantly predicted increases in overall skin redness and yellowness. At wavelengths associated with light absorption by carotenoids, changes in facial skin reflectance are significantly correlated with changes in fruit and vegetable consumption.

Increased fruit and vegetable consumption confers measurable effects on skin appearance within 6 weeks. Seeing the potential benefits of fruit and vegetable consumption on skin colour can motivate improvement in diet.

Learning Objective 1: We aim to further clarify the links between diet and appearance, particularly the relationship between fruit and vegetable consumption and skin colour.

Learning Objective 2: A novel appearance-based dietary intervention targeting fruit and vegetable consumption was developed and tested.

HOT OR NOT? MEASURING THERMAL REACTIONS TO SOCIAL INTERACTIONS

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Previous studies utilizing thermal imaging have suggested that face and body temperature increase during periods of heightened sexual arousal. Additionally, facial skin temperature has been shown to be sensitive to other forms of emotional arousal, including fear and stress. The present study was designed to determine whether or not social interactions can elicit a change in facial temperatures. Infrared images were taken during a standardized interaction with a same- and opposite-sex experimenter. The experimenters interacted with heterosexual female participants (N = 17) by taking a series of skin measurements at potentially high intimate (face and chest) and low intimate (arm and palm) locations. Results indicated that, overall, social interactions were associated with a significant increase in facial skin temperature (0.3°C - 0.5°C). Facial skin temperatures were significantly increased from baseline during the face and chest measurements, but not the less personal arm or palm measurements. Additionally, experimenter sex influenced reactivity. Participants tended to become hotter, overall, when interacting with an opposite-sex experimenter. The difference in facial skin temperature between same- and opposite-sex experimenter interactions was particularly salient in the more personal face and chest measurements. These findings suggest that the emotional or physical arousal during social interactions leads to a detectable change in facial skin temperature. Whether this change is discernible to either the observer or individual remains to be determined.

THE RELATION OF SEXUAL ORIENTATION, GENDER NONCONFORMITY AND OLFACTORY ABILITIES

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A vast body of recent research has shown that women tend to outperform men in various olfactory abilities. Further, homosexual individuals often exhibit gender atypical traits, as might well be the case with olfaction. We hypothesised that in men sexual orientation would be positively correlated with olfactory scores and odour awareness whilst in women the correlation was expected to go in the opposite direction. The Sniffin' Sticks test battery was used to assess the olfactory threshold, discrimination and identification of 40 homosexuals (F=20) and 40 heterosexuals (F=20) aged 20-35. Further, self-report Gender Nonconformity Scale (GN) and Odour Awareness Scale (OAS) were administered. A GLM analysis was performed with the three olfactory measures and the OAS score as dependent variables; sex and sexual orientation as categorical factors, and gender nonconformity as a covariate, which yielded a significant sex difference as well as a sex*sexual orientation interaction. Post-hoc tests revealed that this was due to a difference in the olfactory threshold, with heterosexual men being less sensitive than heterosexual women ($p = .017$); the total olfactory score (TDI), with heterosexual men scoring less than both homosexual men ($p = .009$) and heterosexual women ($p = .016$) and, finally, in the OAS score, with heterosexual men scoring less than heterosexual women ($p = .038$). Furthermore, it was found that the self-reported sexual orientation correlated with the identification score and the total TDI score in men, as did the GN score, with homosexual individuals and those tending towards nonconformity outperforming the conformist ones. In women, the GN score was found to correlate with the TDI and the olfactory threshold, with the conformist ones outperforming those tending towards nonconformity. The results suggest that, firstly, there is a difference between male and female homosexuality and, secondly, that olfactory abilities correlate with gender nonconformity in both sexes.

EVIDENCE FOR THE LIFE HISTORY MODEL OF THE FLYNN EFFECT*Woodley Michael**Royal Holloway, University of London, Michael.Woodley03@gmail.com*

The cognitive differentiation-integration effort hypothesis (Woodley, in press a) holds that individual differences in life history speed are associated with a tradeoff between the positive manifold strength (g) and the development of separate abilities. Integrated abilities benefit individuals coping with unstable environments and people (such as the short term mating market) as they confer situational competence, whereas differentiated abilities permit ecological specialization in response to competition. Integration and differentiation effort therefore constitute mating and somatic effort respectively. This hypothesis sheds light on the Flynn effect (Woodley, in press b), which is associated with a weakening of g and differential gains in abilities – the effect may result from differentiation effort investment in response to factors that have historically slowed a population's life history, such as the move towards smaller families, better nutrition, education and disease prevention. National IQ's are conflated with developmental factors associated with the Flynn effect therefore these numbers might represent population differences in massive gains in specific abilities rather than differences in g (Wicherts, Borsboom & Dolan, 2010). Given this, measures of education, infectious disease, family size and nutrition should all load along with national IQ on the K super factor identified by Templer (2008). To test this, data on birth rate (family size proxy), life expectancy, infant mortality, GDP and national IQ, along with education index and log transformed DALY infectious diseases and nutrition were collected for 127 countries. PCA revealed a single K super factor accounting for 82% of the variance. PAF produced a similar result. The Kaiser-Meyer-Olin measure of sampling adequacy was 0.992, indicating that the correlations were adequate for factor analysis, additionally Bartlett's test of sphericity falsified the null hypothesis (i.e. no correlations between the variables). This finding provides substantive support for the life history model of the Flynn effect.

THE ROLE OF EARLY LIFE EXPERIENCE IN THE DEVELOPMENT OF VISUAL BIASES DURING CHILDHOOD: EVIDENCE FROM A CROSS-CULTURAL COMPARISON

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Recent studies indicate that young children preferentially attend to evolutionarily-relevant stimuli, but these results have yet to be replicated in a non-American population. This cross-cultural study investigates the visual biases of south Asian children towards animals which have acted as persistent sources of natural selection throughout hominid evolution. Children from two disparate populations in southern India were presented with visual search tasks containing one target and eight distractor photographs. Children living in a predator-free urban setting and children living in an Indian Tiger Reserve both preferentially attended to evolutionarily-relevant but not culturally-relevant animals. In the first two experiments, children from both locations detected snake and lion photographs more rapidly than nonthreatening lizard and antelope photographs. Neither urban nor rural children displayed a bias for attending towards cows, an animal of great cultural significance, over horses. Reaction times of urban and rural children were statistically indistinguishable suggesting that exposure to dangerous animals is not necessary for these predispositions to develop. The results of this cross-cultural study suggest that the rapid detection of evolutionarily-relevant stimuli is not a product of early life experience but is instead a deeply rooted perceptual phenomenon.

EMBODIMENT: NEW APPROACHES FROM AN ETHOLOGICAL POINT OF VIEW

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The term embodiment has reached considerable attention in research on cognition, communication and even in new approaches to robotics and artificial intelligence. Although it is a tempting concept that the body itself is a means for understanding messages and producing messages, and that cognition and communication are bound to the constraints of the body - attempted proofs for this hypothesis are almost always of a simplified experimental or theoretical nature (Grammer et al., 2011). The question then becomes whether and how embodiment plays a role in day-to-day communication. We will try to exemplify this with a new approach to the analysis of implicit biological message understanding generated by n=100 dancers who danced in front of spectators.

Any type of visible behavior consist primarily of body motion. These motion primitives are then cognitively reconstructed into actions or action styles. In order to avoid cognitive interpretation of behavior we used computer vision methods which capture "motion primitives" and their quality.

In the case of message production, we show that the messages in dancing - as present in terms of mate quality, emotions and signs of personality, that can be conveyed depends on physical body construction. In this view we see the body as a system of pendulums. This means the length, weight and symmetrical construction of the levers is a constraint on the message. Then messages are not a result of mere neural control but an outcome of constraints posed to neural motor commands by the body structure itself. Thus neural control exploits the body construction for message generating - this is the general core of embodiment itself.

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SIMULATING APPRAISAL PROCESSES OF EMOTIONAL EVENTS

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Facial expressions and body postures reflect our emotions as signals for our communication partners. In this study we addressed on the question how we experience and appraise emotions. Movie animations of virtual agents were used to reconstruct facial and bodily expressions of specific emotional events. Values for the Stimulus Evaluation Checks determined by the Geneva Appraisal Questionnaire (GAQ) developed by Scherer (2001) were regressed on a pleasure-arousal-dominance (PAD) *circumplex-model* (Russell, 1980). Empirical data from previous research concerning AU activations (Grammer & Oberzaucher, 2006) and body angles (Grammer et al., 2004) were also mapped on the PAD-space. The computed regression equations were translated into behavior output of avatars (Poser 8, Smith Micro Software) corresponding to the given emotional event. Out of 332 GAQs those events with the five highest, respectively lowest scores for pleasure, arousal and dominance in both sexes were chosen for reconstruction. Two validation studies were conducted: one with animations showing only the avatars' faces and one showing their whole bodies. Participants (N=165) were asked to evaluate 60 animations each in a forced choice task. Results proved the valid accuracy of this approach: Correct events were attributed to the movies above chance. This study shows that it is possible to recreate facial expressions and body postures with virtual agents based on stimuli that happened in real life. All included behavioral aspects seem to be important for the appraisal process of emotions.

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EMBODIMENT: UNDERSTANDING BY DOING

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Embodiment theory suggests a direct link between gesturing and gesticulation and language production. In growth-point theory (McNeill, 1997) the constant interaction between gesturing and language generates thought. In the light of embodiment gestures are thus not only signs but a direct expression of thought and cognition. Consequently, the communicative function of gesturing is not limited to being a signal or message carrier about the outside world, but gestures also convey information about cognitive processes in the sender. Therefore, imitation of gestures by the receiver in conversational settings could function to recreate the sender's thoughts. If so, imitation and the resulting synchronization of gestures would not only be a sign of mutual rapport - but also an attempt of the receiver to read the sender's thoughts.

