

ISHE Plenary Addresses

Ullica Segerstrale
Illinois Institute of Technology

The Rebel as Scientist: Bill Hamilton Against the Grain

Bill Hamilton was a man against the grain, extremely stubborn, very informal, bursting with ideas, always looking for universal principles across naturalist observations, defending underdogs and underdog theories, and relishing in evolutionary oddities and paradoxes. Bill was typically unsatisfied with prevailing orthodoxy, as evidenced by his quest for the genetics of altruism in a sensitive post-war climate, his later parasite avoidance theory of sex, and many other iconoclastic ideas. A physical and intellectual risk taker, he loved challenges, never happier than on an expedition hacking forth a new path through the jungle, or faced with an unexpected problem. He retained a boyish dislike for authorities, and ended up challenging both the scientific and medical establishments, and even the Church. But in many respects, Hamilton simply behaved as many scientists would - if they only could - relentlessly pursuing his goals, no matter what.

Randolph M. Nesse
The University of Michigan

An Evolutionary Nomothetic Framework for the Idiographic Study of Affect

Our knowledge that the natural selection shaped motivational mechanisms to maximize reproductive success should help us understand affects in individuals, especially when combined with evidence that affect varies as a function of the rate of progress towards valued goals. However, individual goals show huge idiographic diversity. Some people most want love, others admiration, money, sex, or moral superiority. Worse yet, motivation varies profoundly across the life course and with different life situations. Much of the variance in studies of affect is intrinsically idiographic, and many of our nomothetic studies measure only the shadows of the actual causal factors. An evolutionary perspective provides a nomothetic framework for scientific study of idiographic data, but the efforts of many of us will be needed to try to bridge this gap.

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How Gene X Environment Interactions Can Shape Behavioral and Biological Development in Rhesus Monkeys, Humans, and Other Primates

Recent research has found marked individual differences in patterns of rhesus monkey biobehavioral development throughout the life span. Approximately 20% of monkeys growing up in naturalistic settings consistently display unusually fearful and anxious-like behavioral reactions to novel, mildly stressful social situations throughout development; another 5-10% are likely to exhibit impulsive and/or inappropriately aggressive responses under similar circumstances. These distinctive behavioral patterns and their biological correlates appear early in life and remain remarkably stable from infancy to adulthood. Both genetic and experiential mechanisms are implicated not only in the expression of these patterns but also in their transmission across successive generations of monkeys. For example, a specific polymorphism in the serotonin transporter gene is associated with deficits in infant neurobehavioral functioning and in juvenile and adolescent control of aggression and serotonin metabolism in monkeys who experienced insecure early attachments but not in monkeys who developed secure attachment relationships with their mothers during infancy (“maternal buffering”). Moreover, because the attachment style of a monkey mother is typically “copied” by her daughters when they grow up and become mothers themselves, similar buffering is likely to occur for the next generation of infants carrying that specific polymorphism.

Karl Grammer
Ludwig Boltzmann Institute for Urban Ethology

Embodied Communication Systems: An Evolutionary Perspective

In recent years, embodiment has found enormous theoretical attention in language, speech, and communication research in general. Converging insights are accumulating in the cognitive, neurocognitive and evolutionary based behavior research disciplines, which indicate that communication among social partners cannot be reduced to the transfer of abstract information. They reveal shortcomings of 'classic' communication models that emphasize symbolic information transfer, in that they neglect the decisive role of non-symbolic qualities transmitted by the body and especially in face-to-face communication. In this talk I will outline a new evolutionary based dynamic communication model. I will demonstrate this model on the analysis of communicative feedback in dyadic interactions, which refers to unobtrusive (usually short) vocal or bodily expressions whereby a recipient of information can inform a contributor of information about whether he/she is able and willing to communicate, perceive the information, and understand the information. I will identify the issues connected to feedback, present new data and suggest a control architecture for the simulation of feedback in human machine interaction.

TALKS

71 LMA

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VISIBLE AND OLFACTORY CUES OF OVULATION IN WOMEN

Recent studies show that hormonal shifts in the menstrual cycle have an impact on female social behaviour, casting some doubt on earlier assumptions related to concealed ovulation. We investigated whether perceived attractiveness in women would be higher during the fertile window in comparison to the luteal phase of their menstrual cycle. Standardized pictures and sweat samples of 20 females were taken every day during an entire menstrual cycle. Results showed that male and female raters demonstrated a significant preference for the pictures taken during the fertile phase. Our findings support earlier evidence reporting a peak of attractiveness during ovulation. Visible and olfactory cues related to the perception of attractiveness might have evolved as adaptations to enhance females' chances to access good genes when conception is most likely.

10 LMA

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PERSONAL DISTANCE: AGE AND GENDER DIFFERENCES IN MODERN RUSSIA

In this ethological field study we investigated the influence of culture, gender, and age on proxemic and haptic behavior in one of modern Russian megapolices (Moscow taken as an example). The Hall's hypothesis that proxemic and haptic behavior vary as a function of culture was tested on Russian sample. The data on 1720 individuals, or 860 dyads was collected. Mean individual distance is 16,14 in., female dyads interact at closer distances than do opposite-sex dyads and distance in opposite-sex dyads less than in male dyads. The quality of relationships between interactants influence a distance and touch in the opposite-sex dyads. Gender-composition influence touch and eyes contact. Adult-like spatial norms are first exhibited around the time of puberty and dyadic distance increases with age. On one hand regard Hall's notion that Russia belongs to contact cultures (eye contact. touch, body orientation, on the other hand not (distance). This study was supported by Aldis Fund Award.

51 – 1 of 2 papers for:

Symposium: Ethological observation in psychiatric populations

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THEORY OF MIND AND NON-VERBAL BEHAVIOUR IN SCHIZOPHRENIA

The ability to cognitively represent one's own and other persons' beliefs, feelings and intentions has been termed "theory of mind" (ToM). ToM comprises a psychological mechanism that evolved in apes and humans to deal with an increasingly complex social environment. A wealth of studies has shown that patients diagnosed with schizophrenia perform poorly on experimental ToM tasks. The putative association of ToM abilities with patients' actual social behaviour is, however, only partially understood. Theoretically, if ToM evolved in response to social selection pressures to increase an individual's so-called "inclusive fitness", it would be plausible to assume that impaired ToM in schizophrenic patients should have a measurable impact on their behaviour in social interactions. In this explorative study, standard ToM picture stories were given to a group of 50 patients with schizophrenia spectrum disorders. The patients' nonverbal behaviour was measured using the Ethological Coding System for Interviews (ECSI; Troisi, 1999). In addition, intelligence, executive functioning and psychopathology using the PANSS were assessed. Preliminary findings suggest that patients' nonverbal prosocial behaviour correlates with ToM, verbal intelligence and cognitive flexibility. Most remarkably, in a regression analysis ToM was the only variable remaining in the equation to predict prosocial behaviour in patients with schizophrenia spectrum disorders. These results point to an important link of social cognitive abilities with the actual non-verbal behaviour of patients with schizophrenia.

