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Book Design

Elaine Nunes | Designer

Conference Venue and other useful information



Ver-o-peso, Belém



Universidade Federal do Pará

Belém is the capital city of Pará State. Founded by the Portuguese in 1616, Belém still has its typical colonial architecture contrasting with the modern architecture of the boulevards. There are approximately 1.8 million inhabitants, the majority of which live in the urban area, while a small percentage live in the forest area on the other side of the river. Opposite the city is the largest river archipelago in the world. There are 35 islands associated with Belém, all of which are a short journey away by boat. The people who live on these islands are called “ribeirinhos” (riverbank inhabitants). Belém’s climate is warm (average of 27°C) and humid, and there are many beautiful beaches along the river. Furthermore, Belém is well known for its Amazon-haute cuisine, based on fresh fish and shrimp and exotic fruits from the forest.

The Universidade Federal do Pará is multicampi, the largest university in the Amazon area, and has more than 50,000 students between undergraduate and graduate. It has a fundamental relevance to social and ecological issues in the Amazon region. UFPA is located along the bank of the Guamá River, near the estuary of the Amazon River.

Address: Avenida Augusto Corrêa, nº 01. Guamá, Belém, Brasil.

Schedule Summary

Tuesday 5th August, 2014

- | | |
|----------------|---|
| 3.00pm | Registration opens |
| 5.00pm | Opening Ceremony and Keynote Address
Ullica Segerstrale: "Science as Adventure: The creative
life of Bill Hamilton" |
| 6.30 - 10.00pm | Opening Reception |

Wednesday 6th August, 2014

- | | |
|---------------|---|
| 8.00am | Registration open |
| 9.00am | Plenary
Eduardo Ottoni: "Tool use traditions in nonhuman
primates: the case of tufted capuchin monkeys" |
| 10.00am | Coffee |
| 10.30am | General talks I |
| 12.20pm | Lunch |
| 2.00pm | General talks II |
| 3.40pm | Coffee |
| 3.45 - 6.15pm | Poster session |

Thursday 7th August, 2014

- | | |
|---------|--|
| 9.00am | Plenary
William McGrew: "The cultured chimpanzee: Nonsense
or breakthrough?" |
| 10.00am | Coffee |

10.30am	General talks III
12.20pm	Lunch
2.00pm	General talks IV
3.40pm	Coffee
4.00 - 6.00pm	Symposia
	Symposium I: "Parental investment in contemporary context"
	Symposium II: "The scented ape: communication, perception and application"

Friday 8th August, 2014

9.00am	Plenary
	Elizabeth Oberzaucher: "Urban ethology: How environments shape our behaviour"
10.00am	Coffee
10.30am	General talks V
12.30pm	Lunch
2.00pm	Social Program

Saturday 9th August, 2014

9.00am	Plenary
	Maryanne Fisher: "Women's competition for mates: Experimental findings leading to ethological studies"
10.00am	Coffee
10.30am	General talks VI
12.20pm	Lunch
2.00pm	General talks VII
3.40pm	Coffee
4.00 - 5.20pm	General Assembly
8.00pm - 12am	Banquet

Detailed Schedule

Notes

Venues

The conference will be held at the Benedito Nunes Convention Centre

Opening Ceremony, Keynote Address, and Plenaries take place in the Main Lecture Hall

Opening Reception, Poster session and coffee breaks take place in the Entrance Hall

All General talks take place in the Main Lecture Hall

Symposia are in the 'Tinbergen' and Main Lecture Hall

Abbreviations

LMA - Applicant for the Linda Mealey Awards 2014

SFA – Student First Author

Abstracts

Tuesday 5th August, 2014

3.00pm - Registration opens

5.00pm - Opening Ceremony and Keynote Address

Science as Adventure: The creative life of Bill Hamilton

Ullica Segerstrale, Department of Social Sciences, Illinois Institute of Technology, US

William Donald “Bill” Hamilton was the man who solved Darwin’s big problem: how could altruistic behavior in animals ever make evolutionary sense? 50 years ago his 1964 paper “The Genetical Evolution of Social Behaviour” started a scientific paradigm shift by introducing the concept of “inclusive fitness” to replace individual fitness as the entity that evolution seemingly maximizes, and formulating this mathematically. Hamilton’s life-long scientific creativity was due both to personality features and upbringing. He was a pioneer type, so his next big project was explaining the evolution of sex (as a scheme to avoid parasites), and mate choice (as based on health indicators). And he kept challenging himself, intellectually and physically, pushing himself into situations to test his problem-solving capability. This is why there are so many “Bill” stories around, including Brazilian ones. Brazil played a huge role in Hamilton’s life, ever since he arrived as a doctoral student to gather empirical evidence for inclusive fitness. He found much more: caring mentoring by Professor Warwick Kerr, friendly colleagues, surprising nature, fun-loving people, a new language, and a liberating environment. Brazil became his home abroad and he returned there again and again, testing old ideas and getting new

ones. He was especially intrigued by the Amazon flooded forest. His work on ecology and environmental protection around Lake Mamiraua employed a floating research station whose Bill Hamilton Itinerant Center for Environmental and Scientific Education is named after him. In 1993 he became a member of the Brazilian Academy of Sciences. For Bill Hamilton, science was the best adventure, and Brazil the place to be.

6.30 - 10.00pm - Opening Reception

Wednesday 6th August, 2014

8.00am - Registration open

9.00am - Plenary

Tool use traditions in nonhuman primates: the case of tufted capuchin monkeys

Eduardo Ottoni, University of São Paulo, BR

Tool use was once a major defining feature of “human nature”. If the findings about the spontaneous use of tools by wild chimpanzees forced us to rethink traditional views on the “unique and exclusive” character of human technological abilities, the discovery of similar behaviors in a few monkey species - one Old World monkey (*Macaca fascicularis*), and one genus of New World monkeys (*Sapajus* spp.)- leads us to broader questions, focusing our attention not in phylogenetic proximity, but rather on the cognitive, ecological and social conditions and mechanisms fostering the emergence of tool use and behavioral traditions. The use of tools does not imply, of course, any particular underlying cognitive mechanisms. In most cases, it involves a single, “species-typical” behavior, which may look quite “hard-wired”. Even among tool-using birds, the development of such abilities seems to rely mostly on individual learning, building on innate predispositions. In the case of nonhuman primates’ toolkits, though, there is growing evidence of behavioral variation that cannot be explained just by genetic differences between populations, nor by different environmental pressures and affordances, suggesting the result of socially biased learning. The comparative approach, by itself, cannot provide hard evidence of behavioral traditions: developmental studies, as well as field experiments, are helping to unravel the cultural nature of primate tool use. Though human culture (cumulative, symbolic) may depend on special cognitive features, such as a “Theory of Mind”, enabling shared intentions, imitation, and purposeful teaching, simpler mechanisms, like “stimulus enhancement”, can support the establishment of behavioral traditions,

and the lasting changes in the environment produced by some forms of tool use can be seen as instances of “niche construction” optimizing naïve observers’ learning opportunities.

10.00am - Coffee

10.30am - General talks I

10.30am - On the biological and cultural evolution of shame: Using internet search tools to weight values in many cultures

Klaus Jaffe, Universidad Simon Bolivar, VE

Shame has clear biological roots and its precise form of expression affects social cohesion and cultural characteristics. Here we explore the relative importance between shame and guilt by using Google Translate to produce translations for the words shame, guilt, pain, embarrassment and fear to the 64 languages covered. We also explore the meanings of these concepts among the Yanomami, a horticulturist hunter-gatherer tribe in the Orinoquia. Results show that societies previously described as “guilt societies” have more words for guilt than for shame, but the large majority, including the societies previously described as “shame societies”, have more words for shame than for guilt. Results are consistent with evolutionary models of shame which predict a wide scatter in the relative importance between guilt and shame, suggesting that cultural evolution of shame has continued the work of biological evolution, and that neither provides a strong adaptive advantage to either shame or guilt. We propose that the study of shame will improve our understanding of the interaction between biological and cultural evolution in the evolution of cognition and emotions.

10.50am - Sociosexuality in young Chilean couples on steady relationships: a comparison by sex (SFA) (LMA)

Ana Kinkead, Universidad Autonoma de Chile. Fundacion Ciencia y

Evolucion, CL

Ana Fernandez, Universidad de Santiago de Chile, CL

The challenges of human mating imply adaptive responses which are sexually differentiated and transcend cultural contexts. Sociosexuality has been studied from an evolutionary perspective, in terms of an orientation towards unrestricted sexual openness or the opposite tendency of individuals. Several studies find that men on average are more sexually unrestricted (willing to engage in casual sex) than women, while women have a more restricted average sociosexuality than men. Buss (1988) documented conditions that regulated sociosexuality and possibly jealousy reactions in married couples, but most studies do not consider steady romantic dyads when investigating sex differences. On the other hand, sociosexuality should not be related and must be independent of the frequency of sexual activity in individuals that are currently involved in a sexually active steady relationship, but it should be related to sexual activity in those individuals who are not involved in a sexually active dyad. Jealousy, on the other hand, is an emotion that protects the loss of a valued partner and in the context of steady relationships, could possibly be distributed equally among the sexes or be an indicator of the type of adaptive problem that the sexes faced throughout evolution. Thus, continuing with Schmidt et al (2005) findings of the predicted adaptive sex differences in sociosexuality in 48 countries, including Chile, we provide evidence of sociosexuality in steady young and potentially reproductive couples. We hypothesize that men would be more sexually unrestricted than their female partners, in a simple that shows very favorable and healthy relational indicators. We also expect that preventive jealousy should be more characteristic of women, who risk the loss of parental investment if a partner falls for a rival. 67 young heterosexual couples participated in the investigation (M age = 23) with an average relationship length of 2.9 years. Gender comparisons in sociosexuality, prevalence of jealousy, and other relational variables were assessed. Significant differences in sociosexuality and preventive jealousy showed that, in accordance to evolutionary predictions, men in stable relationships are

significantly more sexually unrestricted than their partners, and that women in a steady relationship report significantly higher levels of preventive jealousy than their partners. On the other relational variables there were no differences among men and women in their mate value, attachment styles, sexual or relationship satisfaction, which were all above average in both sexes (pointing to healthy steady couples). Similarly, a negative correlation among sociosexuality and reactive jealousy was observed in the overall sample, and in women mate retention tactics were positively correlated with reactive and preventive jealousy and self-reported physical attractiveness. The interpretation of this preliminary data supports the idea that adaptive sex differences in human mating are stable and archaically established in the human mind, and not dependent on relationship status. We propose to investigate further if sociosexuality varies longitudinally within a steady relationship.

11.10am - Why modern life makes us sick. Answers from cross-cultural epidemiology and evolutionary medicine

Wulf Schiefenhövel, Human Ethology Group, Max Planck, Andechs, DE

Medical research in traditional societies of Mainland and Island New Guinea shows that a number of diseases, which are typical for modern societies, are completely or almost completely absent. These include high blood pressure, coronary ischemia with heart attack and other consequences, stroke, obesity, diabetes, allergies, myopia, infertility, osteoporosis, autoimmune diseases, and (up to an age of approximately 45 years) caries or parodontopathia. Psychiatric diseases occur, but seem less common than in “the West“. How can this remarkable difference be explained? In prehistory, the biggest enemies of Homo sapiens were parasites; they could basically only be fought against by the immune system. Modern medicine and hygiene have made vast progress to reduce the number of deaths due to infectious diseases. That and “repair-surgery” has pushed up life expectancy for e.g. German baby girls to almost 83 and for baby boys to almost 79. Yet, we are suffering from a large number of chronic, very costly problems; among them the above-mentioned ones missing

in traditional Melanesian societies but also polycystic ovaries, chronic pain, “burn-out”, anorexia nervosa, bulimia, congenital hip dysplasia, prematurity in newborns, sudden infant death syndrome, “cry babies”, lack of motor skills as well as stamina in children, and other medically relevant conditions. Wrong modern nutrition (New Guineans eat self-grown or collected, non-refined fresh food) is one important single factor for this derailment of human health. But other factors may be of similar weight: e.g. normal body movement from infancy to old age with demanding physical work from childhood on, evolutionarily perfect infancy with very close body contact to competent mothers and other caregivers as well as feeding on demand, social embedding of the individual, happiness, rituals, feasts. These salutogenetic factors have, so far, not received enough attention in the developing discipline of evolutionary medicine. Cross-cultural medical and ethnomedical research, based on evolutionary thinking, uncovers different epidemiologies in different societies and environments and, thereby, is a powerful tool to understand the evolved mechanisms leading to health and disease.

11.30am - Playing in the Dark: The Dark Triad and competitive sports

Sarah Strout, Dominican College, US

Gregory Carter, University of Durham, GB

The growth in research on the Dark Triad (DT; of sub-clinical narcissism, Machiavellianism and psychopathy) over the past decade has been dramatic. Studies on the trait constellation have covered a multitude of subjects – including attitudinal and behavioral competition, with which it is highly correlated. DT individuals are highly agentic, individualistic and competitive, and are also sensation-seekers. Work to date has explored intrasexual competition in women scoring highly for the trait. However, we also know DT individuals to be competitive across multiple aspects of their life and interactions with others. The present research explores how DT is manifest in relation to competition on the pitch, track and field. Our predictions were that athletes would score higher on the Dark Triad than non-athletes, and those in contact sports and individual sports would score

higher on the Dark Triad than those in non-contact and team sports. 233 participants from the U.S.A. and the U.K. were asked to answer questions about their sports involvement and the Dirty Dozen, a measurement of the Dark Triad. Results confirm our hypotheses. Athletes scored higher on the Dark Triad than non-athletes. Athletes in contact sports scored higher on the Dark Triad than those in non-contact sports and athletes in individual sports scored higher on the Dark Triad than those in team sports. This research suggests that the thrill of physical competition and the pursuit of individual glory appear to hold great appeal for them. Further research should investigate whether athletes with these traits not only are more likely to engage in competitive sports, but also perform better in competitive sports than those who do not have those traits.

11.50am - Ethological approaches to anorexia

John Richer, Department. Physiology, Anatomy and Genetics, University of Oxford, and Paediatric Psychology, Oxford Universities Hospital NHS Trust, GB

Anorexia has the highest mortality rate (about 20%) of any psychiatric disorder, from medical complications and suicide. It seems perverse therefore to argue that the motivational systems involved also have an adaptive function, but several authors have postulated evolutionary explanations variously involving the delay of child bearing (about 90% are female and the majority are adolescents), fleeing from famine, intrasexual competition, status reduction, and altruism. Several themes repeatedly emerge: 1. Reduced food intake reduces fertility (leading to amenorrhoea and thinness which reduces attractiveness to males). 2. Deciding that fertility should be postponed leads to reduced food intake. 3. This happens in environments seen as unpropitious to reproduction because of unavailability of nutrition, family/social support, or having low social rank, etc. 4. Anorexic girls feel devalued through a combination of domination by others and their own interpretations of events. A higher order motivational system that could have evolved would have the following components: A. Reduced food intake. B. Postponement of reproduction

(amenorrhoea, being thin and less attractive to males, etc.). C. Self-denial, altruism, caretaking. D. A response to stress. This mechanism would be triggered during times of food shortage in hunter-gatherer communities, and could have been selected for because of the inclusive fitness (more food for kin) and individual fitness (delay child bearing until a more propitious time) benefits which it bestowed. But anorexia is most prevalent in affluent societies and so not triggered by food shortage. It is triggered by activation of a different part of the motivational system: stress, leading to self-denial, altruism and caretaking. In Attachment Theory terms, this is the avoidant insecure strategy, which involves being caring and compliant, achievement oriented, emotionally independent and vigilant for the behaviour of others; the individual tends to deny her own wants and needs in order to fit in with others, notably the caregivers, again to maximise safety. In peer relationships, she is often appeasing and submissive. The strategy is a response to a child's needs not being sensitively responded to by their caretakers. The majority of studies find this style of behaviour and family functioning in anorexic girls. This has implications for treatment. Initially food intake and weight gain must be the focus, but from the beginning there must also be an understanding of the avoidant strategy with its appeasing, self-denying, low status approach within and outside the family. Hyper-nurturing on the one hand and helping the acquisition of more assertion skills and self-confidence on the other are important. Lower order motivational conflict helps explain some of the puzzling phenomena in anorexia and bulimia, such as some girls' focus on recipes and cooking but not eating, and the swings between bingeing and vomiting. Thus, understanding the phenomena observed in girls with eating disorders is enhanced by considering a putative higher order motivational system (attachment/food scarcity) and lower order motivations in conflict.

12.20pm - Lunch

2.00pm - General talks II

2.00pm - On the roots of prosocial motivation: Culture-specific scaffolding predicts toddlers' spontaneous help (SFA) (LMA)

Moritz Köster, Department of Psychology, University of Osnabrueck, DE
Joscha Kärtner, Department of Developmental Psychology, University of Muenster, DE

Lilia Cavalcante, Institute of Applied Social Sciences, Federal University of Pará, Belem, BR

Rafael Carvalho, Institute of Psychology, University of the State of Rio de Janeiro, BR

Resende Briseida Dôgo de, Department of Experimental Psychology, University of São Paulo, BR

It is often proposed that the involvement of young children in chores plays a key role in the development of prosocial motivation and behavior. However, whether prosocial behavior in the second and third year is influenced by early socialization experiences remains an ongoing debate. In this cross-cultural study we systematically analyzed the influences of caretakers' scaffolding during daily routines on toddlers' spontaneous instrumental help between 18-30 months. One hundred sixteen mother-child dyads were assessed in three different sociocultural contexts: villages in the Amazon region (rural Brazil, relational cultural milieu), Münster (urban Germany, autonomous cultural milieu), and São Paulo (urban Brasil, autonomous-relational cultural milieu). Mother and child were videotaped during two standardized behavioral tasks: first, mothers instructed their children to bring two objects from one place to another. Maternal scaffolding was coded on two scales: emphasis on obedience (i.e., seriousness and consistency of maternal requests) and emphasis on autonomy (i.e., asking the child, providing reasons for the request). Furthermore, toddlers' requested helping was coded. Second, toddlers' spontaneous helping was assessed in an out-of-reach task: the experimenter dropped three clothespins and reached for them unsuccessfully. Scaffolding styles varied significantly between cultures: German mothers showed higher autonomy-supportive scaffolding, but lower responsibility-supportive scaffolding than Brazilian mothers.

Furthermore, mothers from São Paulo showed more autonomy-supportive scaffolding than mothers from rural Brazil. Most importantly, these culture-scaffolding styles predicted toddlers' spontaneous prosocial behavior: in rural Brazil, maternal responsibility-supportive scaffolding predicted children's spontaneous helping. The relation between the emphasis on obedience and spontaneous helping was partially mediated by requested helping behavior. In contrast, in the urban samples, i.e., Münster and São Paulo, mothers' autonomy-supportive scaffolding was the best predictor of toddlers' spontaneous help. In conclusion, the development of toddlers' spontaneous helping behavior is closely related to maternal scaffolding styles. The present study provides first evidence that spontaneous helping is influenced by culture-specific socialization. These findings shed novel light on the role of cultural practices for the development of prosocial behavior and the culture-specific motivations underlying spontaneous helping as early as the toddler years.

2.20pm - Sexual selection and the evolution of men's secondary sexual traits

Barnaby Dixson, Evolution and Ecology Research Centre, School of Biological, Earth and Environmental Sciences, University of New South Wales, AU

Cyril Grueter, School of Anatomy, Physiology and Human Biology, The University of Western Australia, Perth, AU

Karin Isler, Anthropological Institute and Museum, University of Zurich, CH

Paul Vasey, Department of Psychology, University of Lethbridge, CA

Alan Dixson, School of Biological Sciences, Victoria University of Wellington, NZ

Robert Brooks, Evolution and Ecology Research Centre, School of Biological, Earth and Environmental Sciences, University of New South Wales, AU

Striking secondary sexual traits, such as brightly colored "sexual skin", capes of hair, beards, and other facial adornments occur in adult males of many anthropoid primate species. In men, facial shape, beards and

body hair are highly sexually dimorphic, yet whether such masculine traits function as 'badges of status' or enhance sexual attractiveness to women, is strongly debated. Here we present results from comparative research on male ornamentation from 154 species representing 45 genera of New World monkeys, Old World monkeys and apes, including humans, as they relate to mating systems, social structures and habitat types. Multivariate regression analyses, including phylogenetic correction, revealed that species with larger group sizes and multi-level social systems had highest scores for sexual dimorphism in ornamentation. Our analysis suggests that in social systems characterized by larger group sizes and potentially more anonymous settings where individual recognition can be compromised and the need to signal rank and dominance may be greater, selection on ornamentation either as badges of status or attractive signals is stronger. We then present experimental findings from cross-cultural research on the role of facial masculinity and beardedness in ratings of men's attractiveness, social dominance and aggressiveness. Results showed that men's beards are rated as more socially dominant and aggressive by other men but not more attractive than clean-shaven faces by women. These findings will be used to discuss how male-male competition and female choice may have shaped the evolution of men's secondary sexual traits.