In a classical ethological approach this question can be addressed by observing categories of gestures in a communicative situation. There is a drawback, however: Such an approach would generate a tautology, as categories result from cognitive processes. Therefore we used n=50 interactions in a video chat situation where the interactants either retold the plot of a short comic movie, or described a building. We then analyzed the videotaped interactions with computer vision methods to detect motion primitives (Oberzaucher & Grammer, 2008).

The results suggest that the person listening to an account indeed generates the same motion primitives as the sender, not only with gesturing alone, but also with the motions of his whole body. This means that embodiment concerns the whole body and is not restricted to gesturing, albeit gestures appear to be the most prominent behavior in this respect. This study has far reaching implications for language theories which focus on gestures as precursors for language. In our view language is embodied in the very sense of the word.

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SPACE INVADERS: COMMUNICATION TECHNOLOGY AND SOCIAL SPACE IN AMERICAN COLLEGE STUDENTS

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We conducted a series of behavioral observations in common student social settings to examine hypotheses regarding patterns of social proximity and how communication technology is used to regulate social space. Observations were conducted in a variety of public settings in or near a large Midwestern American university campus. These sites included one-time events in lecture halls, university busses, university cafeterias, and coffee houses. We generated hypotheses based on the concept of defensible space, evolutionary theory on sex differences in reproductive strategies, and the research literature on cell phone use. We predicted that: 1) individuals entering a social space would avoid sitting in the direct line of sight of another person; 2) people will avoid sitting next to unknown individuals when other seats are available; 3) solitary women would avoid sitting next to unknown individuals more so than solitary men; 4) men would be more likely to serve as a social buffer, sitting between strangers and female companions; 5) unfamiliar individuals arriving and sitting nearby would trigger cell phone use; and 6) cell phone use would be contagious in social dyads. Behavioral patterns were documented using timed event logs and seating diagrams that specified events related to empirical predictions. Observational data supported all of our hypotheses. We conclude that the social behavior of contemporary Midwestern American college students in public settings is consistent with the concept of defensible space and predictions derived from evolutionary theory of sex differences in reproductive strategies. Cell phones are an integral part of the social fabric and may serve multiple social functions in the user's immediate social space, in addition to the nominal purpose of remote communication.

THE DURATION EFFECT IN RATING STUDIES - QUANTITY INSTEAD OF QUALITY?

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During the last decade, rating studies have become one of the most popular methods for collecting subjective data from humans. This trend does not only apply to research in the fields of Human Ethology or Evolutionary Psychology but also to Quality of Experience (QoE) and Human Computer Interaction (HCI). Since these rating studies tend to be highly time-consuming and require a considerable number of subjects, researchers try to maximize output quantity by extending the number of test conditions and thus session duration of these data collections. But does quantity in content and time beyond a certain point negatively affect the quality of these test results?

In general, there are two different ways of measuring participant fatigue: subjectively by questionnaires (e.g. the NASA Task Load Index TLX) and objectively by physiological measurements (S.G. Hart & L.E. Stavenland, 1988). Previous studies (R. Schatz et al., 2010) showed that even if there is no statistically significant effect of fatigue visible by analyzing eye blink rate detected by a face-video, subjects mentioned higher fatigue at the end than on the beginning of the test and variability of ratings increases.

In order to measure participant fatigue, we used an electrocardiogram (ECG) and calculated the individual heart rate variability (HRV) of our subjects. The comparison between these measurements at the beginning, right before and after a short break and at the end of our study, provides a good indication about the maximum duration a rating study can last, without sacrificing data quality.

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INDIVIDUAL DISTANCE AND SOME MORPHOLOGICAL PARAMETERS AMONG RUSSIAN ADOLESCENTS

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The aim of this study was to examine the correlation between individual distance and some morphological parameters such as height, weight, BMI and 2D:4D ratio.

Data on 313 Russian schoolchildren (154 boys and 159 girls) were collected in Moscow. The study groups were composed of children from 10 to 17 ages. All participants were measured height (using anthropometer), weight (using electronic weigher), 2nd and 4th digits finger lengths directly from the hand (using steel Vernier caliper measuring to 0.01 mm (Manning et al. 1998)). Also, we measured spatial interactions between adolescents using measuring tape.

Our results showed significant gender differences in all parameters. Individual distance in the pairs of boys is significantly larger than in pairs of girls. Right and left hand 2D:4D ratio was significantly lower in boys compared to girls in the total sample. Significant sexual dimorphism was found in body height, weight, body mass index.

Besides, the significant negative correlations between the distance of communication with same sex and height, distance of communication with same sex and right 2D:4D ratio were found for girls. On the contrary, distance of communication among boys correlated positively with height and weight. In case of communication with the opposite sex in boys the correlation with any of morphological parameters was not found. For the girls distance communication with partners of the opposite sex was positively correlated with right 2D:4D ratio, that is, the girls with more feminine index communicated at closer distance with the opposite sex.

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HUMAN SEXUAL DIMORPHISM IN NAVIGATIONAL STRATEGIES

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This paper concerns the phenomena of human navigation from one place to another with emphasis on sexual dimorphism. Included is a brief discussion of some of the newer proposals in evolutionary physiology on this subject to give context to my personal field research findings on human behavior related to two distinct strategies observed between the female and male sex in spatial perception. Results of these studies have shown that generally males depend more on orientation and females on landmarks as navigational strategies. The discussion is focused on these observed differences and how researchers have related them neurologically with the hippocampus and evolution. My method of research work on human sexual dimorphism related to navigation has been direct observation and interviews in natural urban and rural situations in Mexico. The results show how females strongly depend on visual landmarks for cognitively mapping a path to a desired destination even in urban cities where there are street names, arrows, and cardinal directions indicated on signs. Contrary to females, males have exceptional orientation abilities, and can navigate easily in a wide circumference in urban or rural situations. In an urban context they frequently use cardinal directions and street names when describing a specific path to a certain destination. The main conclusion is that there definitely exists a human sexual dimorphism in spatial perception related to navigation observed in natural situations; I make emphasis on this due to the fact that many studies are laboratory controlled. The people involved in the study range age wise from teenagers to seniors, and socially from urban city dwellers to inhabitants of rural communities.

DOES PERSONALITY SMELL? PERSONALITY ASSESSMENTS ON THE BASIS OF BODY ODOR

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People are able to assess some personality traits of others on the basis of videotaped behavior (e.g., Borkenau & Liebler, 1992; Carney, Colvin, & Hall, 2007), short interaction (e.g., Watson, 1989) or a photograph (review: Zebrowitz, 1997). In our study we investigated the relationship between body odor and personality. 60 samples of body odors (T-shirts worn by odor donors for 3 consecutive nights) were assessed by 20 raters each. The judges rated sex, age and the Big Five personality dimensions and dominance of the targets. Correlations between averaged ratings on the basis of target's scent and the target's criterion scores on the same construct were calculated. The main finding of the presented study is that for a few personality traits, the accuracy of judgments on the basis of their body odor was above chance level. The correlations were the highest for extraversion (.36), neuroticism (.34) and dominance (.29). Further analyses showed that accuracy of assessments of neuroticism differed between sexes (women were the most accurate in judging men) and the ratings of dominance were particularly accurate for assessments of the opposite sex. Our study demonstrates that, among other elements of human physical appearance, body odor might influence the perception of person's personality. We might assume that biological parameters influencing body odors have effects on personality as well, making odors a cue to personality traits.

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IS HUMAN BODY SIZE RELATED TO DOMINANCE AND INTRA-SEXUAL COMPETITION?

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Within the animal kingdom body size is an important determinant of dominance through intra-sexual competition. The role of human body size in dominance and intra-sexual competition is less clear. Indirect evidence, such as the positive correlation between height and social status (e.g. education and income), supports the idea that body size is related to dominance in humans, but behavioral data are lacking. Here we investigated whether body size was a determinant of dominant behavior in a dyadic task. Participants (90 women and 54 men) first individually performed the 'arctic survival task', in which they ranked 12 items in order of importance for survival. They then met in same-sex pairs, where they were instructed to negotiate within 5 minutes the best possible ranking, given their original individual score. All dyadic interactions were video recorded. We investigated whether body size (measured height, self-reported weight) and grip strength (a measure of physical strength) were associated with measures of dominant conversational behavior (e.g. time spent talking, number of interruptions) and outcomes of the negotiation task (e.g. who was most influential in the dyad and diverged least from their original individual score). Results of the experiment will be discussed in context to the role of human body size in dominance and intra-sexual competition.

'I WANT YOU BECAUSE YOU ARE SO TALL'**Valentova Jaroslava^{1,2}, Havlicek Jan³**

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Human body height is a sex dimorphic trait, and number of research showed that it plays a crucial role in mate preferences and partner choice. In general, women prefer taller men in comparison to smaller ones and taller men are perceived more masculine, and dominant. Previous research on height preferences and its connection to perceived dominance is aimed only at heterosexual population. The main aim of this study was to investigate height preferences in homosexual men. In an explorative pilot study, we interviewed 18 homosexual men about partner preferences and qualitative analysis of the data showed that homosexuals who prefer submissive role in their partnership and sexual interactions preferred rather taller men, and vice versa. Thus, for a quantitative study, we hypothesized that preferences of relative height in potential and actual partners of homosexuals would be connected to their preferred submissive/dominant role in partnership and sexuality. We created picture stimuli similar to those used in previous studies for heterosexual preferences, and based on the average male height in Czech Republic we gradually increased and decreased relative height differences between the respondent and his ideal or actual partner. Online survey was completed by 62 non-heterosexual men, 35 of them were exclusively homosexual. We found a significant negative correlation between relative height preferences and preferences for dominant or submissive role in both, partnership and sexuality ($p < .01$). There was also a trend in homosexual men who preferred dominant role in sexual activities to be in an actual relationship with a lower man ($P = .06$). Our results thus support the assumption of perceived relationship between height and dominance in men, with men who prefer rather dominant position in their partnerships and sexuality look for relatively lower mates, and vice versa.