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AGGRESSION, DOMINANCE STATUS AND INDIVIDUAL DISTANCE IN RUSSIA ADOLESCENTS: OBSERVATIONAL STUDY

The goals of this paper are: to investigate the influence of aggression behaviour and dominance status of an individual on his personal space during communication with others among Russian adolescents. Besides, to see the influence of culture, gender and age on aggression and spatial behavior in modern Russian megapolices. Data have been collected in two cities: Moscow (Central Russia) and Vladikavkaz (Northern Caucasus). The combination methods used in the study: direct ethological observations of naturally-occurring dyadic interaction, photographing, interviewing and questioning the objects of observations. The object of our study was the groups of children from 11 to 17 ages. The investigation have

been conducted in regular schools. Data on 400-450 pairs of naturally-occurring dyadic interaction both in Moscow, and in Vladikavkaz (in each one) have been collected. We have observed interacting persons within the limits of group. The following parameters were measured - distance in dyads, orientation in dyads, touching measure, eyes contact measure, strength of the voice, and questions about age, type of relationships, subject of conversation and topic of conversation. Every child also filled in questionnaires on aggression, dominance and social status among peers. The results supported our hypotheses about influence of culture, gender and age on aggression and spatial behavior. So, the minimal distance is observed between two girls, in the mixed pairs the distance of communication depends on quality of relations between cooperating partners. Also girls practice tactile contacts significantly more often than boys, but cultures differences are observed. Aggressive behavior influences the social status of each child and also is reflected in popularity among peers and spatial behavior. The following hypothesis will be discussed: for children with raised aggression the distance of communication is less, i.e. they break a distance of communication; for nonaggressive children the distance increases.

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HOW SUCCESSFUL HUNTER-GATHERERS CHILDREN ARE IN MULTI-ETHNIC ENVIRONMENT OF BOARDING SCHOOLS: THE HADZA CASE

The goals of this paper are: to check for sex differences in 2D:4D ratio in a sample of African children and adolescences from traditional hunter-gatherers, agricultural and pastoralist societies; to examine correlations between finger length ratio and different types of aggression and post-conflict behavior in boys and girls; and to see if cultural-specific variations in dominance-egalitarianism are related to sex differences in 2D:4D ratio and behavioral patterns. Observations were carried in Endomaga primary boarding school in Northern Tanzania. There were 219 children, ranged from 7 to 20 y. in our sample (123 Hadza, 35 Datoga, 61 Iraqw). Significant sexual dimorphism on finger length ratio was found for the whole sample from Endomaga school. Hadza children differed significantly from their peers Datoga and Iraqw. These differences were more expressed for girls. Particularly, these were true for post-conflict. Hadza girls reported a lower frequencies of constructive conflict resolution and third-party intervention compared to Iraqw peers. Hadza girls rated themselves lower on physical aggression compared to Datoga. A significant correlation was obtained between finger length ratio and physical aggression: for boys a positive correlation between a finger length ratio (on both hands) and self-rating on physical aggression was demonstrated and for girls a negative correlation between a finger length ratio (right hand only) and a frequency of physical aggression on previous week was reported. Sex differences in aggressive and post-conflict behaviour were most evidently expressed in Hadza. Social behaviour of schoolchildren was mainly influenced by age, as well as by combination of factors: age x ethnic origin, age x number of brothers/ sisters, age x finger length ratio.

Individual social status of Hadza children (both boys and girls) was quite high: In some classes Hadza children were rated by others as most popular among same sex peers. Our data supported the evolutionary theories of reproductive success and parental investment: boys were more competitive than girls; physical aggression in girls was much more variable and dependant on characteristic of social organization (egalitarian – hierarchic) and the degree of male-dominance.

Supported by RFHR, # 04-01-00244a.

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AVOIDANT PERSONALITY DISORDER: A DIAGNOSTIC OF DARWIN'S INVALIDITY

Darwin's four decade invalidity is a defining characteristic of his life. He rarely ventured from his estate, and he carefully controlled visitations. This departure from English gentleman norms was excused by the indisposition of an undiagnosed illness. The fine-grained research of psychiatrist Ralph Colp, Jr suggests that he suffered from Chagas' disease, contracted on the Beagle voyage, and from a highly labile parasympathetic nervous system that accounts for the psychosomatic element of his indisposition as well as some peculiar psychological conditions. This paper builds on Colp's findings by adding a third element, the Avoidant Personality Disorder. AvDP is characterized by DSM-IV as extreme shyness, exaggerated sensitivity to rejection, strong self-deprecation, and striving for acceptance. The diagnostic deals with puzzling aspects of Darwin's behavior and opinion that Colp is unable to include in his assessment, eg, his long secrecy about his transmutationism, his exaggerated claims of priority and of discovery, his dependence on supporters, his dismay at the thought of engaging in face-to-face debate, his endless revisions of the Origin, and his misrepresentations of the history of transmutationism and of the state of the biological sciences of his time. The paper concludes with some suggestions about a new, revised 'image' of this extraordinary man.

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REPRESENTATION AS A FACTOR INFLUENCING SEX DIFFERENCES

It is known that sex differences exist on mental rotation tasks and in preferred navigation strategy. In three studies, we explore the effects that the level of abstraction has on the magnitude of the sex difference. In two different abstract environments, we found that the size of the sex difference is related to the realism and abstraction level of the environment.

To confirm this finding, we performed a third study using the Vandenberg and Kuse mental rotation test. When the line drawings of the test were replaced with photos, the sex difference significantly decreased. Thus, as well as time being a factor in sex differences, we have found evidence that the level of abstraction also influences the amount of difference.

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HUMOR AND THE AMERICAN PRESIDENT: AN ETHOLOGICAL EXPLORATION OF ALEXANDER'S HUMOR FRAMEWORK

Humor and the Presidency has long been a topic of interests to journalists and pundits who have seen the value of humor in facilitating communication between the President and the public. However, to the knowledge of the authors, it hasn't been the subject of serious study. This study will use the framework put forward by Richard Alexander in 1986 suggesting that "humor is invariably either direct or indirect ostracism" (p. 253) to classify the different uses of humor by President George W. Bush in political settings. Specifically, we will consider the President's use of humor in three different circumstances: his 2004 Presidential debate with John Kerry on international security issues; a press conference; and a town hall meeting. The Presidential debate pits two similar status individuals, the President and presumed usurper, against each other in as competitive situation as the election campaign allows. A press conference will pit the high status President against a lower status, yet unfriendly press corp. Finally, the town hall meeting will place the President in the midst of a friendly crowd of supporters. While this study is exploratory, it is expected the different situations will elicit different types and uses of humor by the President on the basis of his status and whether the individual/group are in-group or out-group.

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APPEARANCE EFFECTS ON LEGISLATIVE CAREERS

In previous research (Schubert & Curran 2002), we considered the possibility that stereotypes with respect to facial appearance and social identity influence political factors that affect the course and longevity of political careers. In a study of 40 randomly selected members of the U.S. House of Representatives from the 105th Congress (20 males and 20 females), we examined the effects of stereotypes on incumbency advantages associated with uncontested re-election, district competitiveness, campaign fund raising and victory margins in the popular vote, finding that stereotypes account for 32% of the variance in incumbent

electoral competitiveness. We now extend this analysis to include the qualitative effects of stereotypes on the course of legislative careers. We estimate a model in which factors of social identity, i.e. gender, race/ethnicity, and age, and facial appearance - attractiveness, dominance and neoteny - bear on trait attributions of strength and warmth (Funk 1997), and these attributions, in turn, affect political careers. Experimentally developed ratings of candidate appearance and trait attributions are brought to bear on observational data describing the actual fortunes of our sample of 40 House members. The experimental ratings were achieved using a within subjects design with 106 respondents evaluating the male House members and 126 respondents evaluating the female House members. Our analyses includes data from the 2000, 2002, and 2004 elections for the surviving members of that sample and otherwise track the careers of all members from our original study to more broadly consider stereotyping effects on legislative careers. In addition to the four factors of electoral competitiveness, we consider prestigious committee assignments, chairmanships, leadership positions and the pursuit of other offices outside the House.

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DIFFERENT STROKES: SEX-DIFFERENCES IN COMPETITIVENESS HAVE DISAPPEARED IN SWIMMING BUT NOT RUNNING

It remains unclear whether sex-differences in competitiveness originate from social conditions or evolved predispositions. To address this issue, I have shown that population-level analyses of relative sports performance can estimate sex-differences in competitiveness. Moreover, I have shown (1) a robust sex-difference, with proportionally 2-4 times more males running relatively fast in all U.S. populations and that (2) this difference has not diminished since the mid-1980s, despite increased opportunities for females. Here I show that the sex-difference in relative performance for U.S. swimmers was substantial in the 1970s but has now disappeared. The strikingly different patterns in swimming and running imply that, although sex-differences in competitiveness may indicate evolved predispositions, they also reflect social and developmental factors.