2.40pm - Childhood unpredictability and adult attachment: Comparison of two samples from Brazil and Chile (SFA) (LMA)

Rachel Coelho Ripardo Teixeira, Universidade de São Paulo, BR

Ana Fernández Tapia, Universidad de Santiago de Chile, CL

Ana Carnielli Howat-Rodrigues, Universidade de São Paulo, BR

Human development is influenced by factors such as inherited temperament, parenting style, attachment style, personality, and various life history events, that might each contribute to an unpredictability perception of the environment. Perceptions of (un)predictability provide tips on the individual expectations of the resources which are available in the adulthood environment. Despite the continuity between infant attachment and adult

attachment, the latter undergoes ontogenetic recalibration, so that it is possible to predict its outcome. To explore this idea and to compare two different cultures, we present a cross-cultural study in Brazil and Chile. In Brazil, participants were 498 people, 31.3% men, aged 18-72 ($M= 29.64$, $SD= 7.6$). In Chile, there were 135 participants, 41.5% men, aged 18-63 ($M= 27.92$, $SD= 9.5$). Participants completed an online survey containing socio-demographic questions, the Childhood Unpredictability Scale, and the Adult Relationship Attachment Scale. Our hypotheses were that more unpredictability and insecure attachment would be associated with living in a big city, smaller or restructured caring networks, and low education level. In relation to attachment style, we expected that approximately half the sample would have secure attachment, and that more unpredictability would be associated with low scores in closeness and dependence and high scores in anxiety and avoidance. In Chile, we found the majority of the sample with secure attachment, and less than 20% preoccupied, fearful, and dismissing. In Brazil, the results were similar (no statistical difference), with the majority having secure attachment, then preoccupied, but more people with fearful attachment than dismissing. We also found that a smaller or restructured caring network, composed of just one parent or an institution, and a lower educational level, were both associated with more unpredictability and more insecurity. However, there was no difference due to the size of the city. Regarding the third hypothesis, there was a correlation between high unpredictability scores, especially the factors “support” and “resources”, and the attachment dimensions, high anxiety, and less closeness and dependence (Fearful style), with no difference between Brazil and Chile. Participants that perceived their environment as unpredictable also have more insecure attachment. This could mean that people experiencing more unpredictability throughout development also developed a model of other people that is more insecure. But we could also expect that people with an insecure attachment style have a tendency to amplify (dramatic) memories of unpredictability, particularly in the case of the preoccupied style. We suggest that both processes are happening simultaneously and feeding back on each other, especially because others styles were affected by unpredictability. In conclusion,

our research shows the importance of environmental unpredictability for the development of particular attachment styles. We suggest longitudinal studies to better understand this correlation.

3.00pm - Paternal investment: determinants of father's involvement with their children (SFA) (LMA)

Carina Bossardi, Universidade Federal de Santa Catarina, BR

Mauro Vieira, Universidade Federal de Santa Catarina, BR

Lauren Gomes, Universidade Federal de Santa Catarina, BR

Simone Bolze, Universidade Federal de Santa Catarina, BR

Maria Crepaldi, Universidade Federal de Santa Catarina, BR

Due to the cultural and social changes in modern family dynamics, the role of the father has been undergoing significant changes. Accordingly, more and more fathers have invested time and resources in childcare and interaction (paternal investment) with their children and this may have significant repercussions throughout the development of the child. Aside from phylogenetic and ontogenetic influences, paternal behavior may vary depending on specific features such as personal characteristics (e.g. age and education), characteristics of the child (e.g. age and sex) and marital relation (relationship with the female partner). Therefore, we sought to identify the relationship of these determinants with fathers' involvement in two-parent families with children aged 4-6. The study included 150 fathers who had been living with the child and his partner for at least six months. The research instruments were the Paternal Engagement Questionnaire (QEP) and the Questionnaire of Marital Relationship (Floreal). The questionnaires were administered in an interview during a home visit. Correlational and regression analyses confirmed that the determinants may explain variation in paternal behavior and indicated that fathers' involvement in general and specific terms (emotional support, basic care, physical play, openness to the world, discipline, household chores and evocations) tends to increase according to the level of fathers' education and marital harmony, and to decrease depending on the age and sex of the child. Paternal age and education seem to be predictors of physical

play performed by the father (younger and better educated fathers are more involved). The age and sex of the child also predict paternal behavior (greater overall involvement with younger children; higher basic care with boys and with younger children). Finally, quality of the marital relationship is also associated with paternal involvement: greater harmony predicts fathers' general involvement and emotional support. Multivariate linear regression involving these determinants explained 34.4% of the variation in overall paternal involvement, 33.6% of the variance in emotional support, 31.7% of the variation in basic care, and 33.3% of the variation in physical play. It is concluded that these and other studies on paternal involvement can enhance understanding about the existing variations in the behavior of the father with the children. It is important to consider the context in which these behaviors are developed, including cultural influences. The paternal involvement has been changing over the past decades and researchers should devote themselves to deepen their knowledge about the subject, as well as the impact of these behaviors on the development of the child and the family.

**3.20pm - Male intrasexual competition prompted by unfamiliar others:
An observational study (SFA)**

Amy Webb, Saint Mary's University, CA

Maryanne Fisher, Saint Mary's University, CA

A dominant force in sexual selection is the amount of parental investment each sex allocates towards their offspring. The sex which commits more parental investment tends to be more selective with whom they mate. In turn, the sex that invests less in offspring should compete more intensely to access high-investing members of the opposite sex. In humans, females allocate the most energy during reproduction and are more critical in the mate they select. The current study examined the behaviour of distributing resources, which females find attractive in a long-term mate. Panhandlers (beggars) were used as the 'unfamiliar other' as they are able to elicit both anxiety and generosity in others. It was hypothesized that men would donate items more often in the presence of a woman compared

to while walking alone or in the presence of another male. Naturalistic observations were recorded by ethogram along pedestrian busy streets in urban Atlantic Canada. Four condition groups were identified containing 50 participants each: 1. women walking alone, 2. men walking alone, 3. men walking with another man, and 4. men walking with a woman. The results indicated that men donated items significantly more often while walking in the presence of a woman compared to either walking alone or with another man. Having a female condition group benefited the research by adding insight into the natural behaviours of women around unfamiliar others. Support for the hypotheses indicates the presence of male intrasexual competition for females. This finding offers new avenues in which to test sexual selection, including further exploration of additional intrasexual competition strategies for both sexes in relation to unfamiliar others.

3.40pm - Coffee

3.45 - 6.15pm Poster session (for Abstracts, see Page 75).

Thursday 7th August, 2014

9.00am - Plenary

The cultured chimpanzee: nonsense or breakthrough?

William McGrew, Division of Biological Anthropology, University of Cambridge, GB

Human culture is universal but is it unique? The answer depends largely on how one defines the phenomenon and the methods used to study it. Chimpanzees (along with bonobos) are *Homo sapiens*' nearest living relations, and their ethology and ecology in nature and in captivity are now well-known. As such, these great apes may serve as models in reconstructing humanity's evolutionary roots in the last common ancestor of the diverging lineages of hominines and African apes. Establishing the presence of culture in any wild organism, without the controls of the laboratory, is a challenge. The same is true of doing non-verbal ethnography, much less ethnology. Material culture (e.g. tool use) has proved to be more accessible than non-material culture (e.g. social grooming), but both have been documented in apes. Further developments in cultural primatology likely will involve nuanced variation, ethno-primatology, cultural ecology, archaeology, and ingenious and imaginative operationalising of complex cultural processes, such as conformism.

10.00am - Coffee

10.30am - General talks III

10.30am - Individual differences, homophilic assortment, and the encryption theory of humor: A systematic review

Thomas Flanson, University of Utah, US

Clark Barrett, UCLA, US

The encryption theory of humor proposes that one of the means by which people develop their social networks is assortment with the most compatible

peers by signaling similarity in locally variable personal features through humor. Because a necessary component of humorous production is the presence of multiple, divergent understandings of speaker meaning, some of which are dependent on shared access to implicit information, only those listeners who share access to this information can “decrypt” the implicit understandings, which further entails the inference that the speaker has similar access. This provides a channel for the honest signaling of personal features, which is proposed to have evolved to aid homophilic within-group assortment for long-term interaction partners such as friends or mates. A consequence of this hypothesis, therefore, is that people with different knowledge, personalities, attitudes, values, or experiences should exhibit predictable differences in their sense of humor. Rather than treat sense of humor as a qualitatively variable trait, where some have a “good” sense and others a “bad” one, this model treats humor as an index of individually varying features, and expects widespread variation in humor preferences, styles, and products, reflecting the local variation it was designed to signal. Further, similarity in sense of humor should be correlated with homophilic assortment outcomes, such that people who find the same things funny should also exhibit similarities in locally variable traits, and these similarities should be associated with preferential assortment behavior. Prior and ongoing research has shown such associations between local variation in propositional knowledge, humor preferences, and actual assortment. The long history of humor studies, however, has also shown this association with local variation in personal features such as personality, attitudes, and values, albeit without an encryption framework to understand the association. This talk will review a wide array of prior studies on individual variation in sense of humor and how it relates to variation in these other features, demonstrating the close relationships between interpersonal variation and sense of humor, both in terms of production and appreciation. Further, the relationship between similarity in sense of humor and homophilic assortment, which has been found in a wide array of contexts, will also be assessed. Overall, this systematic review of research on variation in sense of humor and its relationship to individual differences and homophilic assortment provides

wide-ranging support for the encryption theory of humor.

10.50am - The grey area surrounding the red effect on attractiveness

Thomas Pollet, Department of Social and Organizational Psychology, VU University Amsterdam, NL

Leonard Peperkoorn, Department of Social and Organizational Psychology, VU University Amsterdam, NL

S. Craig Roberts, School of Natural Sciences, University of Stirling, GB

In recent years, several researchers have argued that humans might be affected by the presence of color cues in opposite-sex conspecifics. The theoretical framework put forward in Color-in-Context theory (Elliot & Maier, 2012) is the leading theoretical framework formulated by social psychologists to understand effects of color in mate choice. Based on this theory, it has been argued that red would enhance attractiveness ratings. Here we present 3 studies failing to support this prediction and a meta-analysis indicating that the current evidence for a red effect is weak at best. In Experiment 1, 206 male students rated attractiveness of a woman in a photograph. The experiment had a 2 (short term vs. long term scenario) x 3 (white vs. red vs. black t-shirt) between-subject design. There was no interaction effect but only a suggestion of a weak main effect, with the woman in a white shirt being rated as slightly more attractive than the woman in a black or red shirt. Experiment 2 was an online replication of Experiment 1 ($n=191$ men). There were no significant interaction or main effects (all $p>.6$). This prompted us to directly replicate one of the earlier studies (Pazda et al., 2012: experiment 1a) to examine the effect of red on female attractiveness (Experiment 3). Using a sample size 17 times as large ($n=433$ vs. $n=25$), we failed to replicate the original study (Cohen's $d = -0.12$, 95% CI: $-0.31, 0.07$, original study: Cohen's $d = 0.86$, 95% CI: $0.03, 1.68$). Finally, we conducted a meta-analysis covering all studies on red and attractiveness ratings (27 papers with 83 effect sizes). Overall there was suggestion of a weak red effect ($r=0.23$, 95% CI: $0.16, 0.3$). However, there was also suggestion of publication bias, leading to a strongly reduced estimate of effect size ($r = .11$; 95% CI: $0.04, 0.19$).

Further analyses using moderators in meta-regression, suggested that the red effect is absent when contrasted to black ($r=0.03$, 95% CI: -0.02, 0.08). The red effect is also significantly stronger when the background is manipulated ($r=0.33$, 95% CI: 0.22, 0.43) rather than the clothing ($r=0.17$, 95% CI: 0.09, 0.25). There was no suggestion that the population (men rating women or vice versa) or outcome measure influenced effect size. Finally, it seems that there is a potential laboratory effect with studies from one laboratory finding substantially stronger effects ($r=0.34$, 95% CI: 0.25, 0.43) than research from other laboratories ($r=0.11$, 95% CI: 0.01, 0.20). We discuss pitfalls and avenues for future research on red effects and attractiveness.

11.10am - Facial masculinity concepts reconsidered: a tribute to biology

Linda-Mealey-Award Winner 2012

Sonja Windhager, Department of Anthropology, University of Vienna, AT
Philipp Mitteroecker, Department of Theoretical Biology, University of Vienna, AT

Katrin Schaefer, Department of Anthropology, University of Vienna, AT

Masculinity is an important and omnipresent trait in face research. Different approaches were applied to quantify phenotypic masculinity in order to study its relationship to various behaviors and social perception in humans. In this presentation, we compare the most prevalent concepts and discuss their biological interpretation. Furthermore, facial allometry (i.e., the dependence of shape on size) is entered into this comparison. These concepts include perceived masculinity, hormone-mediated masculinity, average morphological sexual dimorphism, linear discriminant function, and allometric versus non-allometric sexual dimorphism. Their quantification and facial patterns will be exemplified using a sample of standardized frontal photographs of 21 women and 24 men (aged 20-34 years) from Austria. Seventy landmarks and semi-landmarks were digitized and subjected to a Generalized Procrustes Analysis. The male faces were rated for perceived masculinity on a continuous scale ranging

from “feminine” to “masculine” by 91 women of the same age range as the stimuli. The regression of facial shape on perceived masculinity depicted the known pattern: men perceived as more masculine have relatively wider faces with a wider nose, thinner lips and a more prominent lower face. Based on sexual dimorphism (the difference between average female and average male shape), in contrast, maleness was associated with thicker and lower eyebrows and a more angular jaw in addition to the thinner lips and the more prominent lower face. The individual scores along this vector correlated positively with perceived masculinity ($r = 0.26$). The decomposition of sexual dimorphism in an allometric and a non-allometric component then showed that perceived masculinity was more closely related to the allometric (= size-dependent) pattern. The shape pattern associated with the discriminant function correlated least with perceived masculinity ($r = 0.14$) and resembled the pattern of sexual dimorphism to some degree. This analysis shows that the different approaches should not be considered interchangeably. How similar or different their results are will depend on the empirical distribution of male and female phenotypes. And only the research question at hand can determine their appropriateness with regard to the biological meaning. Quantifying the influence of biological factors such as size, hormones, and body composition, on perceived masculinity via facial shape is a promising direction of research in order to understand social behavior and the evolution of human mate choice.

11.30am - The impact of the digital divide on face preferences in El Salvador (SFA) (LMA)

Carlota Batres, School of Psychology & Neuroscience, University of St Andrews, GB

David Perrett, School of Psychology & Neuroscience, University of St Andrews, GB

Previous studies on mate preferences have found that online and laboratory experiments yield similar results with samples from developed countries, where the majority of the population has internet access. No study has

yet explored whether the same holds true in developing countries, where the majority of the population does not have internet access. This gap in the literature has become increasingly important given that several online studies are now using cross-country comparisons. We therefore sought to determine if an online sample is representative of the population in the developing country of El Salvador. In studies of Hispanic men and women aged 18-25 ($N_1 = 152$, $N_2 = 45$), we tested facial masculinity and adiposity preferences by collecting data in person as well as online. Our results showed that there were no differences in preferences between people from El Salvador with internet access, whether they were tested online or in person. This provides evidence that testing style does not bias preferences among the same population. On the other hand, our results showed several differences in preferences between people from El Salvador with internet access and those without internet access. More specifically, we found that those with internet access preferred more masculine men, more feminine women, and women with lower facial adiposity. This suggests that online studies may provide a distorted perspective of the populations in developing countries. Our finding that adiposity preferences in female faces were higher among people without internet access is consistent with previous literature that has found that heavier figures are considered more attractive in poorer and rural areas. Contrary to our expectations, however, we found that masculinity in male faces was considered more attractive by people with internet access. Past research has suggested that risks to health from disease or violence may be responsible for differing levels of masculinity preferences in male faces. Neither interpretation holds for face preferences within El Salvador since we found that participants without internet access prefer more feminine male faces even though health risks and homicide rates are both higher in areas of El Salvador where internet is less accessible. A possible explanation for our findings is that the level of harshness in the environment may be influencing face preferences since we found that those without internet access appear to face a harsher environment. For instance, we found that those without internet access were less likely to have access to running water in their home. One study found that when women are primed with pathogen

prevalence they prefer good-gene traits, such as ‘muscularity’, but when they are primed with resource scarcity they prefer good-dad traits, such as ‘nurturing’. Our finding that those without internet access preferred more feminine men, thus, provides some preliminary evidence that resource scarcity may influence mate preferences more than pathogen prevalence in environments with both threats.

11.50am - The role of personality and nonverbal behavior in face-to-face dyadic negotiation

Marc Mehu, Department of Psychology, Webster Vienna Private University, AT

Psychological and ethological theories postulate that human social signals function to help individuals manage their social environment by a) influencing the internal states and behavior of conspecifics to the signaler’s own advantage, and b) by communicating socially adaptive traits, dispositions, and attitudes (for example cooperative or competitive dispositions and intentions). It follows that communicative style depends on a complex interaction between the signaler’s tendency to adopt a particular social strategy (e.g. pro-social vs. competitive), the benefits that he or she can gain in a particular situation, and the perceived goals and strategies of other individuals present. In this study, we investigate individual differences in communicative style and its association with interactive consequences (monetary benefits). Participants were engaged in a dyadic, mixed-motive negotiation that involved both cooperative and competitive aspects. Their nonverbal behavior (gaze, posture, facial, and vocal expressions) was recorded along with measures of testosterone and cortisol levels taken both before and after the interaction. Self-reports of trait dominance and affiliation were also obtained and provided measures of individual differences in social strategies. Results indicate that the relationship between expressive behavior and monetary outcomes depends on self-reported dominance, conversational context (that is, in the present case, associated with personal goals), and the partner’s expressive behavior during the interaction. More precisely, frequency and

intensity of facial movements in the eyebrow region displayed in competitive contexts by dominant individuals are significant predictors of negotiation outcomes (i.e. whether the person is likely to win the negotiation). Expressivity of smiling displayed during the first minutes of the interaction is associated with joint gains (combined contributions to the negotiation outcome) whereas baseline and reactive levels of testosterone showed positive correlations with individual gains. These results will be discussed in relation to individual differences in social strategies and their interactive consequences for social adaptation. Finally, I will address the relevance of multi-level measures (e.g. measures based on communicative signals and hormone levels) for psychological assessment.

12.20pm - Lunch

2.00pm - General talks IV

2.00pm - Life history variation in reproductive strategies is intuitive across cultures

Daniel Kruger, University of Michigan, US

Maryanne Fisher, Saint Mary's University, CA

Psychological research has recently been criticized for its extensive use of American university students to make broad claims about human psychology and behavior. This challenge is especially pertinent for claims of evolved psychological architecture. A broader base of participants is recommended because there is substantial variability in experimental results across populations and traditional psychology pool participants may be outliers in comparison with the rest of the species. Previous research demonstrates that North American women and men can identify male and female characters with fast (high mating effort, low parental investment) and slow (low mating effort, high parental investment) life history strategies, make accurate predictions about their behavioral tendencies, and respond to them in ways that would facilitate participants' own reproductive success. The current project validates the understanding

of fundamental life history dimensions across a wide range of cultures. Participants (current N = 982) from Eastern and Western Europe, Central and South America, South and East Asia, and the Middle East read translated descriptions of male characters from novels by Sir Walter Scott and female characters from novels by Jane Austen. Participants rated the likelihood of characters exhibiting behaviors associated with fast or slow female and/or male reproductive strategies, expressed preferences for interactions with characters, and matched characters to actual behaviors in the novels. Results for each language replicated patterns from North American participants. Ratings for both female and male characters clustered into two dimensions, mating effort and parental investment, and participants accurately identified characters' strategies. This study provides evidence for the comprehension of life history dimensions across broad portions of the human population.