THEORY OF MIND AND METACOGNITION IN DEAF, BLIND AND NORMAL-SENSORY CHILDREN

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First evidences of the human ability to infer mental processes in others, Theory of Mind (ToM) are observed around eighteen-month-old, and signs of meta-representation ability, reflexive ToM, at about four years. This work investigated aspects of the proximal ontogenesis of ToM and Meta-cognition, in three groups of ten six-year old children, in special conditions of development: blind (C), deaf (S) and children without sensory deficits (N). A multi sensory model (a scenario with dolls) represent the protagonists was presented and a story was told to the children. Only two of deaf children received LIBRAS (Brazilian Sign Language) and the others deaf received Alternative Communication translation by an interpreter. Then, questions to test cognitive and meta-cognitive abilities were posed. Children of the N group had 90% correct answers to the ToM questions. The blind ones had 81% and the deaf, 84%. The scores related to meta-cognition were lower: N=61%, C=57% and S=34%. The differences between the groups N and S were significant in the meta-cognitive questions (ANOVA analyses. Nor absence of oral language, nor vision impairment affect significantly ToM development. The difficulties of deaf children in understanding meta-representational questions could be explained by the fact that most of the deaf children in the group had later contact with structured communication (because they have hearing parents and / or they were enrolled late in a specialized institution). We are now researching the potential effect of another special context of development represented by families with depressed mothers, in a longitudinal study, since pregnancy to the children's fourth year, in a Brazilian low-income sample. The results of both studies are confirming aspects of complexity, natural propensities and alternative compensatory developmental ways and also the importance of early mother-infant social interactions. *Thematic Project Fapesp (n° 06/59192) "Postpartum Depression as a Risk Factor For The child development: an Interdisciplinary Study of Factors Involved In its Genesis and Its Consequences".

THE INFLUENCE OF MENSTRUAL CYCLE SHIFTS AND CONTRACEPTIVE USE ON SOCIAL COMPARISON

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It has been argued that social comparison is “phylogenetically very old, biologically powerful, and recognizable in many species” (Gilbert, Price & Allan, 1995). While individuals are often reluctant to admit to engaging in social comparisons the need to assess oneself and one’s abilities compared to surrounding competitors has a clear adaptive function both for survivorship and reproduction. We examined whether women’s social comparison orientation, i.e., their tendency to explicitly compare themselves with others, changes systematically across the menstrual cycle, and what role hormonal contraceptive use have on this behavior. Using a within-subjects design, in which participants were tracked when fertile, non-fertile, and using hormonal contraceptives, we showed that women increase levels of social comparison in proximity to ovulation. Levels of social comparison reported when using hormonal contraceptives fell between the scores reported during fertile and non-fertile phases but were not significantly different from either. We also showed that women’s ratings of attractive female bodies correlate with ratings of self-perceived attractiveness when fertile, but not when non-fertile, or when using contraceptives. This suggests that the higher level of social comparison orientation during the fertile phase may allow women to self-enhance their attractiveness in order to obtain partners who possess traits which may be most likely to maximize offspring fitness.

POSTPARTUM DEPRESSION AND MATERNAL INTERACTION STYLES EFFECTS ON MOTHER-INFANT INTERACTION IN BRAZIL

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Postpartum depression (PPD) can affect infant development *via* mother-infant interaction. Maternal interaction styles (withdrawn, intrusive, and good interaction) can be considered as additional factors able to buffer or intensify PPD effects. We investigated differential distribution of maternal interaction styles according to PPD diagnosis; and interaction effect between PPD and maternal interaction styles upon interactive behaviors (gaze, smile, touch, vocalization, and cry). Seventy-five mothers divided into two groups (PPD = 25; Non-PPD = 50) by EPDS's Brazilian version (Edinburgh Postnatal Depression Scale) were videotaped with their 4-5 month-old babies (3 min) in order to measure: 1) interactive behaviors (gaze, smile, touch, vocalization, and cry), coded second-by-second; and 2) maternal interaction styles (intrusive, withdrawn, and good interaction), coded in 10s time sampling units. The raters were blind to PPD condition. Results: (1) Contrary to literature, there was a prevalence of good interaction style on both groups (PPD = 64%; non-PPD = 54%); (2) According to MANOVA, there were no significant global effects of PPD and maternal interaction styles upon interactive behaviors (Wilks' Lambda = 0.843, $F(8,57) = 1.329$, $p > 0.05$, $PO = 0.552$). Our work suggests that even low-income depressed mothers can interact as good interaction partners, and even those who interact as withdrawn and intrusive partners can compensate their non-optimal interaction styles by expressing similar frequencies of behaviors towards their children. These results point out to the existence of resilience mechanisms which would arise to help mothers channel their energy to their children. This phenomenon would help attenuate potentially harmful effects associated with PPD and extreme maternal interaction styles (intrusive and withdrawn) to mother-infant interaction. Despite the existence of these resilience mechanisms to our sample, the study of PPD and extreme maternal interaction styles deserves careful attention because in certain scenarios they can represent important risk factors to mother-infant interaction.

HOMESICKNESS AS AN ADAPTIVE RESPONSE

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Alliances, whether they be based on kinship or sociality, are important to human survivability. Similarly, familiarity with one's surroundings and bonding to a particular environment, group of people, cuisine, culture and so on, may have evolutionary benefits. For example, one would know how to access necessary resources, perhaps be able to find a mate, not be concerned about adverse effects to sampling new foods, and be considered as part of a cultural in-group. To be asked to leave this familiarity can presumably be a negative experience for most people. For example, historically, one of the worst punishments that could be inflicted by one's social group and family was ostracism. Likewise, ostracism has been documented to be a highly effective tactic in girls' intrasexual competition.

One possible consequence of being asked to leave one's familiar setting is homesickness. Despite the fact that homesickness is known colloquially, it has rarely been the topic of academic study, and seemingly has been overlooked by ethologists. This oversight is indeed surprising given that homesickness is probably experienced universally, and has such obviously deep evolutionary roots. Therefore, the goal of this presentation will be to propose an evolutionary perspective on homesickness, paying particular attention to its adaptive benefits. I will also discuss some of the ways it may be related to culture, and to establish lines for further research.

WIFE-BATTERING AND TRADITIONAL METHODS OF ITS CONTROL IN CONTEMPORARY DATOGA PASTORALISTS OF TANZANIA

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This study examines wife-battering among the Datoga pastoralists of Tanzania. The interviews with 142 women provide the information on types and regularity of wife-beating in Datoga. Its occurrence was correlated with a number of social, demographic and economic factors. Particularly, its severity and frequency were positively related to the number of co-wives, as well as to the history of woman's physical aggression. The history of physical aggression was in positive correlation with her self-ratings on physical and verbal aggression and hostility scales on Buss-Perry Aggression Questionnaire. The frequency and severity of wife-battering were positively related to occurrences of fine payments to wife and her family. It is concluded that the Datoga possess cultural mechanisms of control over partner violence in the form of fine payments, and such mechanisms remained widespread nowadays. At the same time, today some women have started to search for protection against husband's aggression at the Police Stations. Our data are discussed in light of information on wife-battering in other traditional societies. This study was supported by RFHR (grants 08-01-00015a and 1101-00287a), and FRBR (grant 10-06-00010-a with the permission from COSTECH of the Republic of Tanzania).

SLEEP AND EVOLUTION: THEORY, COMPARATIVE STUDIES AND EPIDEMIOLOGY

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The aim of this presentation is to present a brief review about the Evolution of Sleep, in functional and physiologic perspectives. Why do animals (including humans) sleep? Functional theories of sleep offer answers to this question. Restorative theories are based on the idea that animals sleep so that physiological and biochemical repairs can take place. Thus, without sleep, an animal's health deteriorates. Adaptive theories are based around the idea that sleep is a useful behavior which keeps an organism out of harms way, both from predators and from inefficient energy expenditure. Hence, sleep is an innate period of immobilization which confers evolutionary fitness on a species, with no special restorative properties. Horne (1988) has developed a theory that combines element from both restorative and adaptive theories. According to this theory, sleep is composed of two parts: core sleep and optional sleep. Core sleep is the indispensable portion of sleep that an organism requires for essential brain processes, particularly in the cerebral cortex. These processes are presumed to be for the recovery and restitution of neural and related tissue. Optional is not essential; indeed, it is dispensable. In Universidade Federal de São Paulo a project called EPISONO aims to establish the parameters of sleep disorders based in an epidemiologic sample of Sao Paulo city of 1101 people who was invited to participate in a Polissonographic study. We want to present some results related to sleep patterns in these people in order to corroborate or dismiss some aspects of restorative and adaptive theories in a comparative way. However, the possibility to present this data and this subject in a summer school can be useful to discuss the some aspects of Evolution theory related to Sleep which is a complex phenomena which possibly serves many functions which may vary across different species.