64 LMA

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THE PERCEPTION OF RISK BY PEOPLE FROM DIFFERENT COUNTRIES

Nowadays the problem of different endangering and hazard factors seem to be important. Is there any difference in risk perception between different people and what is this difference

caused by? These are the main questions of our research. The first part of our work analyses risk perception by representatives of different countries and cultures. The research took place in many countries; we used the questionnaire proposed by Hungarian Academy of Sciences. A list containing 21 various hazard factors was given to the respondents who needed to rate each item regarding the danger posed by the hazard in the respondent's society. In this research we used the results taken in Russia and in Israel. By analyzing the results we found differences that might be caused by social and cultural order of each country. The highest ratings in the Israel group were given to terrorism, and in the Russian group to substance abuse (drugs, tobacco, alcohol etc.). The risk of contagious diseases was rated higher by Russian respondents than by Israelites. Also Russians were more likely to be afraid of AIDS or mental illness, while ratings of armed conflict risk are much higher in the Israel group. These data are evidence of political, social and cultural influence on risk perception.

The second part of the research was devoted to deeper analysis of Russian group. Hazard factors in the list can be classified in two groups: external that doesn't depend on individual (e.g. natural disasters) and internal that depends on individual (e.g. alcohol or drug abuse). The hypothesis was that differences within the group might be caused by the level of personal control (locus of control). In order to compare the results within Russian group the respondents were also given a questionnaire that measures personal control. The results were as follows: those people that possess high level of personal control have low scales in internal risk factors and high scales in external. Those that possess low level of personal control are more likely to be afraid of internal risks. Thus, we found that risk perception depends not only on social but also on personal and cultural factors.

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FEMININE MOVEMENTS AND MANNERISMS IN ADULT WOMEN

Feminine movements and mannerism are defined as movements and mannerisms seen in both women and men but which are sex-skewed and seen more often in women than men. They are rarely seen in pre-pubertal girls or post-menopausal women. They can be and are often deployed as discretionary, directional, fleeting courtship signals. They are very difficult to capture on tape or film to study. To collect this data, several thousand hours of cable television (most Latin American) were watched over a 10 year period. Approximately 160 hours were selectively recorded in sequences of several minutes each. Of the 160 recorded hours, 12 minutes were found, which contained hundreds of examples of feminine movements and mannerisms, most of which last only a second or two. Examples of the raw data will be presented. The task is to define, classify and categorize the movements and mannerisms. Some preliminary principles already seem evident from the data and will be discussed, such as distal joints flex more than proximal joints and lots of axial rotations.

Many of the movements appear to derive from submissive motor patterns as well as juxtaposed or rapidly alternated approach and avoidance behaviors.

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EXPLORING RESOURCE ALLOCATION USING 'VIRTUAL ETHOLOGY'

New technological advances provide researchers with an exciting opportunity to explore ethology in novel ways. One method is to use advanced simulated environments like video games that allow researchers to observe the way participants interact with varying aspects of the games, and with other players. We call this use of technology "virtual ethology." As an example, we will present our program of research using "The Sims," which is a popular game where players purchase and maintain a house and its furnishings, engage in social relationships, raise families, and pursue an occupation. Our initial findings support our hypotheses that men will allocate resources towards high-status items, whereas women will allocate resources towards necessities.

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WHATEVER HAPPENED TO THE PHENOTYPE-GENOTYPE DISTINCTION?

Molecular genetics has so entered the genome that it has effectively become a descriptive science (similar, say, to embryology), detailing the highly complex action of molecular events from DNA to RNA through post ribosomal protein interactions. The genome thus exposed is now in fact a phenotype, that is, something more or less observable. Where then does this leave sociobiology, for example, where 'selfish' genes had been reified as if they had little minds of their own—and indeed a causal system had been implied with genes as the initiators of just about everything (mini gods, if you will). Philosophy is of some help here, especially Hegel, who pointed out that *essence* (e.g., the genome) and *appearance* (the phenotype) contain one another in an 'identity of opposites': all appearance contains essence, and essence is the promise of appearance (as the acorn promises the oak). In Hegel's a-causal logic A can equal NotA, and this intimation of nonduality makes all the difference.

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DOCUMENTING THE EMERGENCE AND STRUCTURE OF AN URBAN PROXIMAL PERIPHERAL COMMUNITY

Behavioral ecology posits the salience and importance of peripheral communities as loci for optimal transformation of ESS in human populations. Typically, peripheral communities have been located distally from populated urban centers. However, proximal peripheral communities can be inadvertently created as a byproduct of economic and social policies such as gentrification and empowerment zones. We conducted a descriptive study of such a created peripheral community (Cass Corridor) in Detroit, Michigan. Far from becoming an enclave for affluent urban pioneers, Cass Corridor appears to be on a trajectory to becoming a peripheral community. The scholarly and practical implications of intentionally creating proximal peripheral communities are discussed.

16**Erwin Geerts, Elske Bos, Titus van Os, and Netty Bouhuys**

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NONVERBAL COMMUNICATION PREDICTS STRESSFUL INTERPERSONAL EVENTS IN REMITTED DEPRESSED PATIENTS

Lack of similarity between the displayed levels nonverbal involvement behavior of depression-prone people to those of interviewers during a clinical interview predicts the onset and course of depression. We hypothesize that this relationship is explained by negative interpersonal events that result from lack of nonverbal similarity in the interactions of depression-prone people. From videotaped baseline interviews we registered the nonverbal involvement displays of 101 remitted depressed patients and of interviewers. The patients were followed up to 2 years. Lack of nonverbal similarity (cox regression: $p=.031$) and interpersonal events (cox regression: $p<.001$) predict recurrence of depression. Lack of similarity also predicts interpersonal events (cox regression: $p=.003$). The events mediated the association between convergence and recurrence of depression. The findings indicate that nonverbal communication underlies the stressful events that in turn provoke a (new) depressive episode.

75 LMA**Jitka Hanusova**

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ACCURACY OF JUDGMENT OF CATTELL'S PERSONALITY TRAITS BASED ON FACE APPEARANCE

We tested the ability to accurately judge factors from the Cattell's 16 PF Questionnaire from facial photographs and investigated the role of attractiveness and masculinity in the attribution processes. 122 female and 73 male students of the Faculty of Humanities, Prague rated sociability, emotional stability, dominance, conscientiousness, social boldness, attractiveness and masculinity from photographs of 138 female and 80 male students of the Faculty of Science. Masculinity was additionally measured anthroposcopically. Only social boldness was accurately judged. We discuss the possibility that attributions of personality traits occur on a higher "secondary" order of factors. Both masculinity and especially attractiveness are likely to affect the attributions of personality traits, but they do not explain the whole effect of the judgment accuracy.