2.20pm - Modern human adaptiveness: behavioural or theoretical mismatch?

Linda-Mealey-Award Winner 2012

Gert Stulp, London School of Hygiene and Tropical Medicine, GB

Evolutionary psychology argues that there is a fundamental mismatch between our evolved psychological adaptations and modern human lifestyles. This mismatch is said to explain why people in industrialised society no longer behave in ways that tend to maximise their fitness. As a result, evolutionary psychologists rarely study people's actual behaviour in relation to their reproductive success, but instead look for evidence of psychological mechanisms that would have maximised fitness in ancestral populations. Human behavioural ecologists, in contrast, do study the current adaptiveness of behaviour, but even here, there tends to be an assumption that only people living in traditional small-scale societies conform to evolutionary predictions. In modern industrial society, the prevailing view is that people no longer maximise their fitness. Here, I question this fundamental assumption of a mismatch between past and present, and between modern and traditional societies, and argue that

we should treat the (mal)adaptiveness of modern human behaviour as an open empirical issue. This involves a consideration of the theoretical foundations and methods of evolutionary psychology, including the strategy of inferring function from design; the way in which we analyse the present to draw conclusions about selection in the past; arguments concerning the pace of evolution, the influence of culture and history, and the impossibility of clearly differentiating 'evolved' from 'learned' mechanisms; the use of comparative data to generate hypotheses about our own species; and the issue of whether psychological modules inevitably give rise to a 'stone age mind' in a modern body. In addition, I consider whether part of the reason for the ongoing assumption of a mismatch between modern environments and human psychology arises because of a mismatch between the theoretical sophistication of recent evolutionary psychological theorising and the relative lack of such sophisticated thinking among the empirical work conducted in this area. Finally, I consider the issue of a mismatch between modern small-scale societies and industrial societies in the degree to which they maximise fitness and hence conform to evolutionary predictions. I argue that if a mismatch is apparent, it will be more likely due to a mismatch on the timescale of individual development than to a mismatch on the basis of deep evolutionary time. Moreover, I argue that more attention needs to be paid to wealth distribution, population dynamics, and energy usage in modern society, within a life history framework, along with a consideration of the rate at which cultural change influences individual behavioural strategies.

2.40pm - Women's tuning of preferences for masculinity in 3D faces (SFA) (LMA)

Iris Holzleitner, School of Psychology & Neuroscience, University of St Andrews, GB

David Perrett, School of Psychology & Neuroscience, University of St Andrews, GB

Previous work has established various factors that impact women's facial

masculinity preferences in men, such as individual differences in self-perceived mate value and relationship context. Many of these studies have used 2D stimuli, and asked participants to choose the more attractive from a pair of feminized and masculinized faces, or allowed participants to optimize the level of masculinity of faces in an interactive slider task, usually within a range of -50% to +50% of masculinity. We found recently that facial masculinity in a student population (20.3 ± 1.8 years) on a scale anchored to the average female (-100%) and male (+100%) face shape naturally ranged between -42% and +208%. Thus, here we investigated 1) how women's preferences for men's masculinity in 3D faces change for a wider range of masculinity levels, 2) if the shape of these tuning curves is affected by individual differences, 3) whether preferences from ratings of 3D faces concur with optimal preferences in an interactive slider task, and 4) whether findings using 3D faces replicate effects established using 2D faces. We manipulated four 3D male composite faces towards lower (-100%) and higher (+200%) facial masculinity in 50% steps, and asked women to rate these faces for their attractiveness. In addition, women were asked to optimize four composite faces' attractiveness as short- and long-term partners along the same masculinity axis in an interactive slider task. Analysis of a preliminary sample of 85 white, heterosexual women revealed a curvilinear relationship of women's ratings of attractiveness to men's facial masculinity, with a peak in attractiveness at +100% masculinity and aversion to very low and very high levels of masculinity; a strong correlation of the preferred level of masculinity in the rating and the interactive slider tasks; and a significantly stronger preference for masculinity in a short- compared to a long-term relationship context in the interactive slider task. The average masculinity preference found using this interactive task based on 3D facial masculinity was significantly higher (+87%) than that produced in a 'control' condition using conventional 2D facial masculinity (+42%). While we are currently increasing our sample size to allow for a more conclusive analysis regarding effects of individual differences, our preliminary findings suggest both similarities and incongruities in masculinity preferences as tested with 2D and 3D faces. Using 3D masculinity transforms, we replicated previously found effects

of relationship context, but found a surprisingly high overall preference for masculinity. We cannot rule out at this point that this high preference might be partially caused by a range effect, as we presented participants with a much wider, asymmetric range of masculinity compared to previous studies. Yet, the range we used is in some sense more representative of the observed range in young men's appearances. We suggest that masculinity and its visual manipulation may manifest differently in 3D and 2D images of faces. Implications for mate choice studies will be discussed.

3.00pm - Sex differences in jealousy: not an artifact of attachment style in a novel population

Ana Fernandez, Universidad de Santiago de Chile, CL

Romantic jealousy is an adaptive emotion that has been hypothesized to secure reproductive liaisons in humans. A great amount of evidence has supported the notion that sex differences in the adaptive problems men and women faced throughout the Pleistocene underlie the kind of situations that presently trigger jealousy differently among the sexes: with men being more distressed than women by sexual infidelity situations that threaten paternal certainty and its associated fitness; and with women being more distressed than men by emotional infidelities which risks the loss of parental investment in the common progeny, diminishing female fitness. Nevertheless, the sexual differences observed in the evocation of jealousy universally and cross-culturally have been interpreted recently as an artifact of proximate circumstances like socialization, and cultural influences, which shapes the masculine mind to be likely to develop a dismissing avoidant relational style, while the feminine relational style is more likely to conform to anxious attachment. Thus, in the present research I test this assumption with two types of sample of a similar reproductive age in Chile (singles $n = 149$; and stable young couples $n = 122$, couples = 61), assessing relational attachment with two different methods (measures in Bartholomew and Horowitz, 1991; Collins, 1996), while also evaluating the kind of infidelity that is more distressing to men a women. The results of the analysis show the predicted sex differences

in both samples, but in the couples sample asymmetries on jealousy are more pronounced, possibly pointing to a decreased idealization of romantic engagements in this population. Similarly, the results of regression analyses, entering sex and attachment style as predictors of the kind of infidelity that is more distressing, does not support Levy & Kelly's proposition that relational attachment may underlie sex differences in jealousy, with sex being the only significant predictor of the jealousy asymmetry. The discussion addresses the robustness of sex differences in jealousy considering the adaptive problems that our species faced throughout evolution, which explain that over time and different cultural contexts there are significant amounts of variance in the kinds of adaptive challenges men and women respond to, which cannot be attributed to attachment style or other proximate explanations, but which are clearly linked to ultimate evolved causes of affective sex differences, related to adaptive problems that enhance reproductive fitness by sex.

3.20pm - Evolution collides with economics: how protein price is shaping the obesity crisis?

Robert Brooks, Evolution & Ecology Research Centre, University of New South Wales, AU

Barnaby Dixson, Evolution & Ecology Research Centre, University of New South Wales, AU

Michael Garratt, Evolution & Ecology Research Centre, University of New South Wales, AU

The current global obesity crisis appears to be far more a consequence of increased energy intake than of falling energy expenditure. But what is behind the increase in energy intake? We number among those scientists who claim that burgeoning obesity is due to a collision between our evolved nutritional physiology and our contemporary economic circumstances. We combine recent developments from two different areas of nutrition research: the study of food prices in relation to energy content and Simpson and Raubenheimer's "Protein Leverage Hypothesis" (PLH) that an evolved propensity to regulate protein intake exerts powerful leverage

on overall energy intake, including from carbohydrates and fats. We first present results of an analysis of supermarket food prices in the USA and Australia to show that increasing overall energy content only modestly raises the cost of foods, but that higher food prices are associated with higher protein content and lower carbohydrate content. We then show that the different costs of protein and carbohydrates may bias consumers towards high carbohydrate diets and excessive energy intake. Last, we analyse data on food prices, obesity, economic measures and social welfare across 182 countries to show that complex interactions between the prices of protein and carbohydrate-derived energy are associated with national obesity levels.

3.40pm - Coffee

4.00 - 6.00pm - Symposia

Symposium I: “Parental investment in contemporary context”

Symposium II: “The scented ape: communication, perception and application”

Symposium I - Main Lecture Hall, 4.00 - 6.00pm

Parental investment in contemporary context

Chair

Mauro Luís Vieira, Department of Psychology, Universidade Federal de Santa Catarina, BR

Presenters

Rosana Suemi Tokumaru, Universidade Federal do Espírito Santo, BR

Mauro Luís Vieira, Universidade Federal de Santa Catarina, BR

Julia Scarano de Mendonça, Universidade de São Paulo, BR

Angela Donato Oliva, Universidade do Estado do Rio de Janeiro, BR

Symposium overview: Parental investment is a classic issue in Ethology and Evolutionary Psychology. Parents from animals, mainly mammals

species devote considerable periods of time, resources and energy, to raise their offspring. In the specific case of human beings in the contemporary context, direct and indirect care practices may be expressed differently in specific contexts and are associated with various environmental, personal, social and cultural variables (for example: social class, background, differential social support available according to the sex of the child, material conditions, presence of other children, children's health, parental age and reproductive capacity, family history, etc). Thus, this symposium aims to present, by means of empirical data and theoretical reflections, themes related with parental investment by researchers with significant experience in the area. The first presentation addresses the relation between different factors that affects and mediates parental and alloparental investment according to Trivers' Parental Investment Theory. The second presentation is related to characterization and analysis of investment and involvement of mother and father with their children. The third presentation focuses on observations of paternal investment in the context of postpartum depression. Finally, the last presentation is on the relation between empathy, parental investment and child development. The symposium has a heuristic value from the evolutionary perspective, which allows us to think about the different dimensions of parental investment, integrating phylogenetic and ontogenetic history. Furthermore, this theoretical perspective considers also the ecological, social and cultural contexts in which individuals are inserted.

Costs, benefits and cues to child care

Rosana Tokumaru, Universidade Federal do Espírito Santo, BR

The heavy dependence of children on the care of the adults that surround them is a main feature of human development. Not only the biological parents, but other related and even unrelated adults can exhibit childcare. On the other hand, both parents and other adults can be aggressors of the children with whom they live. We investigated the modulating factors of parental and alloparental investment as a function of structure of cohabitation, relationship between caregiver and infant, caregiver sex,

resources availability, quality of family life and closeness between child and caregiver. In general, all factors affected parental and alloparental investment as expected by Trivers' Parental Investment Theory. However, we also found relationships among these variables and mediating effects of another variable, the mothers' future expectation, on parental investment. These results are discussed in the light of the predictions of Trivers' Parental Investment Theory and the possible relationship between this and the Theory of Life Cycles.

Characterization of investment and involvement of mothers and fathers to with their children

Mauro Vieira, Universidade Federal de Santa Catarina, BR

According to evolutionary theory, parental investment is everything that parents do that will have an impact on the survival of their offspring. There may be variations in the amount of parental investment and care, depending on the sex of the genitors. In the specific case of humans, investment and involvement will also vary according to the characteristics of development of sons and daughters and of ecological, social, historical and cultural conditions of immediate environment. Therefore, the aim of this presentation is to characterize and analyze aspects of investment and involvement of mothers and fathers. Our studies have demonstrated that mothers reported more engagement with children (direct and indirect forms) than fathers in situations involving children with typical and atypical development. Furthermore, while the mother carries out the most basic care, the father plays the role of disciplining the child. We have found that the father is more involved than the mother in physical play. On the other hand, the principal aspect of both maternal and paternal involvement is the emotional support and that beliefs and values are important factors that modulate parental investment and involvement in family of modern societies.

Paternal investment in the context of postpartum depression: an observational study

Julia de Mendonça, Universidade de São Paulo, BR

Vera Bussab, Universidade de São Paulo, BR

When mothers present postpartum depression (DPP) they are less available to their children. In these situations, it is possible that other members of the social group may increase their participation in the child's care to guarantee their well-being. In fact, PPD has also been understood as an evolved ecological adaptation to a social environment poor in social support. The main function of PPD may be to gather social support, especially from the partner. The father's role in the context of postpartum depression is still poorly understood. Some authors suggest that fathers play a moderator role, getting closer to their children when their partners present postpartum depression as a way to compensate the detrimental effects of mother's depression on child development. The objective of this present study was to understand possible buffering mechanisms by fathers towards children in the early years of their life when mothers presented postpartum depression. Analyses show that father-child dyads were clearly more involved when mothers presented postpartum depression, after controlling for father's depression. Significant results were found in two of the four observational categories. Higher scores on mother's depression at 8 and 36 months were positively correlated to higher father-child visual attunement at 36 months. In addition, a worsening of mother's depression over the years (from 3 to 36 months) correlated positively with closer father-child physical proximity at 36 months. These results will be discussed in relation to the evolutionary hypothesis of PPD and Trivers' Parental Investment Theory.

Empathy, mirror neurons and parental investment: a relation to investigate

Angela Oliva, Universidade do Estado do Rio de Janeiro, BR

Vera Bussab, São Paulo University, BR

Empathy is an essential ability for living in groups. Theoretical and empirical revisions suggest that high levels of empathy contribute to better interpersonal interactions. Empathy could play a role in parental

investment given that it is a type of interaction. Despite the fact that parents have a strong propensity for taking care of their offspring, interactions presuppose bidirectional effects. More understanding of the other and the better the other is able to perceive the one, the better for the interaction. An evolutionary view of human parenting supposes that fathers and particularly mothers devote substantial time, resources, and energy to rearing their children. The point is when this care can also be expressed through empathic behaviors. The aim of this presentation is to discuss, from a theoretical point of view, the role that empathy can play in parental investment across both parents and children. Empirical support in studies based on neuroscience is introduced in the form of a special group of cells: the mirror neurons. They were discovered in the 1990's in the premotor cortex of chimpanzee's brain. These neurons discharge both when the animal performs a goal-oriented action toward an object and when it sees the movement of grasping in another, but they do not discharge during the observation of pantomime (when someone move arms pretending to grasp an imaginary object). Among others' characteristics, the mirror system allows one person to infer partially hidden actions (that occur behind a screen, for example). These neural mechanisms, in an evolutionary point of view, could have been selected by an adaptive advantage. All beings that live in groups have to deal with the problem of understanding or have access to the other`s mind. This capacity of "reading" the others` mind (by observing their behaviors and inferring their intentions) is a biological trait and makes inter-subjectivity possible, thus promoting interactions. For example, it is not easy for children to learn the complex social mechanisms involved in human groups interactions. In general, parents have a strong tendency to align their behavior to their offspring. It is an automatic process that seems to promote in children the development of the ability to recognize and share emotions, such as self-regulation, self-awareness and awareness of others. We can speculate that parents that learn and practice more empathic skills towards to their children will improve infant development, because empathy could promote or facilitate bonding and healthy relations in adulthood.

Symposium II - Tinbergen Auditorium, 4.00 - 6.00pm

The scented ape: communication, perception and application

Chair

Jan Havlíček, Department of Zoology, Charles University, Prague, CZ

Presenters

S. Craig Roberts, School of Natural Sciences, University of Stirling, GB

Jitka Fialová, Department of Philosophy and History of Science, Charles University, Prague, CZ

Agnieszka Sorokowska, Institute of Psychology, University of Wrocław, PL

Jan Havlíček, Department of Zoology, Charles University, Prague, CZ

Karl Grammer, Department of Anthropology, University of Vienna, AT

Elisabeth Oberzaucher, Interdisciplinary Research Center for Technology, Work and Culture, University of Klagenfurt, AT

Symposium overview: Humans are traditionally depicted as a microsmatic species, suggesting that olfaction plays a minor role in various areas of our lives. However, humans emit numerous aromatic compounds from their bodies and adorn both themselves and their environment with extrinsically sourced aromatic compounds. The last two decades have witnessed rapidly growing interest in the possibility that the outcomes of various social interactions are affected by odour. The goal of this symposium is to highlight several areas of human chemical communication and link them to the major theoretical frameworks such sexual selection theory, evolution of signalling or dual inheritance theory. It will include presentations and debate on the social significance of major axillary constituents (Roberts), communication of affective states through body odours (Fialová), effect of odours on formation of first impressions (Sorokowska), interaction between body odour and perfume (Havlíček), sex differences in odour perception (Grammer) and psychological effects of scented environments (Oberzaucher). Studies into human semiochemistry are inherently transdisciplinary including analytical chemistry, microbiology and various branches of psychology which pose a serious challenge to researchers to understand this vast complexity. We therefore also aim to briefly introduce

methods used in the relevant fields. A panel discussion following the main talks will focus on the conceptual and theoretical aspects related to chemical communication and its promise for stimulating further ethological inquiry.

Androstenes in human axillary odour reveal mate availability, not mate quality

S. Craig Roberts, School of Natural Sciences, University of Stirling, GB

Jan Christensen, Department of Plant and Environmental Sciences, University of Copenhagen, DK

Alice Murray, School of Natural Sciences, University of Stirling, GB

Jan Havlíček, Department of Zoology, Charles University, Prague, CZ

Patrizia d'Ettorre, Laboratory of Experimental and Comparative Ethology, University of Paris 13, FR

Body odour influences human mate preferences, but we do not know the chemical basis of such effects. However, one possible candidate is the family of 16-androstene compounds, which are known to produce physiological and behavioural effects in humans, as well as in other mammals. In our study, we tested whether individual variation in expression of androstene compounds predicts variation in other phenotypic indicator traits, but found no evidence that they predict mate quality. However, individual odour profiles were associated with mated status, with odours comprising relatively high proportions of androstenols and androstenones and low proportions of androstadienones being characteristic of unpaired men. In perceptual tests, axillary odours characteristic of unpaired men were preferred over odours characteristic of paired men, and artificial mixtures mimicking odour of unpaired men induced more proceptive responses in women. Our results suggest that androstenes reveal mating relevant cues of a different kind to that previously believed.

Perception of emotion-related body odours in humans (SFA)

Owen Aldis Award Winner

Jitka Fialová, Faculty of Science, Charles University , CZ
Jan Havlíček, Department of Zoology, Charles University, Prague, CZ

Many socially living species are able to perceive chemical cues to the emotional states of their conspecifics. Studies show that humans are to some extent able to recognize, distinguish and judge hedonic quality of odours of other individuals who have been experiencing various affective states predominantly in fear, happy or stressful contexts. Unfortunately, it is often difficult to identify the specific affective contexts in which the odour has been sampled. Furthermore, in the following studies it was found that exposure to odour samples collected in stressful situations affect cognitive functioning and behaviour (e.g. startle response and level of anxiety increase; higher risk-taking behaviour or sensory bias in the perception of another person) of people exposed to such odours, although individuals may not be aware of what the odour refers to or it may be perceived on subliminal level. This is further supported by research into changes in brain activity following perception of odours sampled in various affective states. Moreover, the affective states which may influence body odour include emotions accompanying competition; more specifically, the emotions connected to winning or losing (for instance, pride, sadness etc.). The main aim of this paper is to review the current body of evidence about perception of emotion-related body odours in humans and interpret the findings of the relevant studies, point out the shortcomings in the present research (i.e., using verbal labels of the emotional states; separating and defining particular emotional states) and to suggest new avenues in this promising and fruitful area (e.g. broaden the set of studied affective states and psychophysical responses of individuals exposed to these emotion-related body odours).