POSTER ABSTRACTS

1. PERSONALITY AND RELIGIOSITY IN A PUBLIC GOODS GAME AMONG BRAZILIANS UNDERGRADUATES

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Many studies concerning cooperation and religiosity focus only on individual religious behaviours, not evaluating other aspects that could influence cooperation as much as religiosity. One possible aspect that could influence cooperation, and even religiosity, is personality since some personality traits are more prone to cooperative attitudes. However, it is not clear yet the role of personality on religiosity. In this research we analyze data to evaluate the influence of personality on religiosity and cooperative behaviour in an adapted version of public goods game. A total of 181 undergraduate students answered a religiosity questionnaire and the Brazilian version of the NEOPI-R, which is based on the Big Five hypothesis. The game consisted in four ballot-boxes (Catholics, Evangelists, Other religions and Atheists), placed behind a folding screen. Each subject received three candy bars that could be donated to any ballot-box. For each three bars donated we added another one to the whole amount after three rounds. After three rounds, the total of candy bars in each ballot-box was divided among those who self-reported pertaining to each religion orientation correspondent to the ballot-box. We found that although there was no difference between the individual religion and the amount donated, those who scored more on the religiosity questionnaire donated more candy bars than those that scored less. Personality traits and the religiosity correlated positively with the agreeableness factor and negatively with the neuroticism and openness factors. In relation with the total donated, there were positive correlations with agreeableness and consciousness. Also, the higher individuals

scored on religiosity, the higher they scored on agreeableness. We suggest that the increased donations from individuals high on religiosity could be more related with the agreeableness factor than religiosity itself. This demonstrates that complex behaviours such as cooperation and religiosity should be investigated considering as many variables as possible.

2. IMPULSIVITY AS AN ADAPTIVE RESPONSE TO ENVIRONMENTAL INSTABILITY

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Do people react in a more impulsive way in situations of severe environmental instability, like after an earthquake or a tsunami? Would individual reaction be influenced by their current and childhood environment quality? A Life History perspective predicts that environmental unpredictability lead the organisms to adjust their life-strategies. Under high level of environmental harshness and unpredictability, is predictable that individuals will choose a more immediate (future discounter) strategy. Natural selection favors this kind of strategy, because it reduces the risk of mortality prior to reproduction, increasing the chance of successfully contributing offspring to the next generation. Participants were 150 undergraduates. The study had 2 between-subjects conditions: Severe Environmental Instability and Control, both stimulus primed via images. The participants were seated privately in separate rooms at computers and presented to three successive tasks: (a) an initial set of twenty monetary choices, from which we computed initial temporal discounting parameters; (b) a series of 8 images, presented individually, to be rated on their stability level; and (c) a second set of twenty monetary choices, which gave us a second, post-rating-task, temporal discount parameter. After the second set of monetary choices, participants answered to a childhood and current socioeconomic status questionnaire. Consistent with the prediction, future discounting rates had increase after instability stimulus, for men and women, leading them to a more impulsive strategy. While in control conditions, non-significant variation had occurred. Childhood and current environmental socioeconomic conditions did not show any influence in their responses. As predicted by life history perspective, in conditions of high instability a faster strategy is a more adaptive response. Other experiments have been initiated for our group investigating these mechanisms related to life history trade-offs, their responses to different harshness levels and the influence of individual characteristics.

3. SOCIAL CUES AS TRIGGERS FOR VISUAL ATTENTION

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Although quite some work has been done on social attention, much of our knowledge stems from laboratory experiments that were conducted under controlled conditions. In this study, we thus want to explore social attention and cognition using real life data.

Our work will focus on low social cues in order to answer the question of what attracts our attention: body posture, sex, speed, motion? Motion is known to be an important cue when it comes to interpreting social events - humans tend to put every motion they see into a context. Literature suggests, for example, that "angry walkers" tend to attract the most attention. This is hypothesized to be the case for an appraisal of dangerous events is crucial in terms of (evolutionary) survival.

We will present a pilot study on social cues that is currently being carried out at the University of Vienna. A "virtual operator" shows surveillance videos from an urban environment - underground railway stations - on a 2 by 2 setup of screens. Each screen shows a shot from a different surveillance camera. Every two minutes (repeating four times) a new shot is randomly brought up to each of the screens (4 monitors x 4 rounds = 16 movies in total). Whenever subjects see something on one of the screens that attracts their attention, they have to press a button indicating the respective monitor.

If our prediction regarding the assessment of social stimuli holds true, the marking of attention-worthy events should not be distributed randomly over the shown movies. Instead, participants should show an agreement on which behavioral incidents are worth noting.

These behavioral events will then be connected to a behavior catalogue that has been developed within the FP7 project VANAHEIM (www.vanaheim-project.eu). VANAHEIM aims to investigate human behavior in public settings on 3 levels: individual, group and crowd level. One of the goals of this project, is to develop an event detection application that can be employed for security and environmental reporting to increase situational awareness and prevent critical situations.

4. HOW DO SOCIAL MARKERS PROMOTE COOPERATION?

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Cooperation is essential for living in societies. The social exchanges played a fundamental role in human survival and reproduction in ancient societies and, even today, the association with reliable partners ensures individual advantages. However, group living arises the challenge of identifying cooperators and excluding free-riders. Thus, group pertinence cues and the feeling of belonging to a specific group are considered promoting mechanisms of cooperative behavior towards group members. This research aims to investigate the role of group markers on the promotion of cooperation, specifically group markers regarding individual attributes – ethnicity and place of birth – and those that represent groups of choice – religion and affiliation to soccer teams. The experiment consists of a set of online donation games, whose aim is to gather the maximum of tokens at the end. Each subject plays only one of the games and faces a scenario with virtual players whose profiles exhibit different conditions of evaluated group markers. In the religion game, for example, the virtual players belong to different religious options: Catholics, Evangelicals and non-religious. Subjects may choose to donate tokens to just one virtual player in each round. The games were previously programmed so that some virtual players were more generous than others. This design allows us to assess whether the subjects respond to the effect of generosity or to the group marker expressed on the virtual player's profile, or even a combination of both. We have observed so far, concerning the game of religion, that subjects display a strong in-group behavior. Moreover, it was also found a significant effect of reciprocity: the subjects gave more tokens to generous virtual players. On an evolutionary perspective, these results offer an important contribution to the field of cooperation and human alliances identification.

5. WHAT HAPPENED TO OUR MARRIAGE? THE BREAK-UP DECISION

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The process of reproductive pair formation and separation involves a balance between costs and benefits for each partner who takes a decision like this. In humans, the marital dissolution can be influenced by many factors. In Brazil, the processes can be consensual, as the couple, by mutual agreement, decide not to remain married, or it can be litigious, when only one spouse submits the separation application. This study's aim was to compare sociodemographic patterns (age of man and woman, marriage duration and number of children) in litigious and consensual separation processes. It is expected to find different patterns for each type of process. We analyzed 431 cases already ended in separation of family courts in Natal, Brazil. The results indicate significant differences between process types. In consensual processes the woman asked for the separation significantly younger than in litigious ones. The same pattern occurs when the man requests the separation. Regarding family, couples with lower average number of children pleaded significantly more consensual separations. There were no significant differences regarding marriage duration, showing that it is not a determining factor for consensus between spouses. The results suggest that, in consensual cases, couples probably have a greater understanding of the poor quality of the relationship, and they tend to agree that separation at a young age would be advantageous for both, since it increases the chances of looking for new partners to a stable relationship, thereby increasing the likelihood of reproduction investment.

6. DO MEN AND WOMEN EVALUATE THEIR ATTRACTIVENESS IN THE SAME WAY?

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Humans are characterized by their complexity with respect to survival and reproduction. When dealing with mating, including romantic partners' choice, men and women can adopt different choice strategies. Women invest more physiologically (with pregnancy and breastfeeding) and give the primary care to offspring and, thus, they usually look for partners whose higher ability to acquire resources and willingness to invest in them and in their offspring. On the other hand, when men look for romantic partners, they tend to give more importance to physical traits which indicate female reproductive condition. In order to better understand this choice process in humans, we aimed to identify which characteristics are more relevant to determining men and women overall attractiveness and verify possible associations with their self-assessment. The sample was composed of 272 undergraduate students from Natal, Northeastern of Brazil, who filled a 10 points Likert scale evaluated themselves with respect to characteristics related to physical attributes, personality traits and resources possession. Regression analyses show that for both sexes the trait "pretty/handsome face" was assessed as an important factor in their own attractiveness. Furthermore, women judged the trait "beautiful body" as an important one, while men valued more the trait "sincerity". Facial attractiveness was considered a good predictor for both sexes and it may indicate resistance to pathogens and stability during development. In addition, men commonly evaluate the attractiveness of their potential partners' body. This trait may indicate good physiological conditions. Finally, we expected the characteristic "good financial condition" to be an important feature in the male self-evaluation as romantic partner, but in undergraduates this fact may still not

be important because they are usually dependent of their parents. However, "sincerity" may be work as a clue to women of maintenance of paternal investment.

7. SEX DIFFERENCES IN THE USE OF SOCIAL INFORMATION IN MATE PREFERENCES

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When choosing a mate one must gather information to determine the quality of potential partners. An emerging body of literature suggests that humans, alike many non-human species, copy the sexual preferences of other conspecific same-sex individuals, i.e. mate choice copying. Here we examined if preferences for opposite sex target faces are influenced by facial cues of same sex individuals. We show that women increase ratings of attractiveness given to a man from a pair who they observe to be smiled at by another woman. However, results were only maintained when male stimuli were equally matched for attractiveness. That is, in situations in which the alternative male (who was not looked at) was even subtly more attractive, women did not mate choice copy but rather maintained their own preference. In contrast to women, men decreased ratings of attractiveness given to the woman from a pair who they observed to be smiled at by another man. These results suggest that while both men and women use social information in their mate preferences, only women mate choice copy (and only when the males are of equal attractiveness). Implications of these findings will be discussed in context to literature on mate preferences and mate choice.