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HOW TO MEASURE JEALOUSY - INTRODUCING A NEW PROJECTIVE METHOD

The intimacy of human sexual behavior forced us to ask how to obtain the most truthful and opened information from respondents. For this purpose we created a projective method – an open-ended story with a sexual plot followed by a questionnaire. The subjects are asked to report on the behavior of the actors in the story whereby we suppose them to report on their own sexual tendencies. This method could be used as a good supplementary tool to the questionnaire and interview procedures. The story shows an everyday life situation: A female main actor has a long-term relationship of moderate satisfaction. She goes for a business trip, where she meets her attractive male colleague who is apparently interested in her. Her primary partner does not completely agree with the trip. The story has an open end; when she and the group of colleagues are out clubbing, later the group is leaving but the male colleague insists to stay out together with her. To make the story more projective, the characteristics of main actors, man and woman living in the relationship together, are not described in detail and the tendencies for mate-retention and the extra-pair desire are just lightly indicated. We asked 99 male and 115 female subjects (passengers in a train or a bus, aged 20-39) to read the story, to finish it and to fill out the 24-item questionnaire linked to the story and the behavior of the actors. After the test the subjects filled in a 13-item questionnaire of their own socio-economic status. Additionally they completed the Extramarital Behavioral Intentions Scale (EBIS, Buunk, 1991), Anticipated sexual jealousy scale (ASJS, Buunk, 1991), Interpersonal Jealousy Scale (M, Mathes, 1986) and Socio-sexual orientation inventory (SOI, Simpson, 1991) to establish the convergent validity of our projective test. The factor analysis shows that the way the subjects finished the story

depends mainly on 2 factors: 1) Whether the female actor likes her colleague, 2) How close her intimate interaction with him will be. How males should react in this situation depends on 2 factors: 1) How intensively his mate-retention behavior should be, 2) Which kind of mate-retention tactics to use – the positive or the negative approach to his female partner. The correlations of the reports about actors of the story (projective test) with the subjects' reports of the own behavior (attached questionnaires EBIS, ASJS, M, SOI) indicate the test to be a useful method of a projective character. Additionally, the attached questionnaires on subjects' jealousy and infidelity (EBIS, ASJS, M, SOI) with respect of their sex and their socio-economic information give interesting suggestion for further consideration. Finally, the improvement and application of the projective test in the research on "Changes in sexual behavior across the menstrual cycle of partners living in permanent relationships" can be discussed.

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DISAGGREGATING BIOLOGY AND CULTURE THROUGH COVARIANCE MODELING

The paper is an examination of the uses and potential uses of covariance structural models in investigating both biological and cultural causes of political behavior. Such models can be used usefully on either individual or aggregated data to measure the impacts of biological, social, and cultural variables on acts committed in the political sphere and separate out conflicting influences. Two current examples of such covariance models will be used to determine the extent to which similar models could be used to investigate biological causation in human political behavior.

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HOW MIGHT NATURAL SELECTION HAVE SHAPED RESOURCE ALLOCATION STRATEGIES?

Although it seems clear that natural selection shaped the capacity for varying investment of both energetic and material resources, there are differing hypotheses regarding its origins and little evidence about what degree of variability would be optimal. By implementing a computer-based model with multiple agents, I was able to compare numerous variable investment resource allocation strategies. Results over many runs indicate that the success of a given investment strategy is highly dependent on the environment of investment, with no strategy emerging as dominant across environmental manipulations. Additionally, outcomes varied dramatically from run to run with the best strategy on average being

substandard on some runs. This may help to explain why natural selection has left such large individual differences in mood regulation mechanisms.

82 LMA

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AN INVESTIGATION OF MARITAL SATISFACTION: ASSORTATIVE MATING AND PERSONALITY SIMILARITY

This study researched married couples using ideas from assortative mating and mate selection, to examine one aspect of partner similarity, personality. The research questions focused on the potential for choosing a partner based on certain personality characteristics and then examining how similarity, or dissimilarity, on personality variables affects how reported marital satisfaction. A five-factor model of personality was used. Preliminary data analysis indicates significant correlation for the personality variable of Openness to Experience. The variable of Extraversion appears to significantly impact the regression model, indicating influence on marital satisfaction. The author will discuss the potential clinical significance of these findings.

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MALE COMPETITION, ECONOMIC TRANSITION, AND SEX DIFFERENCES IN MORTALITY RATES

Across the human lifespan, mortality rates are higher for males than females, with a maximal difference at sexual maturity, an expected result of sexual selection. We expect that the transition from centrally planned to market economies in Eastern Europe inflated the sex difference in mortality rates, due to economic uncertainty and increasing variation and skew in social status and resources. We confirmed this pattern in 14 Eastern European nations. Although the magnitude of inflation varied across nations, it was typically considerably larger compared to 12 countries in Western Europe. Further analyses indicated that an increase in both risky male behaviors and physiological susceptibility contributed to this change.

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AN INSIDER'S CRITIQUE OF EVOLUTIONARY PSYCHOLOGY

Criticisms of the central tenets of Evolutionary Psychology are divided into two categories 1) arguments that are fraudulent, weak, or unscientific; and 2) arguments that appear to have merit. Among the former are creationist attacks, concerns with politically correct ideology, and unfounded fears of excessive adaptationism, reductionism and determinism. Of more interest are "insider critiques" that call attention to specific, and correctable tendencies in the EP paradigm, such as the over emphasis on modularity or EP's lack of emphasis on 1) developmental perspectives on brain and behavior, particularly the developmental plasticity of such systems, 2) neurological perspectives that demonstrate underlying neurological structures supporting the hypothesized mental modules, and 3) comparative perspectives demonstrating the existence of ancestral structures in mammalian brains.

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CONSCIENTIOUSNESS VERSUS THE MODULAR MIND

Data from four samples from California State University–Long Beach using two different IQ tests and a total N of 460 are presented indicating that conscientiousness is independent of general intelligence. Neuropsychological data are presented from a variety of studies linking conscientiousness/effortful control with inhibitory control of modular mechanisms of aggression, ethnocentrism, sexual arousal, moral outrage and emotion regulation. It is suggested that the adaptive function of conscientiousness/effortful control is to expand the universe of potential costs and benefits for behavior beyond evolutionarily recurrent, implicit costs and benefits that are built into modular mechanisms. This enables humans to base behavior on explicit representations of costs and benefits that are sensitive to rapidly changing, non-recurrent human environments.

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TRAIT PERCEPTION AND SMILING BEHAVIOUR

Sex differences in reproductive strategies could be reflected in the way smiling affects the perception of personal attributes in same and opposite-sex faces. Neutral and smiling pictures were rated over ten dimensions: attractiveness, generosity, trustworthiness,

competitiveness, health, agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience. The type of smile was also recorded. Although smiling faces received significantly higher scores than neutral ones for several dimensions, differences in judgements between neutral and smiling greatly varied with the sex of judges, the sex of faces, and the type of smile. The fact that men and women did not respond to smiling in the same way suggests that the mechanisms involved in smile perception are subject to different selective pressures in males and females.

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SMILING IN BARGAINING SITUATIONS

There is evidence that smiling could be crucial in cooperative relationships because it has been linked to the detection of altruistic dispositions. The present study investigated patterns of smiling in contexts that differed with regard to the possibility of cooperation. Sixty pairs of friends were filmed while interacting in two types of bargaining games (dictator and ultimatum) that represent different degrees of power asymmetry between two persons. Participants also completed questionnaires evaluating emotional state, personality, altruistic dispositions, and friendship quality. It is expected that patterns of smiling will be positively related to altruistic dispositions, to the amount of money that is shared in the bargaining situation, and to the quality of the relationship between participants.

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Elisabeth Oberzaucher, Karl Grammer, Ines Blantar, Katharina Zimmer, Gottfried Fischer, Helena A. Soini, Milos V. Novotny, Sarah J. Dixon, Yun Xu, Simeone Zomer, Richard G. Brereton, and Dustin J. Penn

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THE CHEMISTRY OF BODY ODOR: A SIGNAL OF INDIVIDUALITY, GENDER AND GENETICS

Individuals are thought to have their own distinctive odour, analogous to a signature or fingerprint. To determine whether volatile components of human odour show sufficient variation among individuals or consistency over time necessary to provide fingerprints, we systematically sampled emanations from 197 HLA-typed adults in a population in the Austrian Alps. We chemically analyzed the samples, and analyzed the complex chromatograms using pattern recognition techniques. We found individually distinct and reproducible fingerprints in sweat, and some individuals were more distinctive than others. Our bioassays showed that HLA-genes indeed affect the chemical signature, and even to a

greater extend than overall genetic relatedness, which supports the idea that body odor conveys information about genes that control immune resistance to disease.