Does personality smell? An overview (LMA)

Agnieszka Sorokowska, Institute of Psychology, University of Wroclaw, PL

People are able to assess some personality traits of others based on videotaped behavior, short interaction or a photograph. In a series of

studies, we investigated the relationship between body odor and the Big Five personality dimensions and dominance (the correlations between scent ratings and the self-assessed personality dimensions). In Study I, 60 odor samples were assessed by 20 raters each. In Study II, we compared the accuracy of assessments performed by 150 observers on the basis of facial images and body odor of 50 individuals and we analyzed whether attractiveness of targets influenced the accuracy. In Study III, we investigated whether personality traits might be recognized using olfactory cues in contexts other than male–female interactions. 75 children and 75 young adults rated the personality traits of 50 unknown individuals based on their body odor. In Study IV, we tested differences between assessments based on natural body odor and assessments based on smell of people who were allowed to use any cosmetics based on their daily routine. 100 observers assessed samples of odors of 113 odor donors (every odor donor provided two samples). The main finding of Study I was that in several personality traits, the correlation between self-assessed personality of odor donors and judgments based on their body odor (T-shirt samples) was above a chance level. The correlations were strongest for extraversion (.36), neuroticism (.34) and dominance (.29). In Study II, naive observers assessed neuroticism and dominance at above-chance levels based on samples of body odor, and they assessed extraversion (and in some cases, neuroticism) at above-chance levels based on either facial images alone or body odor and facial images presented together. In addition, facial and body odor attractiveness predicted the targets' personalities and the assessments of their personalities. The results of this study show that the accuracy of personality assessment changes when judges assess different types of stimuli. Interestingly, the assessments of extraversion based on axillary cotton pads were less accurate than the assessments based on T-shirts in Study I. The results of Study III show that both children and adults assess neuroticism relatively accurately, whereas only adults congruently assessed dominance. The most important findings of Study IV were that correlations with self-rated neuroticism were more congruent when raters assessed natural body odor samples than in the condition with use of cosmetics. Ratings of dominance were congruent in both

cases, and assessments of extraversion were incongruent in both parts of this study. This suggests that cosmetics might change the impression about personality conveyed by body odor. In summary, the results of all presented studies suggest that olfaction supplements visual and auditory cues throughout our whole lives, contributing to the formation of the first impression and accuracy of certain personality traits judgements.

The perfume-body odour complex: An insightful model for culture-gene coevolution?

Jan Havlíček, Department of Zoology, Charles University, Prague, CZ

S. Craig Roberts, School of Natural Sciences, University of Stirling, GB

Olfaction is involved in various human social interactions, ranging from mother-offspring attachment to mate choice decisions. Psychological processes underlying such interactions are thought to be shaped by evolution. However, across many human cultures, individuals tend to manipulate their body odour by means of various fragrances and these may significantly affect the outcome of social encounters in a context-specific fashion. Here we employ the framework of dual-inheritance theory, which advocates that cultural practices should be incorporated into the analysis of evolution of human behaviour, to explore cultural means of olfactory signalling such as ethnic and status markers. Further, we review studies showing that perfumes interact with body odour in an individual fashion and that people tend to choose perfumes according to their genetic make-up. This indicates that biologically evolved chemical signalling might operate in concert with some cultural human practices. Finally, we propose two scenarios: i) how culturally based preferences and use of perfume might impact gene frequencies in individual populations, and ii) how evolved cognitive biases might affect selection of scents that are appropriate for body adornments. This, in our view, makes the perfume-body odour complex a potentially insightful model for culture-gene coevolution.

Does the odor of the Maillard reaction lure men to the barbecue? (SFA)

Ina Rennisch, Department of Anthropology, University of Vienna, AT
Julia Ramesmayer, Department of Anthropology, University of Vienna, AT
Anna Schaman, Department of Anthropology, University of Vienna, AT
Karl Grammer, Department of Anthropology, University of Vienna, AT

Whenever a barbecue is lighted it is surrounded by men. Although this seems like common knowledge, very little is known about what is causing this phenomenon. The aim of this study is to gain insight into this topic, if it has a social cause or is induced by evolutionary reasons. We hypothesized that the preference of men handling the barbecue is due to their higher attraction to the typical volatile compounds originating from the Maillard reaction (fried meat). 114 subjects (58 men, 56 women) were asked to describe their feelings when smelling scents of different barbecued meat by rating the intensity of 25 emotional states via the Emotion and Odor Scale (EOS). Additionally, the subjects took a medical olfactory test, consisting of a threshold, discrimination and identification test and were asked about their barbecue habits. The EOS data were evaluated with a factor analysis, which results in five factors of hedonism. The factor values for the different odors enable an analysis of which sex is more attracted by the scent of barbecued meat. We could identify several volatile compounds, which emerge from frying meat which are more appreciated by men than women, although men and women report eating grilled food with equal frequency. In general, men declare themselves of handling the barbecue more often. Men also prefer grilled meat to every other barbecued food, whereas women do not specify which grilled food they like the best. This study emphasizes that men are in charge whenever a grill is involved in food preparation, and this behavior might be triggered by the volatile compounds of fried meat.

Situated Communication - Scented Environments

Elisabeth Oberzaucher, IFZ, University of Klagenfurt Department of Anthropology, University of Vienna, AT
Susanne Schmehl, IFZ, University of Klagenfurt Department of Anthropology, University of Vienna, AT

Multimodal communication integrates communicative tokens exchanged among communicators on different levels of complexity and speed, and through different sensory channels. The meaning attributed to these communicative tokens is affected by the interaction among these tokens. The word 'yes', for example, can adopt a large number of different meanings modulated by e.g. voice parameters, facial and bodily expressions that accompany it. Communicative tokens can convey different meanings depending on who produces them and where. The behaviour settings theory (Barker 1968) emphasizes the importance of situatedness of behaviour, i.e. the specific environment where behaviour is shown. Unfortunately, communication research was not strongly affected by this idea. Olfaction might be the communication channel that is affected most by environmental properties: environmental scents can lead to habituation increasing the threshold for perception. More importantly, odorous molecules might have interactive effects, thus changing the hedonic value, or even the attributed meaning. Scent design is of increasing interest for various businesses, aiming to affect the behaviour of people and customers. Scents are used to create brand identities, to attract customers, and to camouflage undesired odours. We will discuss the potential of scents in affecting human behaviour on a subconscious level and highlight the limitations of scent applications.

Friday 8th August, 2014

9.00am - Plenary

Urban Ethology - How environments shape our behaviour

Elisabeth Oberzaucher, IFZ Interdisciplinary Research Center for Technology, Work and Culture, University of Klagenfurt, and Department of Anthropology, University of Vienna, AT

Evolutionary history has shaped human perception, cognition and behaviour. Specific human responses to surroundings can be linked to evolved adaptations. Biophilia not only leads to a preference for natural elements in landscapes and environments, but affects human wellbeing, health and cognition. Human territorial functioning can be explained by the characteristics of the Environment of Evolutionary Adaptedness (EEA). The EEA is characterised by physical and social parameters and constitutes the environment that shaped our ancestors most in the course of hominid evolution. In the savannah of east Africa, the most relevant resources were water, plants and gregarious animals, with the greatest threats being predators and poisonous animals. Human perception and cognition evolved biases that allowed to adaptively responding to survival-relevant environmental stimuli. Evolutionary aesthetics describe the perceptual biases favoring certain stimulus characteristics that are perceived as attractive because those characteristics were especially relevant for the survival of our ancestors. Present-day urban environments pose a great challenge for us, as city surroundings have little in common with the environments we evolved in. This talk will provide an overview of adaptations to our evolutionary past. I will discuss how they affect our behaviour in urban surroundings, and make suggestions as to how the design of urban landscapes could help increase the well-being of inhabitants.

10.00am - Coffee

10.30am - General talks V

10.30am - Beauty, fashion and the beads; or why do we wear body decoration since at least 100,000 years?

Marian Vanhaeren, CNRS UMR 5199 PACEA, Universite de Bordeaux, FR
Wulf Schiefenhövel, Human Ethology Group, Max Planck Institute for Ornithology, Seewiesen, DE

Why do cultural innovations occur and diffuse? Reconstruction over time of the way in which the earliest known beadworks were worn provides evidence for fashion as a powerful engine of cultural change in human societies since at least 75,000 years ago. Today, personal ornaments are a peculiar and universal feature of human cultures. But when and where did this innovation first appear? And how did it diffuse and change over time? These questions can find answers through (1) archaeological investigations and (2) dating of archaeological layers. Much more tricky are the questions of why humans use personal ornaments and what are the sociocultural processes responsible for their transformation over time? Furthermore, did environment, demography or other factors have an impact on these sociocultural processes? These questions are much more difficult to answer and the answers are sought by researchers in several disciplines. The earliest known beads occur in apparent simple form of either perforated *Nassarius* sp., *Glycymeris* sp. or *Littorina* sp. marine shells in North and Southern Africa and Western Eurasia, covering a time span of dozens of thousands years between ca. 100,000 and 70,000 years ago. The endurance of these early innovations suggests that conformism governs early beadworks and that innovations therein were not perceived as compatible with existing values and practice. However, these early manifestations contrast with the wealth of bead-types seen, for example, in the more recent Upper Palaeolithic of Europe dated to between ca. 40,000 and 10,000 years ago, the ethnographic record, or present day jewelry. To date, no continuity or increasing complexity was observed between the first bead traditions and those developing after ca. 40,000 years ago, making one wonder how to explain such a contrast in evolutionary terms. Detailed analysis of beads and reconstruction of beadwork discovered in a sequence of Middle Stone Age levels at Blombos

cave, South Africa, suggests that: i) changes in fashion occurred from in the beginnings of bead use, and ii) the earliest known beadwork meets the purported innate rules or mechanisms of the quest for beauty, such as the search for novelty and surprise, equilibrium between the parts and the whole, symmetry, repetition, shared emotions and possibly also color play and exaggeration. This indicates that the use of few bead types does not necessarily make one less modern and that bead type is but one factor playing a role in beadworks' codes. Much more subtle elements such as bead arrangement, association, size, number, colour and location on the body structure the meaning projected by beadwork as much as the item categories used as ornaments. Changes introduced in these more subtle elements conform with qualities that determine the success of innovations. Beauty and fashion change in early beadworks also indicates that this phenomenon is a powerful engine of cultural change which ultimately allows explaining the cumulative and incremental picture of innovations seen in the archaeological record.

**10.50am - Cross-cultural differences in inference of aggressiveness:
Testing the Other-Race effect hypothesis (SFA)**

Linda Mealey Award Winner 2012

Vít Třebický, Human Ethology Group, Department of Philosophy and History of Sciences, Charles University, Prague, CZ

Karel Kleisner, Department of Philosophy and History of Sciences, Charles University, Prague, CZ

Tomáš Kočnar, Department of Philosophy and History of Sciences, Charles University, Prague, CZ

Jaroslava Valentová, Centre for Theoretical Studies, Charles University, Prague, CZ

Marco Varella, Institute of Psychology, University of São Paulo, Brazil, BR

Jan Havlíček, Human Ethology Group, Department of Zoology, Charles University, Prague, CZ

Previous research has shown an association between perceived

aggressiveness and actual fighting ability. These results indicate that people are attentive to facial cues linked to fighting ability. However, in other aspects of social perception (e.g. individual identification), it has also been shown that people judge faces of the same ethnicity more accurately. This effect is based on their more frequent experiences with same-race faces, to which our perception is more finely tuned. This phenomenon is referred to as the Other-race effect. Here we tested whether the accuracy of fighting ability perception varies according to the ethnicity of the judged faces. To do so, we employed the results of previous fights among professional Mixed Martial Arts (MMA) fighters of three different ethnic origins. Their facial photos were rated in an on-line based survey. Further, we searched for inter-population differences in accuracy of the inferences by testing raters from three different populations. The sample of male raters consisted of 100 individuals from the Czech Republic, 44 from urban Cameroon (Buea), and 136 from Brazil. The raters were recruited via advertisements on the web sites, social networks, and by personal invitation. A set of stimuli used for ratings consisted of 54 (18 European, 18 African, and 18 mixed origin) portrait photographs of MMA fighters, which are freely accessible on the official web sites of MMA division UFC. For each fighter we obtained data on his number of fights and wins within UFC. Each participant rated the set of all 54 photographs in a random order on a 7-point scale for aggressiveness. The aggressiveness ratings for each fighter were correlated with a proportion of fights won and the total number of fights within UFC, and the resulting correlation coefficients were used as an accuracy score in subsequent analyses. In all samples, the mean correlations between inferred aggressiveness and actual fighting ability were positive and significantly different from chance. Mixed origin fighters were rated as the most aggressive-looking, while African fighters as the least aggressive-looking. Further, in all the three tested populations we found significant differences in rating accuracy according to the fighters' ethnic origin. In Czech and Cameroonian raters, the judged accuracy of the fighters of African origin was the lowest and the highest in mixed origin fighters. On the other hand, Brazilian raters judged fighters of African origin most accurately and mixed origin fighters the least. Contrary

to the “Other race effect” hypothesis, the target fighters’ faces were not judged more accurately in the correspondent target population (e.g. European origin fighters in the Czech Republic). The results suggest that people might be more attentive to cues of threat in out-group members. Despite previous research showing lower sensitivity to facial traits of other ethnicities, the increased sensitivity to out-group members in the domain of judged aggressiveness suggests that reliance on more stereotypic cues may lead to higher accuracy.

11.10am - Hair and Pheromones

Janina Pleyer, Institute of Psychology, University of Innsbruck, DE
Wulf Schiefenhövel, Human Ethology Group, Max Planck Institute for Ornithology, DE

Hair is important. Yet, body hair (including genital hair in men and women) is constantly removed by many people living in industrialized countries (up to 97% in certain groups). Hair removal might just be a temporary fashion trend. Taking care of hair, however, probably is an ancient human trait; it is universal in all known cultures. Evolved physiological, neurobiological and psychological mechanisms are activated (cp. autogrooming and allogrooming). Hair removal produces paedomorphosis by cultural means, thus enhances neoteny, a characteristic feature in the evolution of our species and an important phenotypic element of sexual selection. With hair removal and widespread use of deodorants, humans remove their sexual odour (“pheromones”). People become ‘invisible’ from an olfactory point of view. This, most likely, will have effects on a person’s sexual and reproductive life. Two studies were conducted. A qualitative one (n = 65) aimed to understand the various reasons and motives for hair removal as well as the aesthetic perception of naked, hairless skin. Three groups of people were interviewed: the clientele of waxing studios, nudists, and people who do not remove any body hair. The data were processed with qualitative content analysis (QCA) according to Mayring. In order to find out the prevalence of hair removal, motives and perception, a quantitative study was also conducted: responses of over 900 participants

were included in the dataset. The online questionnaire included 4 pictures of men and women, each with and without axillary hair. Participants were asked to rate the attractiveness of the depicted persons. The questionnaire included the same questions asked in the first study; the response categories were the ones abstracted from the data of the first examination (motives for beginning and actual hair removal, etc.). A correlation was found between hair removal and gender ($r = .415$; $p < .001$). Relationship status ($\text{Chi}^2 = 4.67$; $p = .031$) and age ($F = 16.43$; $p < .001$) influence the custom of hair removal; the motives for hair removal differ between gender ($\text{Chi}^2=39.50$; $p < .001$) and the age of first hair removal is connected to being guided by a role model ($\text{Chi}^2=11.18$; $p = .004$). Furthermore the motives for hair removal change. While motives of men and women differ at the beginning ($\text{Chi}^2=6.02$; $p = .014$), there is no discernable difference in motivation for the actual hair removal ($\text{Chi}^2=0.18$; $p = .68$) – the latter is motivated extrinsically. Moreover hair and hair removal were judged more strongly in a person of the other sex than the rater herself/himself. Hair is personal – that is the attitude of many respondents. It thus obviously enhances individuality. This study also addresses the question whether there is a universal aesthetic assessment of the human body, especially body hair. It is possible that people remove their body hair because they want to get rid of anything animal-like. In a number of respondents, the emotion of disgust is connected to seeing or thinking of body hair. Hair removal can perhaps also be considered a modern form of grooming. Some persons (mostly women) surprisingly completely remove their body hair even though their partner considers body hair erotic. This group can be seen as overconformists with regard to the present cultural ideal of a hairless, juvenile body, regardless of the possible negative effect on the sexual relationship with their partner. They may possibly share some underlying psychological mechanisms (e.g. those controlling self-esteem) with anorexic persons who are also extremely concerned about complying with present-day iconic body images. The de-sexualising effect of removing hair and “pheromones” might gradually become an adaptive trait in crowded urban environments.

11.30am - Attractiveness of face, dance, speech and singing is more coherent and indicative of body ornaments in women than men in a cross-cultural study

Jaroslava Valentová, Center for Theoretical Study, Charles University and the Academy of Sciences of the Czech Republic, Prague, CZ

Marco Varella, Department of Basic Psychological Processes, Institute of Psychology, University of Brasilia, BR

Jan Havlíček, Department of Zoology, Charles University, Prague, CZ

Kamila Pereira, Department of Experimental Psychology, Institute of Psychology, University of São Paulo, BR

Various morphological and behavioral traits, such as face or voice, are supposed to be indicators of some underlying quality of the organism, such as reproductive potential. Previous studies have shown that several distinct traits develop under the influence of sex hormones, and can thus be employed as cues to sex-typical development and related qualities, such as fertility, and/or dominance. In women, it has been shown that attractiveness and both perceived and measured femininity in different modalities are interrelated. In men, however, the results have been rather ambiguous. Here we tested possible associations between attractiveness in four non-manipulated display modalities - face, speech, singing, dance - of both men and women from two ethnically diverse populations. We further examined relationships between these attractiveness ratings and several sex-dimorphic body measures. If these traits independently indicate sex-typical development of their bearers, their attractiveness should be interrelated and linked to the other body indicators. We recruited 166 heterosexual individuals (81 men, 85 women) at universities in Brazil (88) and Czech Republic (78), mean age 23.32 (SD=3.73). We took their facial frontal and profile pictures, filmed a video of spontaneous dancing to a beat, and recorded their speech and singing. We measured handgrip strength and the respective traits in order to compute body mass index (BMI), waist-to-hip ratio (WHR) for women and waist-to-shoulders ratio (WSR) for men. Fifty men and 50 women from each country rated all opposite sex stimuli for attractiveness. Given the high inter-correlations

between ratings across countries, we have used averaged ratings of attractiveness across raters per stimulus. In women, all modalities were significantly inter-correlated (all Kendall's Tau between .158 and $<.499$). In men, we only found correlations between attractiveness of speech and singing (Kendall's tau = .487), and face and dance (Kendall's tau = .286). Stepwise regression with mean attractiveness ratings for each modality and body measures as predictors showed that in women, the face ($R^2=.399$) and dance ($R^2=.383$) attractiveness were both significantly and negatively predicted by BMI and WHR. Moreover, facial attractiveness was also negatively predicted by age. Singing attractiveness revealed a weak negative effect of BMI ($R^2=.056$), and there was no significant predictor of speech attractiveness. In men, the dance attractiveness was negatively predicted by WSR ($R^2=.076$), and the singing ($R^2=.063$) and speech attractiveness ($R^2=.051$) were both positively predicted by BMI. There was no significant predictor of facial attractiveness. In agreement with previous studies and the theory of redundant signals, preferred visual, behavioral and vocal cues (face, dance, singing) in women indicated unambiguously lower BMI and WHR, which have been shown to be related to fertility. In men it was more behavioral cues (singing, dance, speech), which were weakly linked to bigger body size and masculine body shape. Sexual selection could thus have played a role in the dancing and singing displays, since they reliably indicate underlying biological qualities, in particular in women. In contrast, female speech and male face did not show any link to body indicators, and thus might indicate other qualities, e.g. parental qualities or intrasexual competition.

11.50am - Hormone mediated adaptive design and reproductive consequences

Karl Grammer, Department of Anthropology, Faculty of Life Sciences, University of Vienna, AT

Justin Garcia, The Kinsey Institute for Research in Sex, Gender, and Reproduction, Indiana University, and Department of Gender Studies, Indiana University, US

Anna Schaman, Department of Anthropology, University of Vienna, AT

The term hormone mediated adaptive design was coined for the fact that female behavior, cognition and appearance apparently change functionally during the menstrual cycle. A recent review of the literature recently showed that this actually seems to be an effect. These changes are discussed in evolutionary terms as adaptations in female mate selection to gene shopping in order to increase offspring variability. Although this seems highly plausible there is actually only sparse knowledge about actual female initiation of extra pair activities and the results of extra-pair copulations. In order to figure out how much effort and copulations are necessary in order to reach an extra pair conception we developed mathematical models based on probabilities of female initiation of sex, copulation with partners, extra pair copulations and conception probabilities from existing data sources. In a computer simulation we then were able to demonstrate the effects of extra-pair copulations on female reproduction. The surprising result is, even if the effect exists, a random copulation model does better or equals the suggested adaptive behavior. This corresponds to the current literature on bird extra-pair copulations. A viable strategy would be Levy's flight strategy but testing this needs more data. As a consequence we suggest that either more data on this topic are collected in real life situations or that alternative explanations are put forward. One possibility we will discuss is that the observed changes are not adaptations per se but simple changes due to a mid cycle rise in female metabolism.