8. RECOGNITION OF FACIAL EXPRESSION OF EMOTIONS: EXPLORING PERFORMANCE IN PSYCHIATRY RESIDENTS

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In the present study, we sought to examine the association of current psychopathology and attachment style in psychiatry residents, with their ability to correctly identify facial expressions of emotions. Specifically, we hypothesized that a greater current psychopathology and an insecure attachment would be related with difficulties in deciphering facial expressions of negative emotions. A total of 55 psychiatry residents: (R1 n=21; R2 n=14; R3 n=20) age range=24-30. In order to evaluate subjects' psychopathology, the Symptom Checklist was used. For the attachment styles, the Attachment Styles Questionnaire was used. For the recognition of facial expressions of emotion the Pictures of Facial Affect was used. Fear recognition was positively associated to level of anxiety ($r=0.29$, $p=0.02$) and hostility ($r=0.34$, $p=0.01$), while a trend was observed for the association of obsessive-compulsive traits and disgust recognition ($p=0.06$). Happiness recognition was positively related to an attachment style based on confidence ($r=0.35$, $p=0.009$), while sadness recognition ($r=-0.28$, $p=0.03$) and surprise recognition ($r=0.29$, $p=0.03$) were negatively related to an attachment style based on considering relationships as something secondary. Emotion recognition in patients with psychiatric disorders is essential in regard of both diagnosis and treatment. A surprisingly large number of residents had at least some difficulties in recognising facial emotions and mistook some facial emotions for other emotional states, a finding that is potentially devastating in terms of patient-doctor relationship. The finding of a negative correlation between avoidant attachment and lack of recognition of sadness and surprise is consistent with previous reports²², and could imply deficits in engaging in interactions as a nonconsciously acquired strategy to deactivate the attachment system and protect the individual from the retrieval of painful emotional memories. In summary, our preliminary findings suggest the importance of research into facial emotion recognition in medical professionals.

9. DOES FINANCIAL SUPPORT BACKGROUND CHANGES ROMANTIC AGE PREFERENCES IN OUR SPECIES?

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According to Parental Investment Theory, there are sex differences in romantic partners' age preference. Women have a higher physiological investment than men, who invests more economically. Therefore, women should select those partners with high social status and resources, usually older men. In other hand, since women fecundity and fertility decrease rapidly as they age, men usually prefer younger partners, valorizing characteristics related to youth. In this scenario, how does one's financial background affect their age preferences and their choices? The aim of this study was to investigate the influence of the individuals' financial support environment on their age preferences for ideal romantic partners. We compared age preferences between sex and different economic power classes, including ideal partners' minimum, ideal and maximum ages, actual partners' age, and ideal marriage age. A total of 158 undergraduate students, aged from 18 to 28 years, took part of the study. In order to investigate differences among the groups, General Linear Models test were performed. The results show that men have lower standards for partners' minimal and ideal ages acceptance compared to women. Those men involved in romantic relationships also have younger partners than committed women. In relation to ideal marriage age, we found that women expect to marry younger than men and both sex subjects with higher financial support expect to get marriage older. In sum, our results replicate the male-female typical age preferences already found but add evidence of differential age preference among economic power classes, suggesting that a trade-off between marriage age and effort to ensure a good social status affects romantic choices. In addition, we also found clues that richer men are more exigent in relation to maximum age accepted in their potential partners, but the relevance of this tendency might be clearer in a larger sample investigation.

10. ATTRACTIVENESS, ATTRACTION AND FEEDING BEHAVIOR IN DINING PAIRS

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Physical attractiveness plays an important role in attraction and mate selection. When members of a couple are not equally attractive, the less attractive person may compensate for this in various ways, perhaps including sharing food with their partner. Specifically, we predicted that feeding may be a means to display attraction and to compensate for lower attractiveness. To investigate this, 256 mixed-sex pairs of adults were observed while eating in public. Trained observers recorded information about food sharing behaviors and rated the physical attractiveness (5-point scale) of each member of the dyad. Dyads were then approached and requested, individually, to complete a questionnaire that asked about how frequently they fed and were fed by the dining partner, and attraction to the dining partner, among other things. Data from 3 dyads who were relatives were excluded. Although most (66.4%) dyads matched on rated attractiveness, among those who differed there was a low but significant correlation ($r_s = -.20$) between participants' relative attractiveness rating and their reported attraction level to their dining partner. That is, less attractive people tended to be more attracted to their more attractive dining partners. Self reports of feeding frequency indicated that more attractive partners are fed more often ($r_s = .20$), supporting the idea that feeding behavior may be a method of compensating for lower physical attractiveness within dining pairs. Asymmetries in reported attraction did not predict asymmetries in either reported or observed feeding frequency.

11. MALE NONVERBAL BEHAVIOUR DURING DATING IS AFFECTED BY WOMEN'S MENSTRUAL CYCLE

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In previous years, researchers have found fluctuations in physical attractiveness, dressing and behaviour during women's menstrual cycle, commonly peaking around ovulation. However, it has not been examined so far whether these changes affect men's behaviour. The aim of this study was to test differences in nonverbal expressions of men interacting with women in the follicular and luteal phase of their menstrual cycle. The study used a speed-dating paradigm, in which each person meets with several people of the opposite sex for only 3 minutes while their interactions were videotaped. For the purpose of this study, we analyzed 136 videotapes of men interacting with women who were in the follicular (64 interactions) or luteal (72 interactions) cycle phase. We recorded specific behavioural acts (8 expressions) and states (10 expressions). Based on previous research, these behavioural components loaded into two factors: (i) expressions of interest and (ii) expressions of disinterest. Differences between scores in these two factors and length of individual behavioural states when interacting with women in the follicular / luteal phase were compared by paired t-test. We found no significant differences in overall score of interest or disinterest in relation to the women's menstrual cycle. However, men communicating with women in the fertile phase spoke significantly longer than those communicating with women in the luteal phase of the cycle ($p = 0.017$). This indicates that women's menstrual cycle affects men's behaviour, however in a relatively specific manner.

12. HARD WORK PAYS OFF! BUT DOES IT REALLY WORK?

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Previous studies showed that female preferences for male physical attractiveness are based on traits such as V-shape of upper body, mesomorphic somatotype, and signs of physical fitness. The aim of the current study was to test if physical attractiveness of men can be increased by voluntary change of the shape of his upper body. In other words, we investigated whether a strength-endurance training enhancing physical fitness of the men and visually changing proportion of their somatotypic traits influences women's attractiveness judgments. Further, we supposed that higher muscularity might be more attractive to those women, who value physical attractiveness of their potential partners more.

We run two experiments. In Study 1, female raters judged 42 images of upper body of 21 men (2×21) taken by Scitec Nutrition®. Each man was photographed two times - first image was taken before training and the second image after 8 weeks of the training. In Study 2, the same 329 women rated attractiveness of 25 black-and-gray silhouettes of somatotypes.

Our preliminary results show a significant difference in female ratings of male pictures before and after the training ($p < 0.001$). The bodies after 8 weeks of training were rated significantly lower than the bodies before training.

Preferences for components of somatotype and images of bodies after 8 weeks of training significantly correlates with importance, which raters attribute to physical attractiveness of a potential or current partner ($p < 0.01$). Women who value physical attractiveness of potential partners higher prefer certain traits of mesomorphic and ectomorphic components of somatotype and bodies after 8 weeks of training.

We showed that women prefer male bodies with limited level of mesomorphic and muscular hypertrophy. As our results show, increasing of muscular hypertrophy and visually mesomorphic component of somatotype over certain level rather decreases the rating of male physical attractiveness significantly.

13. PARENTAL VIOLENCE AGAINST CHILDREN

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Children are the currency of life. Physical violence towards them reduces the reproductive fitness of their parent. Thus, physical child abuse seems a paradoxon. Our aim was to describe psychological and evolutionary reasons for parental violence.

We used the aggression questionnaire by Buss & Perry (AQBP), the questionnaire of parental education experience (FEE), questions about socio-economic variables, physical violence in the person's childhood and, when applicable, violence against own children.

Within the sample of 1121 respondents, most of them students of Innsbruck University, 20% experienced physical childhood violence, mostly caused by males, usually by fathers or other male relatives (see "stepfather issue" below).

Important variables were: lack of resources, lack of kin-support, grade of relatedness (more violence towards less closely related children) and reduced reproductive fitness (disease, disability of the child).

65 persons, themselves parents, was asked about physical and/or psychological violence against their own child(ren). Most named "reasons" were stress, the feeling of excessive demand, physical violence as means of education and reaction to violent behaviour of the child. This finding contradicts the official principle of strict non-violence vis-à-vis children.

The stepfather issue. Of respondents (n = 40) raised by their biological mother and a real stepfather, partner of their mother etc. almost 40% experienced physical violence, double the rate in the other groups. This corroborates prior findings, that these males represent a higher risk for children than genetically related ones (cp. Daly & Wilson 1985, 1988, 2002, 2007; Sariola & Antti Uutelab 1992). Bartol (2009) found that 12% non-related family members committed physical violence against children in Münster, Germany; also a higher than expected rate.

Conclusion: Our study documented that evolutionary factors can explain salient features of physical child-abuse, which, thereby, loses some of its paradoxy.

14. CAN YOU SMELL GARLIC? THE EFFECT OF GARLIC CONSUMPTION ON BODY ODOUR

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Human body odour is relatively stable as it is to some extent genetically determined. However, it is also shaped by environmental factors including eating habits. We know very little about how individual alimentary components shape our body odour though. In two experiments we tested the effect of garlic consumption on axillary odour because of its distinctive smell caused by allicin which is usually released when cutting or chewing garlic.