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THE EVOLUTION OF HUMAN SOCIALITY

I suggest causes of elements of evolved human sociality. Loyalties and love, which I call group egoism, fix on what is mine, egoism fixes on me, both fix on particular things such as my family and my clan because these are the likely physical locations of one's DNA type and of protectors of it. Sexual love, parental love, fairness and outrage at unfairness, vengeance and retributive justice, and rules of social morality, are explained in terms of the mutual dependence of individuals and their families and clans and the evolved feelings that sustain these dependencies.

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SPECIFIC BEHAVIORAL FEATURES OF OBSTETRICIANS DURING LABOR AND DELIVER

Little qualitative data are available that address the reasons why obstetricians often behave differently from what would be most comfortable for mothers' and what would correspond to conclusions of studies about proper processes of childbirth. The objective of this study was to explore determinants that effect and form decision making on emotional processes of birth. The project was carried out in the Czech Republic and in the United Kingdom, in two systems with different principles of maternity care. That comparison should clarify what distinctions there are among practices and opinions in both countries and focus on the system's influences on obstetricians' behavior. It seems as very important to explain why in the CZ the whole birth process is primarily understood by doctors as a pathological matter, and why modern obstetrics gives mothers only very limited possibilities for instinctive behavior.

A qualitative study was conducted using observation, interview and questionnaires investigating their practice, experience with emotions, team behavior, and behavior under stress, aggression, and dyadic relationships with parents and birthing assistant. 14 doctors in the Czech Republic and 16 midwives in the UK participated in the research. The main themes identified apprehension about problems in communication between medical staff and parents. Further grounds for staff behaviour included doctor's education, practice, hospital system, evaluation of organization that introduce changes into practice, influences inside the

public hospital, influences in a society, management opinions, perceiving of fear and anxiety during labor and delivery. Conclusions: Specific approach of a medical staff in obstetrics units in both countries result from its system setting, organization, money and personal experiences, including individual need of comfort and avoiding unpleasant consequences. Those reasons cause that doctors usually do not take into account conclusions of scientific studies and perform long-established and invasive medical approach to the healthy pregnancies. The birthing process becomes routine and they do not approach childbirth as a complex psycho-social and physiological matter. The better understanding of principles of natural, mother and baby friendly obstetrics care found among British participants appears to be a logical consequence of non-medical practice applied at the childbirths in the UK. These findings suggest several intervention points for health care practitioners in the CZ; in particular, improvement of communication and management during the birth, and opportunities to reorganize the obstetrics services to provide more autonomy for mothers and their needs and wishes.

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WHY DIAGNOSING PSYCHOLOGICAL PROBLEMS NEEDS TO BE RETHOUGHT

Diagnoses, like theories, are extremely useful for clinicians in helping people with psychological problems, they help the clinician make sense of the complex problems confronting him and help communication with colleagues, patients and others. Unfortunately these clinician's tools, which somewhat arbitrarily categorise behaviour on utility criteria, have morphed into descriptive categories for "illnesses" which people really have. That would not be a problem if they worked as such, but they frequently do not. The reason why they don't, is the same reason that so much psychology and psychiatry flounders, namely a failure to look (ethologically) at naturally occurring behaviour and ask Tinbergen's 4 whys. The childhood "illnesses" of ADHD and ASD are used to illustrate this and show that a more useful understanding which better fits reality and better helps the troubled children can be developed.

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REGRESSION PERIODS, MATERNAL DEPRESSION AND THE DEVELOPMENT OF INSECURE ATTACHMENT

This study had three aims. (i) To see if the regression periods at 12, 17 and 25 weeks in a Dutch sample could be observed in a sample of English infants. (ii) To see whether maternal

depression impacted on regression period length or timing. (iii) Given the link between maternal depression and avoidant attachment, could the beginnings of avoidant insecurity be detected?

30 non depressed and 15 depressed mothers were recruited through community nurses and telephoned weekly with a semi structured interview. Data was corrected for the effect of illness, and to align putative gestational ages.

Key Results: (i) Regression periods were found at 12, 16 and 24 weeks in the infants with non depressed mothers, supporting the Dutch findings. (ii) In the depressed group, regression periods started 1 week later. The periods were longer at 13 and 17 weeks but shorter at 25 weeks. This is consistent with other researchers observations, where at least some infants of depressed mothers are more fretful before about 5 months but more withdrawn / avoidant afterwards. (iii) The shortened regression period at 25 weeks may indicate the beginnings of avoidant insecurity where the baby is trying to be "good" in order to maintain some protection from its inadequately sensitive mother.

Conclusion: The Dutch findings are supported for the regression periods at 12, 16/17 and 24/25 weeks. The impact of depression in mothers demonstrates that future studies, unlike one recent study, must take this into account or else findings will be misleading. The importance of methodology which is sensitive to mothers and to their needs, which controls for infant illness and for gestational age not being identical to age from birth was demonstrated. The possible beginning of avoidant insecurity was shown. This fits with more recent data from adoption studies, showing adoption before 6 months leads to different attachment outcomes than adoption after 6 months.

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FEELINGS OF WORTHLESSNESS

In this paper I outline the implications of the premise that 'feelings of worthlessness' are a maladaptive byproduct of the evolution of rationality. One of the more interesting of these is the implication that the moral maxim 'Love (intrinsically value) your neighbor as you love (intrinsically value) yourself' constitutes an imperative of an implicit theory of rationality in which 'being rational' is simply a matter of 'being objective'. Furthermore, by demonstrating how this implicit theory can shed light on various rationality paradoxes and evolutionary enigmas, its epistemic credentials can be shown to surpass those of its current competitors such as the means/end theory, rational choice theory, egoism, utilitarianism, etc. In the last section of the paper I make use of these insights to derive a moral 'ought' from an epistemic 'is'.

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ETHNIC NATIONALISM, EVOLUTIONARY PSYCHOLOGY, AND GENETIC SIMILARITY THEORY

This presentation interfaces the author's Genetic Similarity Theory, an extended form of Hamiltonian kin selection theory, with Anthony D. Smith's theory of ethno-symbolism to provide a basis for understanding ethnic nepotism and the evolutionary basis of patriotism. Altruism toward genetically similar others evolved in order to help replicate shared genes. Since ethnic groups are repositories of shared genes, xenophobia is the "dark side" of human altruism. The theory explains why patriotism has almost always been seen as a virtue and an extension of family loyalty. The need to identify and be with one's "own kind" is at the core of human nature.

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TOWARDS THE ETHOLOGY OF CLASS MOBILITY IN COMPETITIVE SOCIETIES

Class has not been systematically studied from an ethological perspective. Ethology has been involved at the periphery of class analysis, in descriptions of status displays and interpersonal tactics that strive to achieve or lay claim to a particular class identity, for example in the novels of Dickens and Zola. Yet ethology would seem promising as an approach to understanding social mobility, a fundamental determinant of class structure and behaviour. The paper begins by surveying the mainstream literature, identifying causes of economic competitiveness in modern societies, sorting them into categories such as human universals, individual difference, ultimate, and proximate. Of special theoretical interest are families that manage to remain competitive for several generations. This does not fit simple gene-based theories because competitiveness does not regress to the mean. Neither does it fit simple cul-ture- and economy-based theories because these theories cannot account for the maintenance of elevated competencies with high heritabilities and thus insensitivity to environmental manipulation. The hypothesis is presented that traditions of mate choice perpetuated by parental investment distinguish such families, based on the theory of Cultural Group Strategies developed by R. Boyd and P. Richerson and the related theory of Evolutionary Group Strategies developed by K. MacDonald. An observational method is suggested for testing and developing this hypothesis.