12.10pm - Investment in beauty, self-perception, and implication of the self-esteem (SFA) (LMA)

Anthonieta Looman Mafra, Department of Physiology, Universidade Federal do Rio Grande do Norte, BR

Felipe Castro, Department of Physiology, Universidade Federal do Rio Grande do Norte, BR

Amanda Carvalho, Department of Physiology, Universidade Federal do Rio Grande do Norte, BR

Fívia Lopes, Department of Physiology, Universidade Federal do Rio

Grande do Norte, BR

The theory of sexual selection provides an evolutionary explanation for how human sexual behavior was selected in order to choose romantic partners who can improve their reproductive success. Thereby, there are some characteristics preferred by men and women that are interpreted as clues about their probable partners' reproductive quality. Physical appearance, for example, is an important characteristic for men and women because it signs female's youthfulness and fertility and male's capacity of protection, dominance, competitive ability, and high social status. It is understandable that the effort to look better than the competitors in the human mating market could be a determinant of the investment in beauty (IB). Aiming to investigate whether women invest more in beauty than men (once physical appearance is more important to women's mate value) and if IB is related to women's and men's self-perception, 189 participants were asked about their monthly IB, self-perception according to nine traits (pretty/handsome face, beautiful body, health, loyal, good financial condition, intelligent, agreeableness, sociability, and determinate and hard working), overall desirability, and self-esteem (Rosenberg scale). Although women invest in beauty more than men do, the difference between investments was not significant and Pearson correlations showed some significant associations between self-perception and IB for both men and women. However, despite our expectations that IB would be positively related to characteristics related to physical attractiveness self-perception (health, pretty/handsome face and beautiful body), data from women showed a relationship between IB and good financial condition. On the other hand, men partially confirmed our hypotheses, relating IB to handsome face, beautiful body, good financial condition and sociability. As self-esteem influences self-perception, we divided our sample by self-esteem and the results showed that normal self-esteem women related IB to their financial condition while normal self-esteem men related IB to their handsome face, good financial condition, sociability, and agreeableness and low self-esteem men related IB to beautiful body. The results suggest that the major factor that determines women's investment in beauty is their financial condition, whereas men who invested more in beauty evaluated themselves as more

handsome, sociable, agreeable, fitter, and with better financial condition probably because they do not compete in terms of physical appearance as women usually do. Men who invested more in beauty feel better in diverse characteristics, not having the apparent obligation as women in order to remain attractive to the potential partners. In addition, our study also states that self-esteem influences self-perception, even when it is related to an external factor, such as IB, by showing that high self-esteem men and women, and low self-esteem women, have their IB not correlated to their self-perception.

12.30pm - Lunch

2.00pm - Social Program (see Page 111)

Saturday 9th August, 2014

9.00am - Plenary

Women's competition for mates: Experimental findings leading to ethological studies

Maryanne Fisher, Saint Mary's University, CA

There has been an explosion of recent experimental work pertaining to women's intrasexual competition for mates. This research spans the areas of eating disorders, fertility, risk-taking, self-perceptions of mate value, fashion preferences, and adolescent friendships, among others. I will briefly review these new developments, and then discuss a series of recent studies that collectively reveal women's perceptions of potential rivals is generally negative and encompasses numerous characteristics. My findings indicate that women do not necessarily have to interact with rivals for these results to occur; women appear to engage in vicarious competition by witnessing hypothetical competitive situations. The limitation to this past work is that ethological studies are rarely performed, which leads to questions concerning the reliability of the findings, how frequently and in what contexts competitive strategies are used, and how real-world group dynamics may influence competition. Therefore, using the existing experimental research, I propose new, ethological research directions, and report on some of my preliminary findings.

10.00am - Coffee

10.30am - General talks VI

10.30am - Tongue-gestures revisited: orofacial movements in language evolution

Slawomir Waciewicz, Center for Language Evolution Studies, Nicolaus Copernicus University, Torun, PL

Przemyslaw Zywczyński, Center for Language Evolution Studies, Nicolaus Copernicus University, Torun, PL

Sylwester Orzechowski, Department of Psychology, Maria Curie-Skłodowska University, PL

For about a decade, the so-called gestural view of language origin, stressing the importance of the visual rather than vocal modality, has become a major contender in the field of language evolution research. Its principal weakness has been identified as the problem of modality change: why and how would a well functioning gestural/visual system transition into the (mostly) vocal system of spoken language that is characteristic of a vast majority of human communities today. As one solution, proponents of versions of gestural hypotheses have pointed to “tongue gestures”, or movements of the orofacial area, as a possible missing link. However, this idea remains controversial and in need of systematic investigation. Our paper presents a comprehensive review and evaluation of the phenomenon of orofacial gestures in the context of language evolution, with a focus on their possible role in the postulated gestural-vocal transition. We scrutinise a very broad range of data, including: 1) the communicative importance of orofacial gestures in linguistic (e.g. American Sign Language) and non-linguistic communication of modern humans and non-human apes; 2) the neural links between the motor control of fine manual and orofacial movement; 3) the role of the motor (thus, non-auditory) component in speech comprehension (the ‘motor theory of speech perception’; 4) the role of the visual modality in speech perception; the voluntary production of sounds via orofacial movement in apes, as opposed to an almost complete lack of voluntary laryngeal control; and 5) the disruptions to orofacial movement in developmental verbal dyspraxia caused by a mutation to FOXP2, the first gene identified as directly related to language. We conclude by bringing attention to the phenomenon of auditory feedback and its role in the control of speech production as a possible transitional mechanism between the (primarily) visual system of gestures including orofacial gestures and the (primarily) vocal spoken language.

10.50am - ‘Prosociality’: Re-evaluating measurement methods

Jacques Launay, Department of Experimental Psychology, University of

Oxford, GB

Robin Dunbar, Department of Experimental Psychology, University of Oxford, GB

There has been a wealth of research into the human tendency to exhibit unusually high levels of prosocial behaviour towards unrelated conspecifics and the evolutionary paradoxes that this appears to create. However, most of the evidence relating to this tendency towards positive social behaviour has been collected in contrived experimental settings. Recent research using economic games is starting to suggest that the findings from these experimental settings do not generalise outside of the laboratory, and that the choices people make might be better explained by a desire to conform to social norms rather than positivity towards an interaction partner. Within the human behavioural sciences we may be making some fundamental mistakes in the way that we measure prosociality, and should re-evaluate measurement methods before continuing to collect data. It is likely that the error comes from failing to recognise that prosociality is an umbrella term, adopted from folk psychology, and is masking subtle differences in the motivation that underlies positive social behaviour. In particular, here we argue that it is vital that we separate forms of prosocial behaviour that occur during the initiation of relationships from that occur during relationship maintenance. From an evolutionary perspective these two forms of behaviour serve distinct functions, and should not be amalgamated into one concept. We propose that another important distinction to make is whether relationships are dyadic, or form part of interaction with a larger network in which reputation might be altered as a consequence of interaction. Economic games, which demonstrate high levels of prosociality assume that the interaction between two strangers in an experimental laboratory is devoid of any social pressure for the players. However, this ignores the role that the experimenter's presence might play on participants' performance: as humans we are exceptionally conscious of our reputation and social world, so it is likely that any monitoring from a trusted person will influence behaviour. We conclude that measures of prosociality would be much more representative if they are reclassified

as either tapping into dyadic relationship initiation, dyadic relationship maintenance, and network level relationship initiation or network level relationship maintenance. By understanding the evolutionary purpose of these different forms of prosociality we can develop measures that are more specifically aimed at measuring these behaviours, and begin to understand the reasons for the emerging crisis in economic game literature.

11.10am - The variability of domineering strategies in long-term romantic relationships (SFA) (LMA)

Denisa Průšová, Department of Anthropology, Charles University, Prague, CZ

Kateřina Klapilová, Faculty of Humanities, Charles University, Prague, CZ

Jitka Lindová, Faculty of Humanities, Charles University, Prague, CZ

As confirmed by many studies, domineering in romantic relationships - the ways romantic partners impose their will - is an integral and fundamental part of relationship functioning. Dominance can be understood situational, as the outcome of diverse factors (power basis, motivation, previous experience, etc.), the influence of which varies according to the specific type and topic of interaction and across specific partners. This study explores the variability of behavioral domineering strategies leading to situational dominance (accomplishing own purpose which the partners have a dispute over). In contrast, the socio-psychological approach tends to construe dominance as a stable personality characteristic and considers those individuals as dominant who manifest direct and active behavior and are assertive, even aggressive. In our study, we do not restrain our view of potential domineering behavior in such a manner and look for any behavioral pattern that can be identified as resulting in situational dominance of one partner from a romantic couple over the other. In total, 35 long-term couples (living together for at least 1 year; mean 3 years), with average age of 25 (range 20 -40), were observed. In a laboratory setting, the couples were asked to act out their typical conflict situation and were videotaped. The verbal and nonverbal behavior of partners was

coded using open codes and the character and outcome of the conflict was determined. Consequently, we selected codes that contributed the most to final dominance of one of the partners (influenced the other partner the most) and categorized them into one or a few domineering strategies for each scene. Finally, particular domineering strategies from individual scenes were categorized into more general domineering strategies. We identified three motivational areas leading to conflicts in studied couples: an attempt to influence the partner's behavior (50% of all cases), a conflict over a joint plan (35%) or injustice by a partner (15%). Two forms of domineering were found - offensive (partner who had started the conflict won) and defensive domineering (partner who had started the conflict lost), both appearing with similar frequency. We identified 8 domineering strategies: Argumentative, Coercive/Unyielding, Aggrieved, Blaming, Sabotage, Demonstration of Emotion, Insidious (Communication Fouls and Deceit) and Appealing. Domineering strategies were sorted according to whether they were used in a context of offensive or defensive domineering. Among the offensive strategies, we found frequent use of the Aggrieved strategy and Demonstration of Emotion, followed by the Coercive, Argumentative, Appealing and Blaming strategies. The Coercive/Unyielding and Argumentative strategies and Sabotage often appeared among defensive strategies, followed by the Insidious, Appealing and Blaming strategies. Results indicate that subjects often use several domineering strategies subsequently during a single interaction. We conclude that in real-life disputes of romantic couples, we can find several frequent and influential domineering strategies, unexpected according to the traditional socio-psychological literature, as e.g. Grievance, Sabotage or Demonstration of Emotion, for which the common characteristic is that they are indirect and do not require possession of power sources to be employed.

11.30am - Changes in testosterone, cortisol, and vocal displays during virtual courtship in young adult men (SFA) (LMA)

Owen-Aldis-Award Winner

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Pavel Šebesta, Department of Anthropology, Charles University, Prague, CZ
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Lucie Krejčová, Department of Anthropology, Charles University, Prague, CZ
Kateřina Klapilová, Faculty of Humanities, Charles University, Prague, CZ

Previous authors argue that there is still a missing link between research designs aiming to test the purely competitive (involving a rival) and courtship (those which could possibly mean benefit of gaining a mate) situations in relation to free testosterone (T) and cortisol (C) levels. We designed this study to meet this criterion and also test situational changes in vocal displays (mean fundamental frequency (F0), intensity) of young men in courtship-related competitive situations, by employing an experimental within-subject design. In particular, we aimed to test changes in T and C levels in win and loss situations, and the possible link between these and changes in vocal parameters, to control for link to change in behavioral displays. A sample of adolescent men (N=20, aged=16-18) underwent testing in two consecutively presented situations: success (possibility of gaining preferred female partner over the rival- S1), and loss (rejection by the partner in favor of the rival - S2) in a virtual courtship scenario, in which male participants are made to believe they are competing against each other as well as imaginary rivals. In both situations, hormonal levels (T and C from saliva) and standardized vocal recordings were obtained and compared with basal levels (S0 – noncompetitive situation before the experiment). We employed Repeated Measures ANOVA with planned

contrasts and Pearson correlations. Our results are in line with our predictions in terms of changes in T levels, as well as vocal parameters (F0 and intensity). T levels in the competitive situation (S1) were higher than in the basal situation (S0) which can be interpreted as readiness to confrontation. Moreover, F0 was lower in S1, which is perceived as more masculine and dominant, when compared to S0. In contrast, in the loss situation (S2), T levels were significantly lower in comparison with S1, and voices were higher in F0 and lower in intensity (traits that are commonly associated with lower dominance), than in S1. Changes in cortisol levels were also significantly different between S1 and S2, but not in the predicted manner: in S2, C was significantly lower in relation to S1. Perhaps surprisingly, situational hormonal levels and behavioral (vocal) displays did not significantly correlate, which could indicate a non-causal relation, or could be a result of nonparallel sampling (saliva was collected 15 minutes, and voices were recorded 2 minutes, after each situation).

11.50am - Acoustic cues of formidability in Mixed Martial Arts fighters (SFA)

Stefan Goetz, Department of Psychology, Wayne State University, US

Kathryn Krupsky, Department of Psychology, Wayne State University, US

Tara Delecce, Department of Psychology, Wayne State University, US

Samuele Zilioli, Department of Psychology, Simon Fraser University, CA

Justin Jagore, Department of Psychology, Simon Fraser University, CA

Across the animal kingdom, the sex that experiences more variance in reproductive potential, usually males, develops sexually dimorphic traits (behavioral and physical) that aid in intrasexual competition, dominance and status. Human evolution has been marked by greater male-male competition and greater variance in reproduction. Dominance theory proposes that, rather than bearing the cost of all out physical competition in which the outcome is a foregone conclusion, both parties would benefit by not engaging in direct competition. Rather, attention to honest indicators of formidability, such as size, helps to gauge relative formidability and settle status disputes. Several acoustic features of the

human voice show high sexual dimorphism. As such, these features are predicted to correlate with physical formidability. Fundamental frequency (F0), closely related to perception of pitch, of men is half that of women. Likewise, monotonicity, a product of the variance in F0 across a phonation, is also sexually dimorphic with women showing greater variance. Formant structure, or formant dispersion (Df) gives the voice its timbre and is also sexually dimorphic. Men show less spacing between formants than do women. Here I further test the validity of F0, monotonicity, and Df as markers of formidability in a large sample of mixed martial arts fighters. Interviews from 294 UFC® fighters were downloaded from Youtube® and F0, monotonicity (measured as the standard deviation of F0, hereafter F0 - s.d.), and Df were extracted using Praat acoustic analysis software. The UFC provides a quasi-Darwinian environment in that in order to remain in the UFC a fighter cannot lose more than three fights in a row. Hence, the total number of fights in a fighters UFC career provides a good indicator of formidability. Results indicate that F0 and F0 -s.d. both independently predicted tenure in the UFC, while Df did not. Specifically, F0 and F0 - s.d. negatively correlated with formidability. Formant dispersion was unrelated to survival in the UFC. Taken together, the results of this study provide further evidence for the validity of sexually dimorphic features of men's voices as honest indicators of threat potential.

12.20pm - Lunch

2.00pm - General talks VII

2.00pm - Artistic propensities cross-culturally covary with mate value in both sexes, but with competitiveness only in women: evolutionary implications

Marco Varela, Department of Basic Psychological Processes, Institute of Psychology, University of Brasilia, BR

Jaroslava Valentová, Center for Theoretical Study, Charles University, Prague, CZ

Zuzana Štěřbová, First Faculty of Medicine, Charles University, Prague,

CZ

Kamila Pereira, Department of Experimental Psychology, Institute of Psychology, University of São Paulo, BR

Maryanne Fisher, Department of Psychology, Saint Mary's University, CA

Recent empirical evidence has shown that ancestral intersexual selection might have influenced the evolution of human artistic propensities. Particularly, male reproductive potential, artistic display and female preferences were shown to be connected in music and plastic arts. Given that the possible influence of intrasexual competition has been overlooked, the relative importance of intersexual and intrasexual selections has never been investigated. Here we suggest that individual variation in artistic propensities would covary with the variation in traits not only related to intersexual selection (mate value, number of partners) but also intrasexual competition (aggressiveness, competitiveness) in both sexes. We investigated the possible relationship between talent/expertise in various artistic modalities and proxies of reproductive potential in both sexes of two ethnically distinct populations. Participants were 1025 women and 562 men younger than 37 years (age = 24.46, SD = 4.21), all heterosexuals from Brazil and the Czech Republic. Using a scale from 0 to 10, they reported their self-perceived level of talent and experience in 14 artistic modalities. From these, factor analysis revealed four factors: Literary-arts (creative writing, humor, acting in theater or film, writing poetry, storytelling), Plastic-arts (drawing/painting, sculpting, handcrafting, creative cooking), Musical-arts (playing instruments, singing, dancing), and Circus-arts (juggling, doing acrobatics). They also reported their mate value (the ease to find partners), physical attractiveness, sociosexuality (SOI-R with behavior, attitude and desire subscales), number of long-term and short-term partners, Buss-Perry Aggression Questionnaire (with anger, hostility, physical and verbal aggression subscales) and Buunk-Fisher Intrasexual Competition Scale, which entered as predictors in regressions. In women, the stepwise regression showed that the Literary-Arts factor was positively predicted by mate value, SOI desire and verbal aggressiveness ($R^2 = .103$), the Plastic-Arts factor was positively predicted by mate value and

negatively by number of short-term partners ($R^2 = .032$), the Musical-Arts factor was positively predicted by physical attractiveness and competitiveness and negatively by hostility level and SOI behavior ($R^2 = .068$), and the Circus-Art factor was positively predicted by mate value and verbal aggressiveness ($R^2 = .027$). In men, the Literary-Arts factor was positively predicted by mate value and verbal aggressiveness ($R^2 = .145$), the Plastic-Arts factor was also positively predicted by mate value and verbal aggressiveness ($R^2 = .062$), the Musical-Arts factor was positively predicted by mate value ($R^2 = .043$), and the Circus-Art factor was also positively predicted by mate value ($R^2 = .049$). We showed that cross-culturally, artistic talents/experiences in general are indeed related more with proxies of intersexual selection than of intrasexual competition in both sexes. Mate value, followed by verbal aggression were the most prevalent predictors across artistic modalities in both sexes. In women, intrasexual competition seems to be involved in more artistic modalities than in men. This can be explained by women's increased interest and competition over aesthetic qualities, beauty and ornamentation, traits that tend to be valued by men. Future studies should take into account women's intrasexual competition as an important factor in the evolution of artistic propensities, especially musicality.

2.20pm - Experimenter effect in observational studies: Does experimenter gender affect mate guarding behavior? (SFA) (LMA)

Kraig Shattuck, Wayne State University, US

Carol Weisfeld, University of Detroit Mercy, US

Glenn Weisfeld, Wayne State University, US

Margaret Stack, University of Detroit Mercy, US

The experimenter effect is a well known confound when conducting studies. While the traditional view of the experimenter effect looks at how the behaviors that the experimenter unconsciously exhibits influence the participants, static characteristics of the experimenter, such as height and gender, can have an effect as well. When conducting observational research in which an experimenter interacts with the participants, these

static characteristics of the experimenter can influence the behaviors of the participants in many ways. When the research being conducted is related to mate guarding, the gender of the experimenter is of particular importance. In order to analyze this effect further, results from video interviews in conjunction with survey results were examined. The effect of the experimenter's gender on various mate guarding responses and behaviors was then examined. Couples had a brief interaction with an experimenter (male n=19, female n=15), then filled out the Marriage and Relationship Questionnaire (MARQ), and finally participated in a video recorded interview with the experimenter. Various questions from the MARQ relating to mate guarding were of interest, including how much one finds one's spouse attractive and how much one fears that one's spouse will be unfaithful. Variables of interest from the interviews include the couples' physical proximity to each other, touching of each other, and time spent gazing at each other. Results indicate that the gender of the experimenter does have an effect on both the survey responses and the behavioral measures, though this effect was more pronounced when the experimenter was female. While the small sample size is a concern, the results from this study bring up interesting points that should be considered when conducting observational studies. Specifically, the gender of an experimenter can influence the results of not only survey responses, but also observable behaviors.