We used balanced within-subject experimental design. 10 and 16 male odour donors, 14 and 40 female raters using hormonal contraceptives participated in the first and second experiment, respectively. Males were divided in two groups (A, B). Males in A group were given bread and butter mixed with garlic (experiment 1: 6g and experiment 2: 12g of garlic, this corresponds to 2 and 4 cloves of fresh garlic, respectively), while men in B group were given only bread and butter. Groups were reversed one week later. Donors fixed the cotton pads into both armpits and wore them for 12 hours. Odour samples were assessed by raters for their pleasantness, attractiveness, masculinity and intensity on 7-point scale and analysed by paired t-test.

In the first experiment, hedonic assessment of experimental (garlic) was higher compared to control (non-garlic) condition, however these differences were not statistically significant. Results of the second experiment showed that the odour of donors in experimental (garlic) conditions was judged as significantly more attractive, more pleasant and less intense than in control (non-garlic) conditions. This unexpectedly suggests that garlic consumption positively influences perceived body odour hedonicity.

It could be caused by well documented antioxidant properties of garlic and/or garlic's activity against many Gram-negative and Gram-positive bacteria including genus *Staphylococcus* which contributes to the production of the armpit odour.

15. THE STUDY OF ASYMMETRY AND SEXUAL DIMORPHISM ON HADZA TEENS FACIAL IMAGES

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In evolutionary - anthropological studies, great attention is paid to studying the asymmetry and sexual dimorphism by photo images, considered as markers for important characteristics of mate quality and benefits, such as fertility and health.

The coefficient of asymmetry and four indicators of sexual dimorphism on the photos of children and adolescents Hadza people (representatives of traditional culture of hunters - gatherers) from 8 to 17 years (28 male and 28 female) are calculated. The material was collected during expeditions in Tanzania 2005, 2008, 2009 period, by M.L. Butovskaya. Symmetry was counted by taking left and right deviation from the midline, calculated from inter-pupillary distance, for six facial bilateral points and then summing the absolute value of individual scores. Sexual dimorphism was measured by measuring distance between specific points and calculating four ratios based on these distances: Cheekbone Prominence, Jaw Height/Lower Face Height, Lower Face Height/Face Height, and Face Width/Lower Face Height. All images were normalised on inter-pupillary distance.

All children are characterized by high degree of asymmetry, which females score is significantly higher. Among children, sexual dimorphism is not clearly expressed, only one of parameters is differed significantly: females have more wide faces. We also noted that Cheekbone Prominence among females is higher, but not significantly.

Following earlier studies, sexual dimorphism among Hadza adults is somewhat less expressed than in European groups. For Hadza female adults were revealed significant sexual dimorphism for the ratio Face Width/Lower Face Height and Cheekbone Prominence. Our data estimated the previous investigations on adults and showed an increasing of sexual dimorphism level in children in comparison with the adults, it is possible due to incomplete maturation of hormonal process.

16. DOES THE CUTEST CHILD RECEIVE MORE COOPERATION?

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The maintenance of social interactions is strongly based on cooperation. From the evolutionary perspective, the act of cooperating involves costs to the executor and benefits for those who receive the cooperative action. Recent studies suggest that children exhibit this behavior at a very early age, however few studies report responses to cooperation in relation to physical properties of children's faces. The set of infantile physical features such as the large head, round face and big eyes commonly described as cute, have the key function of mobilizing nurturant responses towards infants. The purpose of this project is to investigate the effect of different degrees of cuteness on child cooperation through a donation experiment. For this aim, low and high baby schema printed photographs of male and female infant faces of different age ranges will be presented to the children. Afterwards, the subjects will present face a dyad of low and high baby schema photograph and the experimenter will ask them to donate whatever amount of candies they wish to one of the photographs in each pair. The subjects will also be provided with three candies to donation, if the participant decides not to make the donation, the candy will not return to the experimental situation. Our hypothesis is that baby schema features and gender affect cooperation. It is expected that subjects will donate more candies to children of high baby schema, and female subjects will donate more than the male subjects. If the expected results are confirmed, it will be suggested that the baby schema is associated with a greater amount of cooperation, which is consistent with the evolutionary perspective, considering that cooperative actions enhance child survival.

17. OH NO SHE DIDN'T: INTRASEXUAL COMPETITION IS PARTLY MEDIATED BY CHARACTERISTICS THAT MEN FIND ATTRACTIVE

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Competition is the primary force for driving sexually selected adaptations in evolutionary psychology, yet women's intrasexual competition and their sexuality in general remain understudied. By examining the minimal amount of literature on the perception of sex and beauty and female competition, discussing two experiments that are aimed at showing that females indeed utilize intrasexual competition that is based in part on phenotypic cues of high mate value that human males consistently find attractive: waist-to-hip ratio, as well as discussing a theory of female intrasexual competition that is based on what we have learned about female sexual self-perception and their use of waist-to-hip ratio, and a females desire to carefully "negotiate space" and present themselves as the best possible choice in mate selection. The suggestion is that women are not only sensitive to, but will utilize the same phenotypic cues to female attractiveness that men do and that female relational aggression is an intrasexual competitive behavior, is partly mediated by the female's own phenotypic quality and relationship status, and facultatively utilized in context where a high quality male is primed. Overall, through exploring intrasexual competition of women, it is shown that societal ideals and men's ideals appear to drive women's perception of their own sexual and physical self-image and because women understand the perception of what is attractive to potential mates, they will utilize such perceptions in intrasexually-based competitive relational aggression in competition for a desired mate. The competition intensifies as the women themselves are physically closer to the optimal waist-to-hip ratio of .7. The further from this ratio a woman is, the less likely they are using their physical appearance as a form of competition and thus another competitive element may be taking place.

18. EYE GAZE BEHAVIOR AS A MEASURE FOR SOCIAL ATTENTION

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Social attention in real world setting consists of several behaviors with eye direction being one of the cues. Visual attention is attracted by any stimulus with social meaning. This study aims to measure which social cues are dominant in the subliminal contribution of attention, an area previously neglected in research.

Our brain is a primarily social organ and is particularly selective with regards to eye gaze. It is assumed that humans use eye gaze and other social cues to get a sense of where others are looking -our social attention is directed towards biological cues that carry social meaning. Therefore, biological stimuli will be most relevant of all environmental stimuli.

Body motion is the basis for human recognition and interpretation of social events. The question is what cues our brains use to interpret an actual social event. Those levels are found on the basic level, such as gender, speed, color, body motion, and gaze direction of the people presented in the scene (Shiffrar, 2008). We are also interested in gender differences when studying the perception of social attention. If sex hormones have an influence on social attention, there should be a difference between males and females in what attracts social attention.

We are going to conduct an empirical study using an electric oculograph and surveillance videos, in which social events occur in natural settings. 100 subjects will watch several scenes in parallel. We will record the gaze direction, thus gaining information about which scene is looked at when.

We expect biological cues carrying social meaning will trigger higher amounts of attention (i.e. visual focus) than biologically irrelevant cues. Participants should pay greater attention to evolutionary relevant cues such as attractiveness (search for a potential mate) or intentions of others (potential threat).

The research is part of the European VANAHEIM project (Video/Audio Networked surveillance system enhancement through Human-centered adaptive Monitoring). Outcomes of this project can be applied to event detection for safety or security and to environmental reporting for situational awareness.

19. BASIC EMOTIONS AND THEIR DYNAMICS (RESEARCH PROPOSAL)

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A previous study of Grammer et al. (submitted) showed that human smiles are perceived differently with changing facial dynamics. In general, more positive associations are made with slower onset and longer apex. Slow onset is seen as more joyful and genuine as a quick one, whereas a long apex tends to be perceived as more aggressive and negative than a short apex. The aim of the present study is to extend previous research as to whether the perception of basic emotions in general depends on facial dynamics.

Using the model of basic emotions by Paul Ekman (1992) we will analyse following basic emotions: surprise, fear, disgust, anger, happiness, and sadness. In this model, each basic emotion corresponds to a specific number of prototypes. An action unit (Ekman & Friesen, 1978) describes particular muscle contractions in the face, which are salient for the basic emotions. Virtual agents will be used (one male and one female, which can perform all action units) for each prototype. One major advantage using this model is that facial dynamics can be varied in onset as well as apex length. We will analyse four different variants with an onset of 5 or 25 frames and an apex of 10 or 70 frames. All variants have the same offset of 17 frames. Videos of constructed emotions will be rated by at least 20 men and 20 women on the items "aggression", "arousal", "coyness", and "other feelings". Based on previous findings (Grammer et al., submitted), we hypothesize that the perception of basic emotions changes with different dynamics of facial expressions.

Ekman, P., & Friesen, W. (1978). *Facial Action Coding System*. Palo Alto: Psychologists Press.

Ekman, P.; (1992). An argument for basic emotions. *Cognition & Emotion*, 6,169-200.

Grammer, K.; Oberzaucher E.; Fink B.; Stahl S.; Holzleitner I. (submitted). Temporal dynamics of Facial Displays and Perceived Meaning in Embodied Agents

20. TIME PREFERENCE, SOCIOECONOMIC VARIABLES, AND RISK-TAKING PROPENSITY IN A BRAZILIAN SAMPLE

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Decision making involving trade-offs between costs and benefits occurring in different time frames are frequent in our routine. These decisions range from everyday decisions, like how much food we will intake in a given meal, until significant determinations about financial investments, education, marriage, reproduction, crime, healthy habits and security. Human beings and others organisms usually discount the future, preferring smaller but sooner rewards over larger and later ones. Although such a present orientation could be regular and adaptive, a more extreme disregard for the future can encourage reckless and violent forms of risk-taking. Nevertheless, cues of limited and uncertain future could have pernicious effects on decision-makers. The objective of this work was to investigate possible predictors of high rates of future discounting, and possible relations with socioeconomic variables and tendency for risk behavior. This investigation used a correlational and transversal design. The data were obtained from 85 participants (32 male, 53 female; mean age of 35.7years), who answered a autobiographic questionnaire that included Brazilian criteria of economic classification, Kirby's Monetary Choice Questionnaire, and the Sensation-Seeking Scale. We verified that future discounting rates correlated negatively with scholarship and socioeconomic status. Nevertheless, there is no relation between future discounting and sensation seeking. Sensation seeking correlated negatively with age, and religiosity; and positively with alcohol consuming and nightlife. Jointly, the results suggest that preference for immediate reward may be related with the maximization of fitness in certain social contexts, taking risks probably lead to the increase in the chance of obtaining limiting resources at a specific point in life, and that intertemporal choices and risk behavior are not regulated by a single mechanism of time preference.