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SOCIAL CLOSENESS AND GIFT-GIVING BEHAVIOR OF MZ AND DZ TWINS TOWARD THEIR NIECES AND NEPHEWS

Hamilton's inclusive fitness theory has inspired numerous experimental human studies of affiliative behaviors. The present study purported to extend understanding of kin-based altruism via the twin-family method. In Phase I of this project (n = 323), MZ twin aunts and uncles expressed greater social closeness toward their co-twin's children (their nieces and nephews) than did DZ twin aunts and uncles. Phase II tested the hypothesis that the frequency of gift-giving and cost of gifts would be higher among MZ than DZ twin aunts and uncles (n = 288), and higher for children of female than male co-twins. Analyses supported the second hypothesis, but not the first. These results are discussed with reference to Hamilton's theory of altruism and twin research methodology.

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WHY IT MATTERS WHY WE DIE

There is only one widely accepted theory about senescence which attempts to get beyond proximate explanations for why sexually reproducing organisms progressively deteriorate and therefore die. Developed mostly by Peter Medawar and George Williams this so-called evolutionary theory of aging has prevailed for 50 years with little challenge though it has never been validated nor been useful for making predictions. Among other problems, it does not even begin to explain the data regarding life spans, it archaically presumes a pre-Hamiltonian individual-selectionist bias, it denies that life spans are traits shaped by selection and is thus not an evolutionary theory at all. In this paper I will describe several reasons why I believe this theory will never be confirmed and cannot possibly be correct. I will argue for a modern alternative gene-focused way of thinking about senescence and will discuss why it matters how we think about why we age and die.

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WE FEW, WE HAPPY FEW, WE BAND OF BROTHERS (AND OCCASSIONAL SISTER): THE DYNAMICS OF SUICIDE TERRORISM

The most parsimonious formulation of suicide terrorism which is supported by the evidence is: Male bonded coalitionary violence, with lethal raiding against innocents, is as old as our

species, even older. The capacity is embedded in all males (Wrangham). The potential for suicide resides in both males and females. The evidence suggests two types of suicide: negative inclusive fitness (deCatanzaro) and retaliation bargaining (Hagen). The first arises from a sense of burdensomeness and animates female suicide bombers. The second originates from positions of humiliation and powerlessness and characterizes male suicide bombers. Religion is a cultural construct, a product of human minds, which can hijack these evolved capacities for lethal raiding and suicide. This presentation reviews this formulation and the evidence.

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AGE-RELATED WORRYING IN MOTHERS OF CHILDREN UNDERGOING NEUROSURGERY

From infancy to pubescence a child's reproductive value increases, and so does the parental investment in her. We hypothesized that maternal worrying for sick children will be positively correlated with the child's age. 148 mothers whose children suffered from chronic neurosurgical problems (mean age = 5.1 years, SD=5.6) received four questionnaires by mail, one every six months. Using the general linear mixed model we found that maternal worrying was positively associated with child's age and medical severity, and negatively associated with illness duration. It appears that mothers worry more over the health of older children. Due to their higher reproductive rate, they are more highly valued by their mothers and therefore mothers are more anxious if their health is afflicted.

#90L

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BEHAVIOURAL ASYMMETRIES IN HUMAN SOCIAL INTERACTION

There is a long tradition in the study of human lateralisation that to some extent overlooked important aspects of motor behaviour peculiar to social interaction. Recently it was shown that people tend to kiss each other in a lateralised fashion, turning their head rightwards. I will present further classes of motor and postural asymmetries observed in naturally-occurring situations. People meeting at public places (such as train stations and open air cafes) were observed and their turning preference when hugging was scored. Walking couples were observed (scoring the choice of side taken by the male and the female) and then briefly interviewed about their sidedness habits when watching TV on the sofa and when lying in bed. Another series of observations was carried out on pairs interacting in discotheques, where the loud music prevented normal conversation and talking into the

other person's ear was thus necessary. Results, complemented by data obtained in semi-natural observations in children, indicated population-level asymmetries in most situations and are supportive of recent explanations on the evolutionary "social" reasons of brain and behavioural asymmetries.

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COMBAT MOTIVATION AND WAR ATROCITIES IN CONTEMPORARY WARS

In this presentation I shall first discuss the theories and empirical studies of combat motivation in contemporary wars, then I shall proceed to introduce the literature on war atrocities, and finally I shall address the question which has vexed and fascinated whole generations: whether men are "natural born killers".

I address the redirection-of-aggression hypothesis of combat motivation, and the question whether hatred of the enemy is a necessary component of combat motivation. I present a detailed review of all empirical studies of combat motivation (covering World War I, the Spanish Civil War, World War II, the Korean War, the Vietnam War, and the Israel Wars), and a number of identified coping-with-stress and fear-reducing psychological mechanisms. The second part discusses war atrocities and the 'popular' question: Are human warriors and soldiers natural born killers? I present five strong arguments in favor of a common and general reluctance to fight in wars, despite occasional atrocities motivated by 'lust in killing'. Conclusion: Empirical evidence suggests that combat motivation in contemporary wars consists of four general motivational components: (1) survival, (2) obedience/discipline, (3) loyalty to the combat group, and (4) masculine honor, enabling band-of-brothers-camaraderie, mutual bonding, acts of genuine courage and even self-sacrificial fervor.

William Manchester, though horrified by World War II in the Pacific, said of his compatriots: "It was an act of love. Those men on the line were my family, my home... Men, I now knew, do not fight for flag or country, for the Marine Corps, or glory or any other abstraction. They fight for one another". Several strands of evidence, reviewed here, refute the thesis that human males are "natural born killers" and corroborate the thesis that - except under very extreme conditions of intense agony of terror, dehumanization and brutalization - killing each other is not man's favorite sport.

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ON THE EVOLUTIONARY ROOTS OF GLOBAL PROBLEMS

This paper argues that various global social and political problems have evolutionary roots that can be traced to the evolved characteristics of human nature or to some other biological factors and that it would be useful to take them into account in attempts to explain such problems. The argument is supported by references to the results of recent studies concerning the global problems of democratization, women's under-representation in parliaments, ethnic violence, and inequalities in human conditions. The results of these studies indicate that the use of explanatory variables derived from evolutionary theories or other biological factors raises the explained part of variation significantly.

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MALE-FEMALE COMPETITION: A TEST OF THREE THEORIES

This study tested predictions regarding male-female competition, drawn from psychodynamic, sexual selection, and social comparison theories. The study utilized revised versions of Horner's (1968) open-ended stories designed to elicit fear-of-success responses to various outcomes of male-female competition. Data gathered from college students in 1984 and 2004 were compared, and both time periods yielded results which best fit social comparison theory. Subjects from both cohorts predicted significantly more negative outcomes with greater success of either boyfriend or girlfriend, as compared to stories in which males and females performed equally well ($p < 0.02$).