2.40pm - Sex differences in married couples' nonverbal behavior as a function of marital dynamics (SFA)

Tara L DeLecce, Wayne State University, US

Carol Weisfeld, University of Detroit Mercy, US

Margaret Stack, University of Detroit Mercy, US

Glenn Weisfeld, Wayne State University, US

Previous cross-cultural research has examined sex differences in marital dynamics using the MARQ (Marriage and Relationship Questionnaire). Just as women are choosier than men in selecting a mate, married women are more likely to have regretted the marriage and to have considered

divorce. Husbands, on the other hand, were more likely to report just feeling fortunate to have married their wives as well as having felt love at first sight. While this research only examined these sex differences through self-report data, an expansion of this research included observations of 40 American couples' nonverbal behavior in videotaped sessions focusing on the proportion of time husbands and wives looked at each other, smiled, laughed, and frowned (during a conversation with an experimenter) and how these nonverbal behaviors are a function of marital satisfaction measured via the MARQ. The current study analyzed these data further. The findings corroborate the sex differences in greater female choosiness throughout marriage as wives' nonverbal behaviors were affected by marital dynamics more than husbands' nonverbal behaviors. Specifically, wives spent a significantly higher proportion of time looking at their husbands when they felt that when problems arise it is usually their husband's fault. There was a trend (although not significant) for wives to spend more time looking at their husbands under similar conditions such as feeling that their husbands had annoying habits. Perhaps wives are expressing their unhappiness with their husbands by giving them an unpleasant or even threatening stare. Conversely, husbands' proportion of time gazing at their wives was not significantly affected by marital dynamics measured through individual MARQ items. Instead, their gazing behavior was predicted by length of marriage such that the shorter the duration of marriage, the longer husbands spent looking at their wives. Surprisingly, wives' age and attractiveness did not significantly contribute to length of time husbands spent looking at their wives. Perhaps this is a reflection of men's feeling "love at first sight" and when married for a shorter time will still have lingering feelings related to this phenomenon that slowly wane as the marriage continues. Marital satisfaction tends to decline over time, but for wives as well as husbands.

3.00pm - Children's selection of information regarding gender stereotypes and motivated reasoning (SFA)

Anna Schaman, Department of Anthropology, University of Vienna , AT
Fred Bookstein, Department of Anthropology, University of Vienna, AT

Katrin Schäfer, Department of Anthropology, University of Vienna, AT

Our wishes affect how we evaluate facts and propositions: we hardly question what we wish to be true, but when confronted with unpalatable beliefs we thoroughly search for evidence that may contradict them, which is the logically correct approach to hypothesis testing. However, little is known about the ontological ontogenetic development of these different cognitive strategies. This study investigates the potential influence of children's motivation on their information selection. Children motivated to disbelieve the rule in a Wason selection task were expected to perform best, and children motivated to believe the rule to perform worst. Austrian fifth-graders (76 girls, 55 boys, age: 10-12 years) performed a Wason selection task with negative or positive stereotypes about boys' and girls' competences as rules. The children suggested activities for the rules. To represent the four logical options, the experimenter drew a stick figure of a boy, of a girl, of a representation of someone competent at the activity and of someone incompetent. The experimenter asked the children to consider whom of those four people they would need to check to find out whether the rule was correct. The children achieved the lowest success rate when the rule was a negative stereotype referring to their own sex and the highest success rate when the rule was a positive stereotype referring to the other sex. Surprisingly, both girls and boys were more than three times as successful when the stereotype referred to boys, as compared to when the stereotype referred to girls. The apparent absence of motivated reasoning contradicts findings in similar experiments with adults. The children may not have perceived the stereotypes as desirable or undesirable statements about themselves. However, it is equally possible that children's reasoning is not affected by their motivations in the same way as observed in adults. We discuss potential explanations of the unexpected effect on information selection such as sex differences in conformity to stereotypes and biological or cultural differences in the perception of boys and girls and propose further experiments to investigate this surprising result.

3.20pm - Intentionality levels in different genres of performance art

Tamas David-Barrett, University of Oxford, GB

To what extent human social cognition is limited in its capacity to process multiply embedded mind states of others has been the focus of intense debate. It has been empirically established that normally developed adults can process five orders of intentionality on average. This would suggest that works of culture, and in particular performance art, should reflect this limitation. However, there is a considerable variation not only among different pieces, but also among different genres, suggesting that there are additional factors at play beyond mere cognitive capacity limits. This talk will first use Mozart's opera, *The Marriage of Figaro*, as a case study, and show that it violates the presumed cognitive limit. I will hypothesise the reason is two-fold: first, the plot includes all evolutionarily relevant human sexual strategies in a highly complex plot, triggering an increased cognitive effort on the part of the audience; and second, Mozart uses a host of musical cues to facilitate the cognitive processing of emotionally charged dyadic relationships. Then, I will present a comparison between the twenty historically most successful pieces of the genres opera, drama, and ballet, and provide empirical evidence suggesting that the combination of musical and verbal cues allow a higher order social cognition than verbal cues only, which in turn allow a higher order than musical cues only.

3.40pm - Coffee

4.00 - 5.20pm - General Assembly

8.00pm - 12.00am - Banquet

Poster

Presentations

1. The problem of a selectionist analogy to the theory of selection by consequences

Luiz Henrique Santana, Federal University of Pará, Brazil, BR

The explanatory system developed by Burrhus Frederic Skinner culminated in the formulation of an explanatory mechanism that should address behavior as an analogy between natural selection of Charles Darwin and operant conditioning. Skinner believed that this analogy would be sufficient to sort the behavioral disciplines into three explanatory levels: phylogenetic, ontogenetic and cultural. However, before Darwin's theory became a universal paradigm for biology, it was necessary to find a substrate on which selection could act in order to test the limits and scope given by the Darwinian formulation, i.e. Gregor Mendel's discoveries and rediscoveries by Hugo Marie de Vries, Carl Correns and Erich von Tschermak-Seysenegg laws about genetic transmission of hereditary characters. Beyond the neodarwinist synthesis, the experimental analysis of behavior still has not a biological basis for tests of Skinner's hypothesis about the selection of operant behavior as an analogue of natural selection. There is also not a mathematical model to predict the distribution of variability of individual repertoires in an analogue of Hardy-Weinberg Law. What is the impact of these inconsistencies on the theory of selection by consequences? Before accepting the analogy between operant conditioning and natural selection, it is necessary to understand the laws of variation and retention of behavior. Behavioral scientists should ask themselves if is enough for a natural science to accept the idea that the body is sensitive to the environment after the reinforcement and not to

explain how this sensitivity occurs and how it affects behavior.

2. Mothers desire a smaller number of children than fathers? Sexual conflict over fertility in modern society (SFA)

Masahito Morita, The Graduate University for Advanced Studies (SOKENDAI), Research Fellow of Japan Society for the Promotion of Science, JP

Hisashi Ohtsuki, The Graduate University for Advanced Studies (SOKENDAI), JP

Mariko Hiraiwa-Hasegawa, The Graduate University for Advanced Studies (SOKENDAI), JP

A fertility decline is one of the most paradoxical phenomena in the evolution of human behavior. In this study, we try to understand fertility decline from the perspective of sexual conflict between mother and father. In general, it is said that the cost of reproduction and parental care for women is higher than that for men. Therefore, the ideal number of children for women should be smaller than that for men, except for a complete monogamous situation. Under serial monogamy, there should be greater reproductive advantages for men. Our hypothesis is that if the modernization of society caused women, who desired a smaller number of children than men, to have more power in reproductive decision-making, fertility decline should occur. Hence, our two predictions were: (1) the ideal number of children for women should be smaller than that for men, and (2) women have more power nowadays in reproductive decision-making than men. To our knowledge, evolutionary studies of fertility decline with the perspective of sexual conflict between parents in developed and low fertility countries are rare. To test the hypothesis, we conducted a questionnaire to parents at a childcare facility in Japan in 2013. We asked each mother and father, respectively, how many children they desired. Contrary to our prediction, in most couples, the ideal number of children for mothers was the same as that for fathers. Also, in many cases, parents had an equal priority in having children and they were equally positive about having children. There are several possible reasons why our hypothesis was not supported. One of

them is that, contrary to our assumption, there can be little advantage of serial monogamy for men in a modern society. For example, because of the compensation fee in divorce and the following child-rearing expenses, men cannot easily change their partner. Therefore, there may be no conflict in the ideal number of children between parents.

3. Moral variations in Albania: An evolutionary perspective

Ani Bajrami, University of Tirana, AL

Every moral behavior or moral judgment represents a cultural module which is formed according to certain information. This information is constantly changing and reorganized because people face different adaptive problems in their lifetime. Products of the information in time, moral behaviour and moral judgment, is therefore expressed in moral variations even in a given population. Here, 2355 individuals of three generations were evaluated according to the Moral Foundation Questionnaire, a measure that scores aspects of moral behaviour and moral judgment. The results suggest that statistically significant moral variations exist according to different generations and levels of education, gender, location and political beliefs. In this context, morality modules which are formed according to various kinds of information present in a given population may be in constant change and depend on generations, location, gender, levels of education and political beliefs.

4. Cad Men: Evidence for alternative mating strategy phenotypes in both men and women (SFA)

Rafael Wlodarski, University of Oxford, GB

In analyses of mammalian mating systems, humans invariably fall midway between monogamous and promiscuous species. While there is a widely recognised qualitative division in human males between ‘cads’ (men who mate promiscuously and invest little in their offspring) and ‘dads’ (men who are more monogamous and invest paternally), these two ‘phenotypes’ are usually assumed to be opposite ends of the same continuum. Although

an analogous distinction has sometimes been drawn for females, this is less well researched and not widely recognised. Here we use behavioural and anatomical indices to examine the distributions of intra-sex mating strategies in two populations. Our results provide persuasive evidence for two distinct phenotypes in both sexes, with a monogamous/promiscuous behavioural ratio that approximates 43:57 in men and 57:43 in women, and anatomical ratio of 38:63 in men and 50:50 in women. The presence of two phenotypes suggests that mating strategy might be under frequency dependent selection, with directional selection favouring promiscuity in men (but not women). These findings indicate that the human mating system is more complex than previously thought, and may explain why humans typically fall on the borderline between monogamy and promiscuity in most comparative analyses.

5. Marital conflict and externalized behavior in preschool children: intergenerational transmission of conflict resolution strategies (SFA)

Carina Bossardi, Universidade Federal de Santa Catarina, BR

Mauro Vieira, Universidade Federal de Santa Catarina, BR

Lauren Gomes, Universidade Federal de Santa Catarina, BR

Simone Bolze, Univeridade Federal de Santa Catarina , BR

Beatriz Schmidt, Univeridade Federal do Rio Grande do Sul, BR

Rovana Bueno, Univeridade Federal de Santa Catarina, BR

Maria Crepaldi, Univeridade Federal de Santa Catarina, BR

The family is an important system of survival and socialization of the individual due to the characteristics of humans, with a long developmental period under adult care. In addition, the family system is complex and involves different types of interactions, in which some are relatively harmonious and others conflictive. This can all be explained in terms of close causal factors (current) and past (survival value for the species). Therefore, it is important to understand the nature of these interactions in order to minimize the risk factors and to increase the protective ones. One of these risk factors encompasses the relations of violence in the family context, which is important because violence constitutes one of the major

public health problems in the world, especially with regard to children and adolescents. The present study sought to establish a link between marital violence and the externalized behavior problems presented by preschoolers, that is, in the phase when children are exposed to a higher risk of witnessing interparental violence, to be subjected to maltreatment themselves, and to be affected by these circumstances. In total, 150 sets of parents who were living in two-parent families with at least one child aged 4-6 completed the Revised Conflict Tactics Scale (CTS2), which was designed specifically to identify the use of violence between partners who are dating, cohabiting, or engaged in a marital relationship and is part of a set of instruments used to identify intrafamily violence. Furthermore, 54 teachers completed the Child Behavior Inventory (TRF) that provides a standardized evaluation of emotional, behavioral and social functioning of children and adolescents by including a scale of internalizing (consisting of Anxiety/Depression, Isolation/Depression and Somatic) and of externalizing (rule-breaking and aggressive behavior). By Spearman correlation analysis, we found that when fathers and mothers reported committing physical violence against each other and had suffered physical violence from their partner, their children presented more externalized behavior (aggression, opposition) in interaction with peers of the same age. Moreover, fathers who reported the practice of sexual coercion by their partners, and mothers who reported the same, and being victims of injury, also have children who have exhibited more externalizing behaviors. Considering the tendency of the child to carry aggressive behavior into adulthood, it is relevant to identify the origins of aggression, as well as the factors related to its development.

6. Preference for women's BMI and WHR in Tsimane' men of the Bolivian Amazon: biological and cultural determinants

Piotr Sorokowski, Institute of Psychology, University of Wrocław, PL

Krzysztof Kościński, Institute of Anthropology, Adam Mickiewicz University, Poznań, PL

Agnieszka Sorokowska, Institute of Psychology, University of Wrocław, PL

Tomas Huanca, Centro Boliviano de Investigación y de Desarrollo Socio

Integral, San Borja, BO

The issue of cultural universality of waist-to-hip ratio (WHR) attractiveness in women is currently under debate. We tested preferences for WHR of men from the traditional society of Tsimane' (Native Amazonians) of the Bolivian rainforest (N = 66). Previous studies showed preferences for high WHR in traditional populations, but they did not control for the women's body mass. We used stimuli produced by a method that enabled us to overcome this problem: our silhouette was independently manipulated in BMI and WHR so as to obtain figures of average, below-average and above-average values for each trait. Reference data were taken from the Tsimane' Panel Data Set 2002–2007. The below- and above-average versions of each trait were set to depart from the average by 1.5 standard deviations. Additionally we analyzed associations between the observed preferences and the men's biological, environmental, and sociocultural characteristics such as age, weight, height, fasting period, TV watching, or distance from the nearest city. Our participants preferred the silhouettes of low WHR, but high body mass index (BMI), which might suggest that previous results could be an artifact related to employed stimuli. We also found that WHR lower than the population average is preferred independently from cultural conditions. However, preferences for BMI depended on age and distance from San Borja. In summary, the results of our study support the hypothesis suggesting that WHR lower than the average in a given population is preferred universally, independently from ecological and cultural conditions. Meanwhile, preferences for female BMI might be changeable and could depend on many factors. Interestingly, the Tsimane' men – who found low WHR attractive – did not associate it with perceived age, health, physical strength or the reproductive potential of women. This suggests that the sources of preferences for certain body proportions might not be conscious, but this issue requires further research, including also qualitative measures like interviews or observations.

7. Is jealousy an adaptive regulatory variable for romantic social exchange? (SFA)

Paula Pavez, Universidad de Santiago de Chile, CL

Ana Maria Fernandez, Laboratorio de Relaciones Interpersonales y Psicología Evolucionaria, CL

Social exchange relationships are explained by the degree of responsibility one individual feels towards another's welfare, which may vary from very weak to very close bonds. Romantic relationships can be characterized as extremely demanding affiliations having a reproductive goal, in which benefits are given in response to benefits received in the past or expected from a partner in the future. The human mind is designed to solve adaptive problems involving survival and reproduction. Mate selection is strategically adaptive, and must be sensitive to possible threats to inclusive fitness. Romantic jealousy is an emotion that emerges when an individual faces the real or imagined risk of losing a valuable potentially reproductive partner. We hypothesize that its expression may be dependent on the degree of social exchange that this dyadic relationship involves. We conducted a study with 68 young heterosexual couples in the Interpersonal Relationships Lab at Universidad de Santiago, who responded to a dyadic adapted measure of "given" and "expected" Social Exchange in the context of their present relationship (the Communal Strength Questionnaire of Milles et al., 2004), and Buunk's (1997) Jealousy Questionnaire. The results yielded a direct association between men's reactive jealousy, the benefits they expected, and what women gave to them, but this was not observed in women. More specifically, what men reported to expect to receive from their partners and what women declared to give to their partners was significantly predicted by the reactive jealousy of the males. These findings support the initial idea that jealousy, in the context of a reproductive relationship, may be understood as an internal regulatory variable pertaining social exchange in romantic couples, but in the present investigation such inference applies only to men. This may indicate that male reactive jealousy could be designed to preserve the benefits an individual secures from a reproductive liaison with a woman, preventing infidelity or an actual breaking up. It could explain why jealousy is so frequently felt in the context of romantic relationships, and why men may act vigorously towards a partner or a rival when a valued relationship

is threatened. Therefore, masculine reactive jealousy could be a way to regulate reproductive social exchange, and may not necessarily reflect an extreme emotional reaction in the context of a couple's relationship.

8. An ethological assessment of allegiance to rival universities in an intermediate city (SFA)

Jessica Kruger, University of Toledo, US

Daniel Kruger, University of Michigan, US

In ethology, a territory is defined an area that an animal consistently defends against conspecifics. The ultimate function of territorial behavior is to promote inclusive fitness, with proximate functions including defense of food sources, nesting sites, mating areas, and areas to exhibit mate attracting displays. Animals mark their territories through olfactory, auditory, or visual means, or a combination of these. Human territoriality often involves in-group loyalty and inter-group competition. One expression of such is in the modern context of American college football. Much of this team loyalty is communicated non-verbally, for example wearing apparel displaying university names and logos, athletic jerseys, or displaying team paraphilia. The Michigan–Ohio State NCAA Division 1 football rivalry was ranked the greatest North American sports rivalry by ESPN. “The Game,” as many fans know it, is held at the end of the regular Big Ten Conference season. Toledo is a mid-sized city in Ohio, with its northern limits at the Ohio-Michigan border. Although in Ohio, Toledo is actually closer to Ann Arbor, MI (85 KM) than to Columbus, OH (222 KM), where each of these flagship public universities is located. In fact, the City of Toledo was simultaneously claimed by both Michigan and Ohio in the early 19th Century. The 1835–36 “Toledo War” was a heated boundary dispute between the State of Ohio and Michigan Territory during Michigan’s petition for statehood. Conventional wisdom holds that team loyalties are divided among local residents, sometimes even within the same household. We used an ethological approach to assess the relative loyalty for each school during the American college football season. Systematic observations of loyalty displays would help to quantify

the proportion affiliating with each university, providing a more accurate and precise estimate than current qualitative and anecdotal descriptions. Merchandise featuring each school is widely available in the Toledo area and stores typically display Ohio State and Michigan items adjacently. Thus, public displays of university merchandise may be an unbiased metric for assessing loyalty. We predicted that although geographically closer to the University of Michigan, more Toledo area residents would display loyalty to the in-state flagship public university, Ohio State. We observed 4021 individuals in Toledo (corresponding to 1.4% of the City's population) on weekends when both Ohio State and Michigan Fall 2013 season football games were held. Most observations were on Saturday afternoon, during or shortly before the football games were played, in public places where casual clothing would be considered appropriate attire; restaurants, department stores, the Farmer's Market, the zoo, and a large indoor shopping mall. The largest proportion of people displayed loyalty to Ohio State, approximately 50% more than those who displayed loyalty to Michigan. Michigan was the second most popular university in visible displays of affiliation. Our systematic quantification of loyalty displays has provided a clearer understanding of affiliations in an intermediate city. Despite the geographic proximity to the University of Michigan, there is a greater degree of loyalty to the in-state university.

9. Changes in women's perceptions of potential mating rivals

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The goal of this study was to examine changes in women's perceptions of other women, as a result of priming via scenarios involving intrasexual competition for mates. Female participants rated the physical attractiveness, personality, friendliness and trustworthiness of women who were presented in nude photographs. Participants were then primed with various scenarios that contained vignettes about a romantic couple being potentially infiltrated by a female rival. Subsequently, participants were asked to re-rate the same photographs of the women. We hypothesized

that women would decrease their evaluations of the women in the second phase due to their perception of these women as potential threats. Therefore, the priming condition (i.e., the scenarios) elicited feelings of intrasexual competition for access or retention of mates. Using this pre-post set of evaluations, we determined that women's rating of other women significantly decrease for all characteristics under consideration, including physical attractiveness, personality, friendliness and trustworthiness.