21. SEX DIFFERENCES IN MOTIVATION FOR MUSIC AND ARTS CAREERS IN BRAZIL: EVOLUTIONARY IMPLICATIONS

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Although there has been much theoretical work investigating the ancestral adaptive advantages of human artistic inclinations, more empirical work is needed to test and refine different theories. We used unobtrusive life outcome data to explore art evolution scenarios. We compared the sexes to differentiate between theories that predict specific differences, such as sexual selection, and theories that predict less sexual dimorphism, such as group cohesion. Further, the comparison of different art modalities can indicate whether they all have the same adaptive profile or have evolved separately. We compared the sex of all the applicants for admission exams to undergraduate courses on Music, Dance, Theater Arts, Plastic Arts, Visual Arts, and Art and Technology and also of those who actually registered in those university arts courses. We gathered information for the period between 1980 and 2010 from three official websites covering four Brazilian cities and universities and almost 71,000 applicants. We found that in most Music modalities there are more males as applicants and registrants, except for singing which had more females as applicants. All the other art courses showed a different profile: more females as applicants and registrants. There was no trend of change in these results throughout the 20 year period. Our data provide empirical support for adaptive theories that predict greater sex differences in artistic motivation. They also suggest that music and the other art modalities may have had different evolutionary pathways.

22. WOULD YOU BE COMPETITIVE WHEN PLAYING WITH YOUNG CHILDREN?

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Infantile traits in humans refer to a set of child-like features related to cuteness and youthfulness perception and motivation for caretaking. Babyfaced adults are perceived as naive, honest, physically weak and socially submissive. Some authors assume that affectionate feelings arise from mechanisms originally evolved to promote child care. However, few studies have tested the effect of infantile traits and of incapacity perception on cooperative behavior, in either adults or in other age groups. This project aims to investigate the effect of infantile features and age differences on cooperative and competitive behavior in order to verify how these behaviors are modulated along development. For this purpose, adults, adolescents, and children between six and nine years old will be invited to play a few matches of tic-tac-toe with four to five-year-old children. Winning strategies will be presented beforehand to the older subjects of the dyad. At each round we will record the winner, the use of winning strategies and the interaction between subjects. After the game, older subjects will answer questions about characteristics of the child with whom they played. Our hypothesis is that younger individuals will inhibit competitive behaviors in older opponents. It is expected that adults, teenagers, and older children, when interacting with young children in a tic-tac-toe game, will allow them to win even when having a chance to win themselves. Moreover, it is expected that this effect will be more evident when the children are considered as cute and vulnerable by the subjects. If the expected results are confirmed, it will be possible to understand, from an evolutionary point of view, that emotional and motivational systems related to parental care can modulate competition and cooperation.

23. ACROSS CULTURES AND TIMES: A NEW APPROACH TO THE RESEARCH ON FACIAL ATTRACTIVENESS

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One of the major themes in human cultural history - from mythology to fine arts - has been the allure of physical beauty. For a long time, beauty was thought to reside in the eye of the beholder - it was assumed that our aesthetic preferences are shaped by individual experiences and arbitrary cultural conventions. Numerous studies indicate that this is not the case, and it is now widely accepted in evolutionary psychology that attractiveness and beauty developed as adaptations, signaling mate choice relevant aspects such as fertility or health status to potential mates.

Still, previous studies suffer from methodological confinements. Perceptual studies mostly worked with two-dimensional stimuli (pictures), and morphometric investigations relied on traditional methods such as measuring distances or ratios.

Moreover, although some studies have previously investigated cross-cultural aspects of facial attractiveness, another potentially revealing approach has been neglected so far: a historical one.

Using 3-dimensional imaging technique, we plan to gather two extensive data sets: a cross-cultural sample of living people, and a historical one comprising statues of different epochs. We will address the following topics:

1. Differences in the perception of facial attractiveness in 2D and 3D
2. Investigating the shape of attractiveness in 3D using geometric morphometric methodology
3. Replicating and extending studies on the cross-cultural perception of attractiveness
4. Investigating the influence of the factor "historical epoch" on both shape and perceived attractiveness

This project will substantially advance previous methodology by going beyond mere phenomenology - attractiveness and beauty will not only be described through third-party assessments, but also linked to shape features. Adding the 4th dimension to the research on attractiveness, time, will further clarify the interaction of cultural norms and biological constraints when it comes to what we find beautiful in potential mates.

24. CHARACTERIZATION OF THE NON-VERBAL BEHAVIOR IN A GROUP OF WOMEN WITH THE DIAGNOSIS OF SOCIAL PHOBIA: A PILOT STUDY

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In psychology and psychiatry, the analysis of the functional and phylogenetical causes of the behavior helps to understand pathologies. Regarding the methods, such an approach requires a direct collection of information on the behavior. The purpose of the current study was to examine the non-verbal behavior in women with social phobia. A sample of fourteen women with the diagnosis of social phobia and thirteen women without any psychiatric diagnosis, of an average age of 30 years, were filmed during the first five minutes of a clinical interview. Nineteen behaviors were operationally defined and the frequencies of appearance were registered. In the results in comparison to the control group, the women with diagnosed social phobia less frequently supported their speech with their hands (U Mann Whitney = 125 p = 0.010) and put their hands on their legs (U Mann Whitney = 95 p < 0,001). The patients nodded their heads (U Mann Whitney = 222 p = 0.018), touched their faces (U Mann Whitney = 139.5 p = 0.041) and the hair with their hands (U Mann Whitney = 217 p = 0.035) and licked and compressed their lips (U Mann Whitney = 222 p = 0.018) more often than the controls. After one minute, the controls began to support their speech more frequently with their hands (χ Kruskal Wallis = 9.549 p = 0.049), while the patients did not. In conclusion, the people with social phobia moved in a reduced spatial range. More frequently than the controls, they showed behaviors directed toward themselves. The controls modified the frequency of some behaviors after some time, while the women with social phobia did not. Certain similarities between the most frequent behaviors of the patients and the characteristic behaviors of subordinate individuals in other species were observable.

25. ACCURACY OF JUDGMENTS OF PERSONALITY MADE ON THE BASIS OF COMPOSITE PICTURES

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Using composite pictures allows researchers to capture the common physical traits, while minimizing the presence of individual facial characteristics. Two studies aimed to find out whether beholders are able to perceive personality differences in composites created from photographs of people scoring high and low on Big Five Factors. They agreed that composites of people high/low on Extraversion were perceived accurately on the congruent trait.

We focused on more specific traits and used Cattell's 16 PF questionnaire to assess the target's personality. Forty-four composites were created, each made of 15 facial images of men or women scoring highest or lowest on one of the 11 chosen traits. The composites were presented to 72 raters (39 females) who judged them on 10-point scales for each congruent trait.

The raters correctly perceived personality differences between the composites high and low on eight traits in males: Warmth, Emotional Stability, Dominance, Liveliness, Rule-Conscientiousness, Social Boldness, Abstractedness, and Extraversion; and two traits in females: Liveliness and Abstractedness. Surprisingly, Dominance and Reasoning in females were judged significantly erroneously.

Cattell's 16 PF questionnaire showed to be a suitable tool for assessing target's personality. The results provide further evidence that personality can be judged accurately merely on the basis of facial appearance. Such ability could be hardly explained by trial-error learning alone and thus points to evolutionary importance of correct estimation of other people's personality. The sexual differences found (females judged more traits correctly) imply higher evolutionary significance of this ability for women, probably mainly related to mate choice.

26. ATTRACTIVENESS OF MALE NONVERBAL DISPLAYS

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Current research revealed that in modern cultures sex-typical traits in men (i.e. masculine traits) are preferred by women more than sex-atypical traits. It is suggested that sexual selection might have influenced some nonverbal displays during the course of evolution, since behavior perceived as male typical is linked with attractiveness and mating success. In the courtship context, masculinity is generally connected with extravert behavior (e.g. dynamic, temperament) and femininity is connected with introvert behavior. Women consider higher expressiveness, frequency of gazing and smiling as more attractive. On the other hand, although behavior connected to taking space is rated as masculine, it is not rated as attractive.

The main aim of our study was to investigate possible relationship between male masculine nonverbal behavior and attractiveness as judged by women. We hypothesized men with higher occurrence of masculine nonverbal traits will be rated as more attractive by women, further we hypothesized men rated as more masculine will be rated as more attractive by women. Seventy six standardized 10 second long silent video clips of men were rated by 79 women for attractiveness and masculinity-femininity on 7-point scales.

We found a significant relationship between rated attractiveness and masculinity-femininity. In contrary to our expectations, more feminine men were rated as more attractive. This relationship was not influenced neither by using oral contraceptives, the mating context nor by self-rated attractiveness and masculinity-femininity. The results based on analysis of particular nonverbal traits proceeding on these days will be presented at the upcoming ISHE meeting.