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HUMAN FORAGING BEHAVIOR

Animals in heterogeneous environments, where resources are distributed in patches, are required not only to make decisions on where to forage, but also on how long they should forage in a particular patch. The Marginal Value Theorem (MVT) states that the optimal strategy is to leave a patch when the instantaneous rate of return from the current patch falls below the long-term mean return rate. The MVT has been successful in predicting animal behaviors, but as a mechanism it becomes problematic when animals are uncertain of the mean return rate in the environment and when foraging involves a succession of discrete stochastic events (e.g., finding one prey item at a time). Simple decision mechanisms to model animal patch departure have been proposed and it has been calculated in what kind of environments each works well. We tested whether the heuristic rules evolved to direct

animals when to leave a food patch also underlie human decision making in the same context, and whether humans in an internal-search task (e.g. information in memory) use the same rules as in an external-search task (e.g. physical objects). We did this by setting up two experiments, which differed in whether search is external or internal, but whose environmental parameters were matched. In the first experiment, our fishing task, participants were presented with a virtual landscape on a computer screen allowing them to “forage” at a pond. If they stayed they caught fish at stochastic intervals depending on the number of fish left in that pond; if they chose to leave, then it took them time to walk to the next pond. All ponds appeared equal, but the number of fish in each varied according to three different resource distributions. In the second experiment, foraging for fish was replaced by searching for solutions to a word puzzle. In a modified anagram search task, people generated meaningful words out of random letter sequences, and decided when to switch to the next sequence. We tested the use of various patch-leaving rules in both experimental settings, modifying the underlying patch distributions in both cases as well, to see whether humans use the same rules as proposed for other animals. In both tasks, subjects tended to stay too long in a patch, and the decision rules depended little on the resource distributions, but on average the rule’s form was appropriate to the type of resource distribution most commonly found in nature. We end our talk by outlining two follow up studies on real-world foraging and the role of depression in information search.

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EMOTIONS IN FACIAL EXPRESSIONS AND BODY POSTURES: A NOVEL METHODOLOGICAL APPROACH

A new, innovative methodological approach was used to investigate whether emotions can be reliably recognised in facial expressions and whether gender specific differences based on different requirements in the evolutionary past exist. In a first part of the study participants rated randomly composed facial expressions on the six basic emotions (anger, disgust, fear, happiness, sadness, and surprise). A linear regression analysis uncovered which action units (AUs) were associated with each basic emotion. Facial prototypes for each of the six basic emotions were created on a male and a female avatar. The resulting 12 stimuli for facial expressions were subsequently verified in a second part of the study. It was found that the female participants were better at recognising the emotional facial expressions than the male participants.

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SHOW ME WHO YOU ARE: MOTIONS AS CUES TO PERSONALITY ASSESSMENT

People are able to assess the personality of others at a single glance. We assume that personality traits have evolved to signal an individual's action tendencies, and present themselves as stable cooperators. One of the possible sources of this ability is the quality of body motion and expressiveness. In order to test this 30 people were filmed in an interview situation. Personality was then assessed by self and third party ratings. In a second step the movements were transferred onto avatars in order to remove the appearance information and rated again by others.

The results show that appearance is the cue most commonly used. Should no other information be available, raters rely first on facial expressions and then on head movements. Extraversion was most rateable for female participants, while men were the only ones able to rate agreeableness with any significance.

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POSTPARTUM DYSPHORIA: EVOLVED SIGNAL-SYSTEM TO IMPROVE CONDITIONS FOR MOTHER AND NEWBORN.

Approximately every second women who gives birth in industrialized societies suffers from postpartum dysphoria; its prevalence is low in some traditional societies. Medical science attributes this mood-change to changes in the endocrine system and is hesitant to classify it as a disturbance. From an evolutionary perspective two questions arise: a) Is there a possible adaptive function of PPD and b) is the high prevalence in modern societies a culture bound syndrome, i.e. a mismatch? The paper will present new data which show how traditional (evolutionary) ways to give birth structure the puerperal period to protect mothers against postpartum dysphoria.

ISHE06 POSTERS

1. Jeremy Bordador and Rebecca Lynn Burch

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AGGRESSIVE SEX: DEFINITIONS, RISK FACTORS, AND SEVERITY OF VIOLENT ACTS

In a sample of male and female undergraduates, we examined the extent of violent acts in romantic relationships, the triggers for that violence, and specifically the role of sexual jealousy. Participants were asked a series of questions regarding sexual aggression and rough behaviors during sex, as well as abusive behaviors in the relationship. Aggressive behaviors were increased in situations that involved male sexual jealousy. Thrusting behaviors during sex were different when males reported sexual jealousy. This supports previous data examining the sexual strategy of semen displacement (Gallup et al., 2003).

2. Rebecca Lynn Burch

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INTERSEXUAL SELECTION IN HUMANS: CONCEALED OVULATION vs. SEMEN CHEMISTRY

The research on the emergence of concealed ovulation in human evolution has focused on mating systems and female strategies for procuring male investment. This trait has acted as a selection pressure on males to either better detect ovulation or develop counter strategies. My research indicates that one possible counter strategy is the chemical composition of human semen. Several compounds in seminal fluid assist in triggering ovulation in females while others specifically aid in pregnancy and pregnancy maintenance. Still others act as immunosuppressants to prolong sperm life. Each of these compounds has been found to readily absorb through the vaginal wall into the blood stream. The compounds and their functions will be reviewed, as well as data on the effect of unprotected intercourse on menstrual cycle regularity.

3. Daniel Hipp and Rebecca Lynn Burch

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NIPPLE ERECTION II: REACTIONS TO NIPPLE ERECTION ON REAL WOMEN

As a result of the evolution of bipedal locomotion in humans, sexual selection seems to have favored permanent breast enlargement to signal ovulatory potential (Gallup, 1982). However, whether nipple erection also serves as a signal is unclear. Participants were asked to rate mannequins with varying degrees of nipple erection. Males rated images with nipple erection as more stimulating/arousing and sexier than did females. Furthermore, when the subject was asked to respond how they thought the person in the image was feeling they rated images with nipple erection as being more stimulated/aroused. We then conducted a follow up study using pictures of real women displaying either salient nipple erection or none at all. The

faces were obscured to prevent using the face to indicate emotional states. Once again, males reacted to the pictures of nipple erection differently than women. Women with nipple erection were rated as more attractive than without. Hypothetical treatment of these women also differed between the sexes.

4. Daniel Hipp and Rebecca L. Burch

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PATERNAL INVESTMENT, PHENOTYPIC RESEMBLANCE, AND THE EVOLUTION OF KIN SELECTION AND XENOPHOBIA

In this poster we argue that paternal uncertainty and therefore the emphasis on paternal resemblance has extended into an emphasis on familial resemblance between siblings, detection mechanisms for resemblance in families, and a large impact of resemblance on kin selection and xenophobia. Data indicate that males use resemblance as a criterion for paternal investment and that resemblance plays a large role in sibling relationships and familial strength. Extensions of these findings imply that resemblance has been a strong indicator of relationship strength in extended family and friends, and of fear of outgroups and xenophobia.

5. Kyle McAuliffe and Rebecca Lynn Burch

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EXTRA PAIR COPULATIONS IN COLLEGE: WHO CHEATS, WHO DO THEY CHEAT WITH, HOW THE SEX DIFFERS

We examined frequency of extra pair copulations in college couples and the specific sexual behaviors they engage in when cheating. Over one quarter of females and over one fifth of males reported engaging in an extra pair copulation at least once. Males and females who cheated reported greater arousal and sexual aggression, but not longer duration of intercourse. Both genders reported greater sexual satisfaction of their partners. Semen displacement behaviors also differed when engaging in an extra pair copulation. When males engaged in intercourse with women whom they knew were in committed relationships, males reported thrusting quicker, deeper and with more vigor. Males also reported an easier and more intense orgasm when having sex with someone in a relationship and attempting to prolong intercourse for as long as possible. Females did not.

6. Barbara Husarova*, Katerina Klapilova, Ales Kubena**, ***, and Jan Havlicek***

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CHANGES IN SEXUAL BEHAVIOR ACROSS THE MENSTRUAL CYCLE: CREATING A QUESTIONNAIRE ON JEALOUSY AND MATE-RETENTION BEHAVIOR

An increase in the extra-pair sexual activities during the fertile period of the menstrual cycle is to be expected. At that time females could desire extra-pair sex to solve the conflict between having a partner who would invest in her offspring and conceiving with a genetically compelling male via infidelity. Men's jealousy is considered to be an evolutionary adaptive mechanism to prevent women's infidelity. According to previous studies, men are expected to solve the problem of cuckoldry by enhanced jealousy and manifestation of mate-retention tactics during the most fertile period of the menstrual cycle. This assumption was tested in our study.