10. Formality of male clothing influences attractiveness ratings in women

Owen Aldis Award Winner

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Display of social status may provide valuable information to potential romantic partners and/or potential allies/rivals. In humans, along with morphological features, grooming and clothing style may indicate status. Wearing clothes connected to high status might modify non-verbal behavior of their owners, so that they would appear more attractive, dominant and self-confident. We tested for possible influence of formal and casual clothes on judgments of male behavioral attractiveness, dominance and self-esteem. We hypothesized that men in formal clothes, which represent higher social status, would be rated as more attractive, dominant and higher on self-esteem by both, male and female raters. Forty men (mean age 22.65; SD=2.507) were video-recorded while advertising a gender neutral object (sunglasses and a cup) to a fictional audience. In an experimental condition, they were dressed in black suit with a white shirt,

while in the control condition participants were dressed in a white t-shirt and dark jeans. Video clips (10 sec) of the overall body were edited to black-and-white, and cropped and muted. We also took their standardized facial pictures, and adjusted them for ratings session, and they completed a questionnaire on how often they wear suits and how much they like to wear suits. An independent set of 44 heterosexual men (mean age 22.11, $SD=2.49$) and 38 women (mean age 20.71, $SD=1.53$) rated randomized videos of the target men for attractiveness, submissiveness-dominance, and self-esteem on 7-point verbally anchored scales. The ratings for each target and condition were averaged across raters. For control purposes, another 27 women (mean age 20.5, $SD=1.08$) rated attractiveness of facial pictures. Controlling for age, repeated measures analysis showed that women rated target men in casual clothes as significantly more attractive than in formal clothes ($p=.002$). There was no other significant difference between the experimental and control condition. Facial attractiveness was positively inter-correlated with majority of the ratings, but when controlling for this variable, the results remained unchanged. The results were also unaffected by controlling for the questions on frequency and popularity of suit use by targets. In addition, male and female raters significantly differed in ratings of attractiveness in the experimental condition - men judged men in formal clothes as more attractive than women did ($p<.001$). Partial correlations, controlling for facial attractiveness and age of the raters, showed significant and positive correlations between ratings of attractiveness and dominance in both male and female raters in both experimental and control conditions, and between attractiveness and self-esteem only in male raters judging men in formal clothes. In conclusion, we showed that men's formal clothing, as perceived from thin slices of their nonverbal behavior, affects women's attributions of attractiveness. The decrease in attractiveness attributions in formal clothing might indicate an increase in choosiness and sensibility to dishonest displays of higher status, especially from men's behavior. It might also indicate that displays of status by clothing would be better evaluated in older men with real-life signs of status and resources.

11. Assortative waiting: Naturalistic observations demonstrating assortative preferences for gender and ethnicity

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People have non-random preferences for whom they like and form social relationships with. The majority of research has focused on how similarity influences liking. Much less is known on how similarity influences physical proximity, which could be the first step in relationship formation. Using naturalistic observation, we coded how individuals divided themselves into groups when exiting a university building via a revolving door. We hypothesized that individuals would assort themselves by gender and ethnicity. Observations were made between April and May 2013, during lunchtime (12.45 – 1.30 pm). In total, 1,487 individuals were coded for gender and ethnicity (coded as 'foreign' or 'native') by one of four students (2 men, 2 women) - coders were blind to the hypothesis. A subset of the data (N=375) was coded by pairs of the same coders in order to establish inter-rater reliability. For gender, the Krippendorff's alpha was 1, for ethnicity the average Krippendorff's alpha was .759. From the dataset, we excluded individuals who were alone in a compartment (N=74), as they are not relevant to the hypothesis; those in groups larger than five (N=31) were also excluded as they were too infrequent for analysis. This left 1,382 individuals for analyses. A simulation model in R demonstrated, that people cluster by gender and ethnicity more than expected by chance. The effects found ranged from small (7% more likely than chance) to strong (18 times more likely than chance). This paper is a clear example of the use of simulation modeling for naturalistic observations of social behavior, and calls for more research relying on naturalistic observation as well as novel approaches to data, such as simulation modeling.

12. Relationship dominance and relationship satisfaction among homosexual and heterosexual couples (SFA)

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The theory of homogamy suggests that individuals prefer partners with self-similar traits. From an evolutionary perspective, small genetic differences between parents translate into a higher parental-offspring relatedness, and can thus be based on extended kin selection. Although previous research has provided evidence for homogamous mate preferences and mate choice in majority of traits, dyadic hierarchy seems to follow rather the principle of complementarity in heterosexual couples. The main aim of this study was to test whether similarity/complementarity in relationship dominance among long-term heterosexual and homosexual couples predicts higher relationship satisfaction. The research sample consisted of 49 heterosexual couples: 49 male (mean age = 25.5 years, SD = 3.8) and their 49 female partners (mean age = 23.8 years, SD = 3.4), and 36 homosexual male couples (mean age = 29.9.1 years, SD = 7.0) All participants completed a questionnaire on socio-demographical data, the current quality of their relationship (Spanier's Test of Dyadic Adjustment, DAS, with subscales: Dyadic Consensus, Satisfaction, Cohesion and Affectional Expression), and the Sexual Relationship Power Scale (SRPS, with subscales: Relationship Control and Decision-Making Dominance) which measures relationship power dynamics. We used non-parametric correlations to find associations between respondents' and partners' scores. Results showed significant positive correlations in both homosexual and heterosexual couples in the total score of SRPS and in Relationship Control Factor (all $p < 0.05$). Further, we subtracted scores of each subscale of the SRPS questionnaire between respondents and their partners, and we correlated these differences with DAS. Results showed that lower similarity among homosexual couples in the total score of SRPS predicted higher Affectional expression ($p = .012$). Among heterosexual couples, lower similarity in Decision-Making Dominance Factor predicted

higher Affectional expression in men ($p = .014$), and lower similarity in Relationship Control predicted higher Dyadic cohesion in their female partners ($p = .027$). We showed that dominance among heterosexual and homosexual partners is positively inter-correlated, suggesting rather a homogamy principle in this trait. Nevertheless, relationship quality in both heterosexuals and homosexuals increased with dissimilarity in dominance. From the ethological perspective, complementarity of dominant and subordinate behavior serves to regulate aggression and conflict and facilitates cohesion in social group encounters in general, and thus can positively influence also romantic relationships. The balance between similarity and dissimilarity in dyadic hierarchy might pose a trade-off, and factors influencing this trade-off should be investigated in future studies. In this study we focused on relationship satisfaction of heterosexual and male homosexual couples, which seem to be more satisfied in hierarchical relationships; this question remains open for lesbian couples. Data collection for this project is still in progress, and we will present the final results at the conference.

13. Dark personality triad and mate retention tactics: A preliminary study of Chilean students (SFA)

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From an evolutionary perspective, mate selection and couple relationships serve the purpose of reproduction and increasing fitness. Nevertheless, Buss & Shackelford (1997) have noted that this requires paying attention to the adaptive challenge of preserving a romantic partner. The tactics that a person uses to retain his or her partner can include intersexual (directed at the partner) and intrasexual behaviors (directed at potential competitors), which are reflected in 19 specific mate retention tactics (Shackelford, Goetz & Buss, 2005). In this sense, it has been suggested that many personality traits are associated with a variety of strategies that individuals use in order to preserve and maintain romantic relationships.

The Dark Personality triad is constituted by machiavellism, psychopathy and narcissism, that although are undesirable and potentially destructive traits for others that surround the individual, are now being rediscovered as adaptively advantageous in reproductive terms, giving to an individual a more effective and assertive way to handle social interactions. The purpose of the present investigation was to assess the association of each of these personality characteristics with the different mate retention tactics. According to the literature, the first hypothesis is that there would be a positive relationship between dark triad personality scores and the use of mate retention tactics, particularly in those mate retention tactics that reflect higher aggression and narcissism. The sample was 65 university students with an average age of 23 years (52.3% men and 47.7% women). The results yielded direct correlations between the global results on the Dark Triad and the tactics of vigilance, concealment of the partner, jealousy evocation, rival exclusion, and subjugation. More specifically, machiavellism was positively related to vigilance, jealousy evocation, rival exclusion, resource displays, and verbal signs of possession; psychopathy was only related directly to partner concealment; and finally narcissism was positively correlated to partner concealment, jealousy evocation and rival exclusion. We conclude that the positive associations between dark personality and mate retention tactics are related to direct vigilance strategies, positive intersexual stimulus, and public signals of possession and positive stimuli; which is partially consistent with other research. Additionally, intersexual differences in mate retention tactics show that men have higher levels of vigilance than women, and time monopolization, while in subjugation women score significantly higher than the men. It is necessary to continue investigating this phenomenon in South America, since most research has been done in European or North American samples which may sometimes differ from the local context.

14. Relationship with mothers during childhood cross-culturally predicts female sexual strategies in different directions (SFA)

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Consistent with life history theory, recent studies suggest that the relationship with fathers during childhood subsequently influences women's sexual strategies. For example, women whose father was absent during childhood, or who recall a poorer relationship with him, report higher tendencies for promiscuity and earlier maturation. However, these results may be limited to euro-american populations, since for example in a Brazilian study, women with poorer life conditions during childhood started their sexual life and reproduction earlier, but it did not reveal any effect on the timing of their sexual maturity. The main aim of this study was to test the possible influence of retrospectively assessed relationship with parents during childhood on women's sociosexuality (i.e. tendencies for sexual variety) in adulthood. In contrast to previous studies, we focused on the influence of both parents and we studied two ethnically different populations: Czech and Brazilian women. We predicted that, cross-culturally, women with lower quality of childhood relationship with parents, in particular fathers, would report higher sociosexuality. The total sample consisted of 486 women: 342 from Czech Republic (mean age=24.6; SD=4.05) and 144 from Brazil (mean age=26.03; SD=5.99). The participants completed an online anonymous survey containing the revised Sociosexuality Orientation Inventory (SOI-R) with subscales of Behavior, Attitudes and Desires, and a questionnaire on relationship quality with parents during childhood (s-EMBU) with subscales of Rejection, Emotional warmth and Hyperprotectivity. Women from both samples lived with both parents at least until 15 years, were heterosexual, of similar age range, and recruited mainly among students in the biggest cities of both countries, mostly from middle economic class. Regression

models revealed that in Czech women, father's Rejection significantly and positively predicted SOI-Total ($p=.004$), SOI-Behavior ($p=.039$), SOI-Attitudes ($p=.021$) and SOI-Desire ($p=.034$). SOI-Desire ($p=.031$) was also significantly predicted by mother's higher rejection. In Brazilian women, SOI-Attitudes were significantly and negatively predicted by mother's Hyperprotectivity ($p=.05$). The main evolutionary hypothesis was confirmed in the Czech sample but only partially in the Brazilian sample. It seems that links between sexual strategies and early relationships with the father are broader but not cross-cultural, while those with the mother are more universal although in opposite directions. Our results expanded previous findings and theory by exploring and demonstrating that the relationship with the mother is also relevant to the ontogenetic calibrations of sexual strategies in women. Future studies should investigate potential modulating factors of such links and include other populations.

15. Men and women detect dyadic sexual desire and promiscuous tendencies from woman's gait (SFA)

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Many nonverbal behavior displays that can be observed by others from relatively long distance can serve as an important source of information about physical and psychological traits. One of these displays is gait. Studies show that raters were able to judge accurately characteristics such as age, gender or sexual orientation solely from women's gait, and that trained sexologists were able to detect the ability of reaching vaginal orgasm on the basis of videotapes of walking women. From the evolutionary viewpoint, the ability to assess various sexuality-related characteristics, as well as sexual interest of women in mating contexts, solely from women's gait (i.e. while observing women from a long distance, before investing energy to get into direct contact with a woman) could bring evolutionary benefits in terms of increased fitness to members

of both sexes. However, this has not been tested. In the first part of this study, 56 women completed the Sexual Desire Inventory and the revised Sociosexual Orientation Inventory. Then 56 standardized videotapes of women's gait were recorded under two experimental conditions: 1) the woman was asked to imagine she was walking alone on a sandy beach; 2) walking on the same beach accompanied by a very attractive man. Women walked for 50m on a level surface, without heeled shoes, and were recorded from behind. In the second part, randomized videotapes (15 s) were rated by 50 observers (25 men, 25 women) who were asked to assess: a) the level of woman's sexual desire, and b) the level of woman's ability to enjoy dyadic sexual activities (both on 7point scales). The concordance between self-rated dyadic sexual desire (Sexual Desire Inventory, subscale of dyadic desire) and self-rated promiscuous tendencies (SOI total) of women and sexual desire/sexual enjoyment rated by observers was tested by bivariate correlation. In the second condition (woman imagining walk with attractive man), there was a significant correlation between self-rated dyadic sexual desire of walking women and sexual desire attributed to them by observers of both sexes (male observers: $r = 0.322$, $p = 0.018$; female observers: $r = 0.282$, $p = 0.039$). Moreover, women's self-rated promiscuous tendencies were correlated with attributed dyadic sexual enjoyment rated by observers (male observers: $r = 0.237$, $p = 0.085$; female observers: $r = 0.232$, $p = 0.091$). These results show that men and women are able to detect the level of dyadic sexual desire and promiscuous tendencies from woman's gait, which can be implicated in inter-sexual and intra-sexual competition in mating.

16. Does self-perceived body and facial attractiveness truly assess physical measurements and third-party evaluation? (SFA)

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From an evolutionary perspective, attributions of physical attractiveness can reflect evaluations of underlying quality of other individuals. In fact, facial and body attractiveness are related with body indicators of reproductive potential, such as sex-typical development and maturity, fertility, fecundity and health. However, most of attractiveness research focuses on other-rated attractiveness, and the role of self-rated attractiveness is still underestimated. It is not clear whether self-rated and other-rated attractiveness covary in each different body part, neither whether self-rated attractiveness covaries with body indicators of reproductive potential. Given that during most of human evolution body self-assessment was much easier than facial self-assessment, we would predict body self-rated attractiveness to be more congruent with other-rated and body sex-dimorphic traits. We tested this prediction by exploring the relationships between various self-assessments of attractiveness and other-rated facial attractiveness, and body sex-dimorphic traits. Participants were 42 men (mean age = 23.71, SD = 3.75) and 47 women (mean age = 23.96, SD = 4.95), all heterosexuals, recruited at the University of São Paulo. They reported their own facial, bodily, vocal and behavioral attractiveness using a scale from 1 (“not at all attractive”) to 7 (“very attractive”). We then measured height, weight, BMI, 2D:4D ratio, waist-to-hip and waist-to-shoulders ratios (WHR and WSR), handgrip, and also took their facial pictures. Facial photographs were rated for attractiveness along a 7-point scale by 27 third-party opposite sex raters. Using Spearman’s correlation, we found that, in women, most self-ratings were highly positively inter-correlated ($.369 \leq \rho \leq .560$, all p 's $\leq .011$), except that the behavioral attractiveness was not related with vocal, nor bodily attractiveness. In men, most self-ratings were also highly positively inter-correlated ($.391 \leq \rho \leq .551$, all p 's $\leq .010$) except that the vocal attractiveness was not related with facial, nor bodily attractiveness. Moreover, in women, self-rated body attractiveness was the only one that correlated positively with

other-rated attractiveness ($\rho = .343$, $p = .022$), and negatively with weight ($\rho = -.409$, $p = .004$), BMI ($\rho = -.396$, $p = .006$) and right-hand 2D:4D ($\rho = -.436$, $p = .002$). The more attractive women evaluated their body, the more attractive their face was rated by men, the lighter their body, and the more masculine were their finger proportions. In men, there was no correlation between self-rated and other-rated attractiveness. The self-rated body attractiveness correlated negatively with WSR ($\rho = -.361$, $p = .019$), and self-rated voice attractiveness correlated positively with left handgrip ($\rho = .322$, $p = .037$). The more attractive men evaluated their body, the wider their shoulders; the more attractive they evaluated their voice, the stronger they were. As predicted, self-attributions of body attractiveness rather than facial attractiveness are meaningfully related to sex-dimorphic traits in each sex. Despite the fact that our voice sounds different to us than to other individuals, male self-assessment of vocal attractiveness also relates with male body quality. The finding that only in women the self-rated attractiveness was related to the other-rated one can be explained by the higher selective pressure of male choice and female competition on physical beauty grounds.

17. Aerobic fitness and muscularity as factors in mate preference

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Physical fitness should be a desirable trait in potential mates as it has many health benefits and should foster resource acquisition in males and higher reproductive success in females. Likewise, strength confers advantages in resource acquisition, protection and other matters. Nonetheless, aerobic fitness and muscularity have been largely neglected as potentially desirable traits in previous studies on mate preferences. To assess their importance in mate choice, “High aerobic fitness” and “Muscular” were added to a ‘comprehensive’ survey (Buss, 1989) of 83 potential mate characteristics. These 85 traits were rated for their “desirability” by 136 university students (89 female). In addition, visual analogue scales of muscle definition for either males or females were included to assess

the ideals and the ranges of acceptability for both short- and long-term heterosexual mates. One additional item asked about the “desired level of muscularity in a mate”, with five possible responses ranging from “none” to “very high (e.g. body builder)”. Insofar as muscularity serves as an indicator of good genes, it was expected that women would value high muscularity more in potential short- than long-term mates. The results largely supported the predictions made from our evolutionary perspective. “High aerobic fitness” and “Muscular” were deemed relatively important, with both rated higher than the majority of the 85 traits assessed. Women rated both “Muscular” and “Physically strong” as more desirable than did men but there was no sex difference for “aerobic fitness”. A more muscular male was desired by women choosing a short-term versus long-term mate, whereas no difference was seen in men. Both males and females indicated a significantly larger range of acceptable muscularity for short term than long term mates. These results help clarify data from previous studies showing the attractiveness of male muscularity for women.

18. Homosexuals are similar to their opposite sex, at least on empathy and systematizing

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Empathy and systematizing are personal characteristics that show normal-distributed levels within men and women. Empathy is characterized as a tendency to identify emotions and feelings of another person and responding accordingly in situations of social interaction. Systematizing refers to an inclination to analyze systematically and to seek patterns for a wide sort of objects. Although men and women oscillate in their levels of empathy and systematizing, on average, women have higher levels of empathy and men of systematizing. These differences have been attributed to sexual-differentiation-related mechanisms that contribute to the development of empathy and systematizing; primarily, the exposure to prenatal androgens. Fetal androgens exposure has also been associated with sexual orientation manifest later. Based on evidences found in the scientific literature, it is assumed there are relationships among factors

that drive the development of typically male and female brains in terms of empathy and systematizing, and aspects that regulate sexual orientation. Accordingly, this study was elaborated in order to test the following hypothesis: the differences between men and women in empathy and systematizing will be exacerbated in heterosexual individuals and reduced in homosexual individuals. Consequently, heterosexual women will show higher empathy than heterosexual men, and these differences within homosexuals will not be so prominent. At the same time, heterosexual men will show higher levels of systematizing than heterosexual women, whereas sex differences in homosexuals will decrease. A sample of 1464 adults was accessed, mean age of 28 years, from all regions of Brazil, mostly the South. Most of the participants presented themselves as heterosexual (80.5%), others as bisexual (6.6%), homosexuals (6.6%) and some were not classified (6.3%). All participants answered a questionnaire with Brazilian versions of the Empathy Quotient Scale, Quotient Systematizing Scale, and the Gender Orientation Scale. Differences among heterosexuals, bisexuals and homosexuals for empathy and systematizing were tested, and it was found an interaction with the sex of participants for both. Heterosexual and bisexual women showed significantly greater empathy than heterosexual and bisexual men, however within homosexuals that difference decreased and it was not significant. On the other hand, systematizing was greater in heterosexual and bisexual men than in heterosexual and bisexual women, and within the group of homosexuals the sex differences decreased and it was not significant. Additionally, correlations among empathy and systematizing and Typified and Mixed dimensions of gender orientation were tested. For women, there was positive correlation between empathy and the Typified dimension, and negative correlation for the Mixed dimension; for systematizing the patterns of correlations were the opposite. For men, empathy showed no correlation with Typified dimension and positive correlation with the Mixed gender orientation. Additionally, systematizing had a positive correlation with Typified and a negative correlation with the Mixed dimension. The results suggest that the same substrate that promotes male or female brains, in terms of empathy and systematizing,

may promote the direction of sexual orientation, in terms of same-sex or opposite-sex.

19. Partner choice, relationship satisfaction and oral contraception: The congruency hypothesis

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Hormonal fluctuation across the menstrual cycle underpins temporal variation in opposite-sex attractiveness judgments. Use of combined oral contraceptives (OCs) could therefore influence women's partner choice. Prospective tests have shown that initiating OC use alters women's preferences for odor cues of genetic dissimilarity and for facial masculinity. OC use could also potentially influence women's subsequent relationship satisfaction if she subsequently discontinues or initiates OC use. Evolutionary insights therefore suggest that associations between OC use and relationship satisfaction may be best understood by considering whether current use is congruent with use when relationships formed, rather than by considering current use alone. Furthermore, because women's attractiveness to men also varies with menstrual cycle phase and OC use, men's relationship satisfaction might also be influenced by changes in their partner's OC use. Here we present a test of this congruency hypothesis, using a survey of 365 couples. Controlling for potential confounds (including relationship duration, age, children, income), we find that congruency in current and previous OC use, but not current use alone, predicts women's sexual satisfaction with their partner. Congruency was not associated with women's non-sexual satisfaction, nor with satisfaction of male partners. Our results provide empirical support for the congruency hypothesis and suggest that women's sexual satisfaction is influenced by changes in partner preference associated with change in OC use.