27. INFLUENCE OF HOMOGAMY, COMPLEMENTARITY AND SEXUAL IMPRINTING ON LONG-TERM PARTNER CHOICE (RESEARCH PROPOSAL)

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A number of recent studies have shown that both physical and personality characteristics influence the choice of sexual partners. According to the homogamy theory, people prefer partners with basic personality traits similar to their own. The theory of complementarity states that in order to decrease the risk of inbreeding, people choose mates with opposite personality/physical traits. Finally, the theory of sexual imprinting suggests that mate choice is influenced by opposite-sex parent. The proposed project aims to clarify the role of primary family on mate choice.

The main aim of the proposed study is to test for the influence of sexual imprinting on partner strategy (homogamy or complementarity), in particular with respect to the quality of relationship with a parent. In contradiction to the previous studies, we suggest that good relationship with a parent is more important in prospective mate choice than sex of the parent. In other words, we hypothesize that people choose sexual partners with characteristics similar to their parent (irrespective of sex) with whom they had a better relationship during childhood. Further, we suppose people will choose similar partner strategy (homogamy or complementarity), if they perceive their parent's relationship positively, and if they recall a good relationship with their parents during childhood. On the other hand, they can choose an opposite strategy in the means of retraumatization. Moreover, we presume that these mate choice strategies are reflected in the quality of the relationship, with individuals using homogamy strategy to have a higher quality relationship. Finally, if mate choice is influenced by the primary family, we suppose that the quality of the couple relationship will be similar to relationship quality of their parents.

Fifty respondents (age 18-35), their partners, their parents and partner's parents will fill in three questionnaires: EMBU for assessment of the relationship with parents during childhood; short version of NEO-PI-R personality inventories and inventory measuring dyadic adjustment for assessing the quality of the couples' and their parents' relationship quality.

28. RESEARCH PROPOSAL: PRO-SOCIAL AND COOPERATIVE BEHAVIOUR IN A PEER CONTEXT AMONG PRESCHOOLERS

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From an evolutionary perspective, friendships are a valuable social resource and children must learn how to develop and maintain friendships early on. Human friendships are complex and involve many different forms of prosocial behaviour. Children must learn to use these behaviours differentially in different social relationships, which may be of different and changing value. How and when do children learn these skills? Since young children spend much of their time in preschools, this is where they may first learn to form and maintain friendships. The observation of children in preschools is thus expected to yield insights into the development of friendships and the forms of prosocial behaviour used to maintain them.

Hypotheses:

1. Amounts of pro-social behaviour and cooperation (especially successful cooperative problem solving) will be higher in friends than non-friends and will be correlated with social cognitive ability.
3. The complexity of behaviours and number of different behaviours shown will increase with age.

Possible effects of relationship quality (value, security, compatibility), gender, gender difference and dominance status will be investigated exploratively.

Current state of research:

1. An observational measure of friendship in children using close proximity was compared to teachers' reports and children's self-reports. Results indicate the measure is useful, especially for very young children, who had problems answering the questions.

2. An observational measure of dominance was also compared to teachers' and children's reports but it was not possible to validate it in this study. Further research in other groups is planned.

3. A measure of prosocial tendencies using picture stories is currently being compared with teacher reports and contrasted with a Theory of Mind test.

4. A measure of cooperation using apparatuses is currently being tested exploratively.

29. DEVELOPING MATE CHOICE PATTERNS: WHO AM I? WHO DO I WANT? WHO DO I GET?

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Numerous studies have investigated the universality of mate choice patterns and sex differences have been well documented. However, studies on adolescence are rare and it is important way to understand the development of those patterns. 353 students, from 12 to 19 years, including 264 girls (age mean \pm SD = 15.36 \pm 1.40) and 86 boys (age mean \pm SD = 15.36 \pm 1.40), took part in this research. All these adolescents were in a romantic relationship. We applied a five-point Likert Scale on Choice of Partners for Adolescents composed of 21 items based on previous Brazilian studies and literature, used in four versions to describe romantic partners: self-assessment, short term, long term, and actual partners' assessments. We applied a General Linear Model for repeated measures to compare the four evaluations for each trait and sex. Our results show that girls tend to value Hygienic habits, Reputation, Demanding in choosing partners, Good financial perspectives, Chastity on their own more than in their ideal and/or actual partners. In addition, they value Fidelity, Kindness, Good humor, Healthy habits, Commitment in the relationship, and Emotional stability in their long term ideal partner and/or actual partner higher more than in themselves and/or short term ideal partner. On the other hand, boys tend to value in themselves their Ambition and willingness to work more than on their actual partner. They also perceive their actual partners as more committed to the relationship and more jealous than themselves. Facial attractiveness tends to be more valuable in short term than long term ideal partners. These patterns suggest a certain demand in idealized long term relationships, which are achieved in actual ones. Furthermore, comparing these to the adult mate choice patterns, we suggest that adolescents already perceive themselves in the biological mating market.

30. THE INFLUENCE OF CONTAMINATED AND UNCONTAMINATED FEEDING ON PERCEIVED INTIMACY IN DYADS

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Previous research indicates that if feeding is seen in couples, viewers tend to view their relationship as more intimate (Miller et al., 1998), and observational research finds it typically occurs in involved couples. We hypothesized the relationship of an adult mixed-sex dyad seen dining together, feeding will produce higher levels of perceived intimacy than no feeding, and feeding of contaminated (i.e., with potential germ transfer) foods will produce higher levels of perceived intimacy than feeding of non-contaminated foods.

Our hypotheses were tested using a design in which participants viewed 5 of 25 videotapes showing five different mixed-sex pairs of young adult actors sharing a meal in a restaurant. In four of these, one actor fed the other between the couples either with contaminated or with non-contaminated food from their plate. In a fifth control video, no food was shared. Each video was grouped with four other videos to create sets in which: (1) each particular pair of actors appeared only once, and (2) each particular food sharing type occurred only once. These were shown to 50 small groups of 1 to 7 young adults (mean age = 19.4 years) in quasi-random orders such that each dyad and video type appeared an equal number of times in each position across the 50 different video sequences. Immediately after each video, each participant completed a brief survey asking about the attractiveness, attraction and intimacy in the dyad they had just observed.

The comparable responses to all five versions (i.e., five different dyads) of each variety of feeding behavior were grouped together for further analysis, including comparison of contaminated versus non-contaminated feeding and the direction of feeding (e.g., male to female). The results will be compared to findings from previous studies and discussed from an evolutionary perspective on mate selection and attraction.

Miller, L., Rozin, P., & Fiske, A. P. (1998). Food sharing and feeding another person suggest intimacy: Two studies of American college students. *European Jour. of Social Psychology*, 28, 423-436.

31. PARTNER CHOICE PREFERENCES IN INDIAN DIASPORA IN TANZANIA (DAR-ES-SALAAM)

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Indian culture is very strict about the rules of marriage partner's choice. Traditionally parents arrange marriage partners for their children. Indian people usually marry inside endogamous community (caste) and outside exogamous groups (gotra) (Kutzenkov 1983). Same is true for Indian Muslims. Does the same principles applied to Indians, living in other countries? To answer this question we investigate the Indian Diaspora of Dar-es-Salaam. The data were collected during our visit to Tanzania in August-October 2010. The total sample included 235 questionnaires and more that 30 life-history interviews. Data was analyzed in SPSS-13.

It was demonstrated that traditional system of matrimonial relations are actively practiced by Indian Diaspora of Dar-es-Salaam nowadays. Marriage migration is still practiced. Cross-cultural marriages are not practiced by Indians. They don't marry Africans, neither Europeans but many Indians have local friends. At present certain proportion of young Indians are trying to select their partners themselves. Many Indians are living in extended, patrilocally organized families. Certain increase in the age of brides and grooms are also observed, as well as a general decrease in the number of children per family. Our data on marriage partner choice in case of the Indian Diaspora in Tanzania confirm the general principles of evolution of sexual selection in humans (Simons 1979), as well as the theory of parental investment (Kenrick 1990; Trivers 1972). Indian culture produces an additional important criterion of partner choice (caste and religion), but even in this case we may interpret the marriage strategies in the light of evolutionary theory. This study was supported by RFHR, grant № 08-01-00015a.

32. VARIABLE PREFERENCES FOR SEXUAL DIMORPHISM IN STATURE (SDS) MIGHT NOT BE UNIVERSAL.

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In Western societies women prefer relatively taller men as potential partners, whereas men prefer women to be slightly shorter than them (e.g. Pawlowski & Koziel 2002; Shepperd & Strathman 1989; Salska et al., 2008). To this day, only one study have reported data that question the universality of the 'male-taller norm'. Sear and Marlowe (2009) reported that in the Hadza society (Tanzania), in 8.2% of 207 marriages the wife was taller than the husband, what is significantly higher than in Western societies.

The present studies were conducted among the Himba (Ovahimba) tribe (Sorokowski, et al., in press), a nomadic pastoral traditional ethnic group living in the northern part of Namibia (Africa), and among the Yali tribe, ethnic group from remote part of West Papua. The participants were shown six pairs of silhouettes, depicting an opposite sex couple differing in SDS, calculated as the ratio of man's height divided by woman's height. The SDS ratios ranged from 1.19 (i.e., the man being much taller than the woman) to 0.96 (i.e., the woman being slightly taller than the man)

Contrary to Western societies, many Himba (31% males, 33.8% females) preferred partners of height that was equal to their own. Additionally, considerable (21.4%) number of males preferred SDS where the woman was slightly taller than the man. Yali participants had very diverse preferences and their answers were equally divided between each presented SDS.

Our outcomes differ from several dozen previous research showing strong 'male-taller norm'. Thus our data challenges the view of a universal preference for taller men, suggesting that height preferences may be influenced by environmental and ecological conditions.

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