20. Testosterone, marital status and having children

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Testosterone is an important hormone in mating and parental behaviors. On one hand, higher testosterone levels have been associated with increased mating effort and mating success, such as number of sexual partners. On the other hand, lower testosterone levels appear to be adaptive and conducive for parenthood, as having children has been reported to decrease testosterone levels, at least in men. However, there have been no longitudinal studies examining whether and how testosterone may predict future probability of having children in women and men. We examined associations of total testosterone and sex-hormone binding globulin (SHBG) with fertility over a 6-year follow-up period in the Young Finns prospective cohort study. Only individuals who were married or cohabiting at baseline were included in this analysis. There were 890 women and 655 men who were aged between 24 and 39 years at baseline (mean=31.7, SD=5.0). The women had a total of 298 children, and men a total of 201 children, during the follow-up between years 2001 and 2007. Proportional hazards models allowing multiple events were used for statistical analysis. In cross-sectional analysis at baseline, number of children was associated with lower testosterone in men ($B=-0.23$, 95% CI=-0.36, -0.09) and women ($B=-0.04$, CI=-0.06, -0.02). By contrast, adjusted for age and number of children at baseline, higher total testosterone level was associated with higher future fertility rate in women (HR=1.24, 95% CI=1.11, 1.19), while no association was observed in men (HR=1.00, CI=0.97, 1.03). Higher level of sex-hormone binding globulin (SHBG) was associated with higher fertility rate in women (HR=1.03, CI=1.02, 1.04) and men (HR=1.15, CI=1.02, 1.29). These associations were unchanged when further adjusted for marital status at follow-up to take into account divorces during follow-up. Our results suggest that while lower testosterone levels have been reported in parents compared to non-parents, higher testosterone level predicts higher future fertility rate in women. SHBG may be important for fertility behavior of both women and men.

21. Sex differences in artistic talent are cross-culturally more pronounced in the peak reproductive age: support for sexual selection hypothesis

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Despite being an evolutionary mystery at the first sight, artistic propensities in humans have been studied from an evolutionary perspective since Darwin. The possible ancestral adaptive advantages to artistic propensities that have been proposed, such as attracting and competing for mates, caring for young, and promoting group cohesion, are not mutually exclusive. Although rarely studied cross-culturally, many lines of evidence have shown some support for possible influence of sexual selection in the ancestral evolution of human artistic propensities. One of the main predictions stemming from sexual selection theory proposes that men would be more motivated to display their artistic talent than women, especially at a performance level. Furthermore, sex differences in artistic tendencies are predicted to be most pronounced during the peak of reproductive age. If sex differences in artistic propensities are influenced by sexual selection, we would expect to find more sex differences in individuals at their peak reproductive age (from 17 to 35). We tested this prediction by investigating sex differences in 15 artistic modalities in individuals below or above the age of 35. Participants were 894 women and 473 men younger than 35 years (age = 24.4, SD = 4.1), and 69 women and 32 men older than 35 years (age = 43.5, SD = 8.2), all heterosexuals from Brazil and Czech Republic. Using a scale from 0 to 10, they reported their self-perceived level of talent and/or experience in drawing/painting, singing, dancing, playing musical instruments, whistling, creative writing,

humor, acting in theater or film, creative cooking, sculpting, writing poetry, juggling, doing acrobatics, handcrafting, and telling stories. In the lower age group, men reported having more talent and/or experience in playing musical instruments ($p = 0.008$), whistling ($p < 0.001$), humor ($p = 0.024$), acting in theater or film ($p = 0.004$), writing poetry ($p = 0.001$), juggling ($p < 0.001$), doing acrobatics ($p < 0.001$), telling stories ($p = 0.020$), and there was a trend in creative writing ($p = 0.055$). On the other hand, women reported having more talent and/or experience for drawing/painting ($p = 0.022$), singing ($p = 0.004$), dancing ($p < 0.001$), creative cooking ($p = 0.003$), and handcrafting ($p < 0.001$). In the higher age group, men reported having more talent and/or experience only in doing acrobatics ($p = 0.042$), while women reported having more talent and/or experience in dancing ($p = 0.016$). In this cross-cultural study, we not only found that young males overall report higher and more diverse artistic talent and/or experience than young females, particularly in terms of performance arts, but we also found that almost all sex differences in art modalities disappear in individuals after their peak reproductive age. These results support the hypothesis that sexual selection might have been one of the selective pressures acting on both ancestral males and females in different artistic domains.

22. Sexual desire and breastfeeding between 2-6 months post-partum (SFA)

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Like most mammalian females, the human female has her physiology and behavior affected by post-partum hormonal changes. During breastfeeding, there is an increase in the production of oxytocin and prolactin accompanied by decreased levels of testosterone and estrogen. This hormonal modulation may be responsible for decreased sexual desire. From an evolutionary viewpoint, women who had a temporary

decrease in sex drive were less likely to conceive again, and therefore had a greater chance of their child surviving. From this premise, 192 women, 2-6 months postpartum, were evaluated in two groups: breastfeeding and non-breastfeeding. Each mother answered the Female Sexual Function Index (FSFI) questionnaire, which assesses the female sexual response in six domains: Desire, Arousal, Vaginal Lubrication, Orgasm, Sexual Satisfaction, and Pain. The breastfeeding group had a lower rate of sexual function ($m=26.5$, $sd=4.9$) than the non-breastfeeding group ($m=28.0$, $sd=5.1$), with this difference being significant ($p=0.018$). The decrease in desire received the lowest scores in the two groups. The breastfeeding group had lower levels of desire ($m = 3.8$, $sd = 1.1$) than women in the non-breastfeeding group ($m= 4.3$, $sd = 1.2$), with this difference being significant ($p= 0.006$). The results showed that breastfeeding is associated with a decrease in sexual function and sexual desire. This may have been important for human evolution in that it may have contributed to ensure adequate time between births so that ancestral mothers who could take care of their offspring, without exhausting their resources with coeval offspring, had greater success.

23. Exposure to cues of environmental harshness alters food preferences

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Humans are thought to have evolved in environments where food was often scarce. In particular, fruits and vegetables were seasonal and only available during short periods throughout the year. Capturing wild game was also challenging and would typically have involved high levels of physical activity and energy expenditure. In addition, when food shortages existed, there was an increased likelihood that one's food could be stolen by a competitor. Evolutionary theorists propose that, like animals, humans possess physiological and psychological mechanisms that trigger adaptive

responses to increase survival in the face of a particular environmental condition. In terms of foraging and food acquisition behavior, adaptive mechanisms would include specific sensitivity to current local resource availability and environmental cues of how this availability may vary. In this study we examined the impact of perceived environmental harshness on preference for 30 dietary items across the food spectrum of dairy, meats, vegetables, fruit, grains, and sweets (5 items per group). We showed images of these foodstuffs and measured scores of “desire to eat” each type of food for a sample of 126 participants. Participants were then randomly allocated to either a “safe” or “harsh” condition, in which they read a text depiction of a socioeconomic scenario that varied according to condition. Afterwards, they repeated the scoring of the 30 food items, presented in a different randomised order. We found a significant overall interaction between measure (pre-manipulation, post-manipulation) and condition (safe/harsh environmental cues). For individual food items we found a large number of significant interactions, particularly for items of high calorific value. After splitting food items according to relatively high and relatively low calorific value, we found a significant 3-way interaction between measure, condition and calorific value, such that there was a marked increase in desire to eat foods of high calorific value post-manipulation, but only in participants exposed to the harsh environment. Our findings are consistent with evolutionary theory which suggests that harsh conditions increase perceptions of resource scarcity, which in turn triggers changes in motivation towards eating certain kinds of food.

24. A comparison of romantic jealousy between men and women

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According to evolutionary theory, jealousy would have been an adaptation that, among other things, helped resolve problems in the uncertainty of paternity (for men) and providing resources to the offspring (for women).

From the outset, women have a much greater investment in parental care, as well as perhaps in loving relationships, when compared to the investment made by men. For this reason, it is assumed that the level of female jealousy is higher than the level of male jealousy. With the interest of investigating whether there were differences in the levels of jealousy between men and women, levels of jealousy of heterosexual couples in Pará-Brazil were measured utilizing the Escala de Ciúme Romântico (ECR- Romantic Jealousy Scale; Ramos, 2000). Jealousy was divided into 5 levels: (1) Least, (2) Mild, (3) Moderate, (4) Intense and (5) Excessive. 100 heterosexual couples participated in this research by answering the evaluation scale individually. We found jealousy in 100% of the participants and the results indicated that there are differences in the level of jealousy experienced by men and women, confirming the evolutionary hypothesis. The most prevalent level found in this research was Moderate for both sexes; however, women showed a 91% level of jealousy above Moderate (Moderate, Intense and Excessive) while men showed just 83% above Moderate. Thus, the hypothesis that women would be more jealous, or would have a higher level of jealousy than men was confirmed in this study.

25. Facial prominence for choosing social media photos: comparison between genders and areas of knowledge

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Nonverbal communication is commonly used to describe human communication events that go beyond written or spoken words. Through nonverbal communication, human beings express themselves by means of body language, facial expressions, appearance, distance between one individual and another, as well as through several other factors that are also capable of demonstrating peculiar characteristics of individuals. Facial prominence is characterized by the proportion of faces shown in the various images of communication media. This study aimed to compare genders and areas of knowledge in terms of facial prominence of photos hypothetically selected by participants for posting on Facebook based on

schematic drawings. University students (n=120) of both genders from exact and human science programs participated to compare the groups and verify the existence of any correlation between the choice of photos for themselves and for persons of the opposite sex. In relation to the facial prominence of photos chosen for themselves, statistical analysis revealed a significant difference between men and women from the exact areas (U= 309, p= .037), in that women chose photos with greater prominence. Regarding to the choice for the other, we ascertained that men prefer photos of women with most display of the body, whereas women choose photos of men with greater exposure of the face in the two areas studied. When comparing the different areas (exact and human sciences) for each gender, no significant differences were found in women (U=348.5, p = .134) and in men (U= 411, p = .564). A positive correlation was verified between the photo chosen for themselves and for the opposite sex in women in exact sciences (r=0.742, p = .0001). These data correspond to what is seen in the literature, where men normally present greater facial prominence than women do. Data shows that, even when people have the option to choose between different degrees of prominence, the same pattern shown in magazines or in social media is maintained. This peculiarity has normally been explained by attributing “cerebral” characteristics to men and “corporal” or emotional ones to women. No doubt, the significant role of culture and of biological aspects involved in this process cannot be discarded. The fact of attributing greater dominance to photos with a higher rate of facial prominence may indicate that men could look for this attribution in general. The results indicate that women in exact areas, with greater facial prominence, have characteristics of greater cerebral masculinization, being more systematic and evaluated through closer photos as being more “cerebral” and “dominant”. This paper is characterized as an original study, since no reference to studies between facial prominence and area of knowledge was found in the literature review. Based on the data obtained, it was possible to conduct an analysis among photos to be posted hypothetically on a relationship site for both genders and areas of knowledge (exact and human sciences), thus obtaining pertinent information related to nonverbal communication.

26. Human affective response to cooking fire scents (SFA)

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Controlled use of fire has played a central role in human evolution. It yielded several benefits like warmth, light, scaring away predators and cooking. Processing food by heat enhances the availability of energy substantially and denatures microorganisms and toxins. However, besides the direct threat of the heat, fire represents a potential hazard due to toxic chemical compounds in fire smoke, especially carbon monoxide, which might be inhaled. Since women avoid health threats rather than men we expect gender-related preferences of fire smoke. In this study the olfactory perception of smoke flavors and the affective emotional response is investigated for the first time. Using the “emotion and odor scale” method 114 young adults (56 women and 58 men) rated five different smoke flavors using 25 affective terms on scales from 0 to 200. Stimuli were presented in the form of “sniffin’ sticks”. Additionally, olfactory function (odor threshold, discrimination and identification performance) was assessed and subjects were asked about their behavior in the presence of controlled fire, for instance campfire. Factor analysis of “emotion and odor scales” ratings result in five coherent factors, “appetite”, “relaxed”, “excited”, “disgusted” and “sad”. Analysis shows controversial affective responses to the perceived fire scents: in women flavors evoked more “disgust” and more “relaxation” than in men at the same time. The questionnaires indicate stronger attraction of men to controlled fire than women, as men report significantly higher frequency of residing near controlled fire and feel more comfortable thereby. Whereas men attend to feel better than women when viewing controlled fire, reports suggest no gender difference in olfactory and auditory perception. Furthermore, subjects prefer warmth created by fireplaces compared to other heating systems. Conform to the biological significance of fire for humans, the study emphasizes the pleasure it brings to both sexes and indicates male preference to approach and view fire.

The clearer aesthetic effect to men suggests sensual adaptation in vision but not olfaction, which should be topic of future studies.

27. Future discount and reproductive cues (SFA)

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“Future discount” refers to an organism’s preference for lower, immediate gains over larger, later gains. Although future discount can be considered adaptive, because chances of losing gains increase as a function of time, studies have focused on individual differences in future discounting. Our objective was to evaluate change in future discount due to change in context represented by the availability of reproductive and parental opportunities. We subjected 211 students, 17-52 years old, 105 males, to an experimental situation in which they: 1) were presented with a set of problems in which they had to chose between a small amount of money tomorrow and a larger amount at a later date. This procedure allowed us to calculate their baseline future discount rate; 2) had to rate the attractiveness of sexy photographs of people of the opposite sex (reproductive opportunity) or babies (parental opportunity); 3) were presented with a new set of monetary problems equivalent to the first one, allowing us to calculate the experimental future discount rate; 4) completed the Multidimensional Scale of Sexual Strategy. The results showed that reproductive opportunity increased men’s but not women’s future discount. Parental opportunity increased both men’s and women’s future discount. Men had significantly higher scores in the short term strategy and sexual behavior subscales of the Multidimensional Scale, but did not differ from women in the long-term strategy subscale. There was a positive correlation between future discount and the sexual behavior subscale only for men. We concluded that reproductive and parental opportunities may affect the future discount of both men and women. The effect is modulated by characteristics of the stimuli, the individual and the context and does not seem to be related to the individual’s sexual strategy.

28. Correlation between partnership and sexual function index during pregnancy

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During pregnancy, biological and psychological changes may influence both women's and men's sexuality. This transition imposes new adaptations, especially for women, as a search for a closer relationship when the sexual life of the couple changes may lead to sexual dysfunction. We analyzed the Sexual Function Index of pregnant women from a public hospital in Brazil. 102 participants were recruited among patients from 18 to 38 years old, out of pregnancy risk, who had sexual intercourse within four weeks, and were in a long-term relationship for at least two years. Partnership quality was accessed by the Mate Choice Questionnaire (which investigates socioeconomic information, partnership, reproductive history, mate choice criteria, and frequency of sexual intercourse) and sexual function by the Female Sexual Function Index (FSFI; a nine-domain scale which accesses the female sexual response regarded to Sexual Desire, Arousal, Vaginal Lubrication, Orgasm, Sexual Satisfaction, and Pain). 58.8% had at least two sexual relations per week, 37.3% had from three to six sexual relations, but only 4% had more than six per week. Partnership scores were correlated with all other factors, including the FSFI domains. The FSFI general score was lower than the normal expected, suggesting risk of sexual dysfunction. Correlations were found between Orgasm and Desire, Orgasm and the question "how many sexual relations that depend on participant's will", and between Orgasm and Relationship Satisfaction. Intriguingly, even in the absence of explicit interest in sexual relations, pregnant women were able to experiment Lubrication, Orgasm, and Satisfaction when engaged in sexual intercourse. Despite all physiological and anatomical changes during primate pregnancy, leading to a decrease in libido level and sexual function, the human female switched for new behavioral strategies to keep a close relationship with her partner during

this period.

29. Sociosexuality influences intrasexual variation in mate preferences for short-term and long-term partners differently in men and women: evidence from Brazil (SFA)

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Mating intelligence, particularly mate preferences, are set of evolved cognitive functions responsible for interpersonal evaluations and decision making biases that have a built in plasticity. Individual variation in mate preferences is, in part, conditional to sexual strategies adopted. Sociosexuality reflects one of such differences in sexual strategies: unrestricted individuals invest more efforts in mate search and short-term partners, while restricted individuals invest more efforts into maintenance of long-term partnerships. In fact, unrestricted individuals tend to seek out romantic partners who are more physically and sexually attractive and who possess higher social visibility. In contrast, restricted individuals prefer romantic partners who are more kind/affectionate, responsible, and faithful. However, it is not known whether these findings hold cross-cultural replication, and if this variation keeps in both, short term and long term context. We tested the relationship between mate preferences for basic personality and physical traits and sociosexuality in 154 men and 237 women (age= 20.3; SD=2.8) recruited at the University of Brasilia, Brazil. Factor analyses revealed three factors in preferences for preferences on the long-term relationship condition, which explained

61.6% of the total variance: Good-look, Good-parent, and Good-partner. In short-term condition there were two factors, explaining 62.5% of variance in preferences: Good-look, and Good-parent/partner. When we tested for sex differences in these factors, in both the short-term and long-term condition, except for the Good-look factor, there were significant differences in all other factors. Men valued more the Good-look factor in long-term condition than women, while females showed higher preferences for the Good-parent and partner factors in both conditions. In order to test the within-sex variation, we used non-parametric correlations between the factors and individual SOI. In women, all SOI subscales correlated negatively with factors Good-parent and Good-partner and parent in the long and short-term conditions, respectively (Kendall's Tau between $-.099$ to $-.266$). In men, in the long term relationship context all SOI subscales correlated positively with the factor Good-look and negatively with the factor Good-partner. We conclude that in women, the higher the sociosexuality the less female typical preference they have, while in men the higher sociosexuality the more male typical and lower female typical preferences they express. Individual level of sociosexuality can thus modify sex-typical, though not sex-atypical partner preferences in women, while in men both sex-typical and sex-atypical preferences are affected. This conclusion based on a Brazilian sample basically supports the previous literature, pointing to a more universal pattern.

30. Correlation between the Female Sexual Function Index and socio-demographic characteristics (SFA)

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Among humans, sexual behavior involves the pursuit of pleasure (orgasm) as well as assisting in emotional bonding between partners, going beyond their reproductive function. Orgasm encourages women to search for sex, indicates satisfaction, facilitates establishment of an intimate relationship with a reproductive partner, and can contribute to fertilization. Once

bonding is developed between a female and a reproductive partner, both can take better care of offspring, increasing their chances of reproductive success. Based on the influence of the quality of sexual life in the reproductive success of women, we investigated which characteristics of the participants might be correlated with higher female sexual function. The participants were 49 women of reproductive age, 18-40 years old, and were residents of the city of Belém. The instrument used was the Female Sexual Function Index (FSFI), a questionnaire consisting of 19 questions that assess the domains of sexual desire, arousal, lubrication, orgasm, sexual satisfaction, and pain in the last 4 weeks of sexual activity. The sociodemographic variables were age, kind of health care program they were supported by (public or private), weight, length of relationship, number of children and family income. These were correlated with the total score of the FSFI and its domains. The six domains of the the FSFI were all inter-correlated. Participants had overall score of 26.37, below the cutoff score 26.55 being considered likely to present sexual dysfunction. No correlations between sociodemographic variables and the investigated domains were found. The analysis of domains indicated strong and highly significant correlations between arousal, lubrication, orgasm, sexual satisfaction, and overall pain score of the FSFI. However, no correlation between these domains and Sexual Desire was found. With the exception of the Sexual Desire domain, other domains of the FSFI are strongly associated with each other. The results did not reveal connections between sociodemographic variables and female sexual function scores, indicating that in this population the quality of sexual life is more about the components of sexual life itself than related to external factors.

Social Program



Friday 8th August, 2014

Holes and Igarapés

Boat trip around the islands opposite Belem city.