According to Buss (1988), human mate-retention behavioral tactics fit into 19 categories ranging from vigilance to violence. We carried out a similar study on mate-retention behavior relevant for a Czech (mainly non-student) population: 80 male respondents (self report data) and 148 female respondents (observational data) who had a long-term partner and were of the age 18-39. We used a qualitative open-ended questionnaire, with questions about general mate-retention and jealousy. We identified 36 categories of mate-retention behavior, which were split into two groups – preventive tactics and reactive tactics. Significant differences were found in the prevalence of reactive (especially "negative") and preventive (especially "positive") mate-retention behavior between men's self-report and women's observation. The generated classification guided the development of a quantitative "Questionnaire of partner's vigilance" that assesses the variety of mate-retention tactics and the intensity of jealousy experienced. It was validated on a sample of 201 men (self report data) and 199 women (observational data), who had a long-term partner and were 20-39 years old. The preliminary results acquired in the experiment "Changes in sexual behavior across the menstrual cycle" applying the method of "Questionnaire of partner's vigilance" are based on our first experimental group consisting of 20 couples. They were 20-39 years, had long-lasting relationships and were all living in Prague. They were examined in the 4 relevant phases of the menstrual cycle to see whether the intensity of men's jealousy and women's desire for infidelity increases in the fertile period of the cycle. The results are discussed in the context of evolutionary psychology giving a view on the problem of men's mate-retention and its linkage with women's menstrual cycle and her desire for infidelity.

7. Nicole Nowak, Glenn Weisfeld, Carol Weisfeld, E.O. Imamoglu, and J. Shen

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PREVALENCE AND PREDICTORS OF INFIDELITY IN FOUR CULTURES

While a number of researches have studied predictors of infidelity, the effects of physical attractiveness and sexual desire are surprisingly underrepresented. We examined five variables related to attractiveness and sexual satisfaction as an initial, exploratory attempt to define the

significance of these variables to the prediction of extramarital sexual behavior. Participants were 2,650 couples from China, Turkey, United States, and the U.K. who responded to the Marital and Relationship Questionnaire. For the husbands, attractiveness of wives (e.g., rating of less than average attractiveness), frequency of finding other women attractive, and infidelity of wives were unanimous predictors. For the wives, finding other men attractive, and infidelity of husbands were the two predictors with 75% agreement among the four samples.

8. Elizabeth Robertson

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POLYGyny

An extensive literature review on polygyny was conducted, examining causes of polygyny and characteristics of polygynous societies. Reasons men and women enter into polygynous marriages and characteristics that predispose a society to allow polygyny were also reviewed. Costs and benefits to men and women were examined and determined to be imperative in the stability and existence of polygynous unions. Following the research a marital satisfaction survey specific to polygynous societies was developed by Glenn Weisfeld and his research team. The survey will be administered to various polygynous cultures in Africa by Francisco Abati.

9. Scott A. Pallotta and Mya Grace

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WHAT WOMEN WANT – WHAT MEN WANT: DIFFERENCES AND SIMILARITIES IN MATE SELECTION CRITERIA

Past research has demonstrated sex differences in reported mate selection criteria (Buss, 1989), with men valuing physical attractiveness and women seeking material resources. In this study, college students (25 males and 25 females, mean age 25) evaluated 18 mating criteria with mean rating scores used to rank all 18 traits. (Criteria were those used in the Buss studies of 1985 and 1996.) Results were consistent with previous research: compared to women, men emphasized physical attractiveness in their criteria; compared to men, women emphasized socioeconomic status. Good looks was ranked #9 by men in the overall rank ordering of the 18 characteristics compared to a rank of #16 for women. Good financial prospects was ranked #6 by women, compared to a rank of #12 for men.

10. Carol C. Weisfeld, Robert J. Rogers, and Elizabeth M. Hill

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MALE-FEMALE COMPETITION: A TEST OF THREE THEORIES

This study tested predictions regarding male-female competition, drawn from psychodynamic, sexual selection, and social comparison theories. The study utilized revised versions of Horner's

(1968) open-ended stories designed to elicit fear-of-success responses to various outcomes of male-female competition. Data gathered from college students in 1984 and 2004 were compared, and both time periods yielded results which best fit social comparison theory. Subjects from both cohorts predicted significantly more negative outcomes with greater success of either boyfriend or girlfriend, as compared to stories in which males and females performed equally well ($p < 0.02$).

11. Deanna Lucas and Maryanne Fisher

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WOMEN'S DEROGATION OF RIVALS INFLUENCES MEN'S PERCEPTIONS OF ATTRACTIVENESS

Recent research has begun to address female intrasexual competition with respect to its form, the circumstances under which it is elicited, and how it is influenced by fertility, but there has been apparently no investigation into the effects it has on mates. Thus, we tested the hypothesis that women derogate rivals for the purpose of swaying a potential mate's perception of rivals. We examined the influence of women's positive, negative and neutral comments about female faces on males' judgments of attractiveness. We also hypothesized that the influence would be stronger when the woman making the comments was considered extremely attractive by the male, rather than extremely unattractive. Our predictions were supported, and demonstrate why women may derogate rivals.

12. Elizabeth Korolewicz and Deborah M. Pumarada

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MATE SELECTION IN ADVERTISEMENTS FOR MEN'S DEODORIZING PRODUCTS

This study tested the possibility that men's deodorizing product advertisements might utilize concepts articulated in mate selection theory. Two trained observers rated 26 ads for 6 different men's deodorizing products, looking for explicit messages related to aggression, dominance, competitive derogation, sneakers, nice guys, emigration, alliances, sperm competition, parental investment, mate guarding, extra pair copulation, chemical manipulation, homosexuality, and trophy mate (Mealey, 2000). Concepts which appeared most often were alliances (in 65% of the ads), trophy mate (50%), extra pair copulation (42%), and aggression and competitor derogation (23% each). The discussion focuses on how knowledge of selection theory can contribute to marketing of products targeted to adult males.

13. Daniel J. Kruger

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FACIAL MASCULINITY AS A CUE FOR INFERRING MALE REPRODUCTIVE STRATEGY

Facial masculinity reflects the success of the male genotype in the developmental environment. Males exhibiting high facial masculinity may have a greater rate of return from mating effort compared to other men, and thus may allocate relatively more effort towards mating and less to parental investment. The ability to predict male personality attributes and behavioral strategies from a readily available and efficient cue such as facial masculinity is likely to have benefited the survival and reproduction of both male and female human ancestors. In this study, participants accurately grouped behavioral tendencies related to high mating effort/risky strategies and high parenting effort/risk averse strategies and associated mating effort more so with masculinized faces and parenting effort more so with feminized faces.

14. Thomas R. Alley

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EYEWITNESSES' DESCRIPTIONS OF APPEARANCE: CORRELATES OF RESPONSES TO OPEN-ENDED AND PROBED QUESTIONING

Adults viewed a brief video showing a man entering and moving about a room, and then leaving. Immediately afterwards, they were asked to describe the person they had seen, then asked for descriptions using a standard set of probing questions. Although the appearance of this person was clearly presented, most viewers provided poor verbal descriptions. The number of traits listed in the open-ended verbal report was positively correlated with the number of traits provided in probed questioning, but only the number of traits provided via probed questioning was correlated ($r = .18$) with participants' confidence. Neither was correlated with accuracy in a subsequent identification test. The amount of information provided in a verbal report by an eyewitness is not predictive of their ability to identify a face.

15. Mirjam Complojer

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THE POSTPARTUM-DYSPHORIA AMONG WOMEN IN HOSPITAL IN BRIXEN-BRESSANONE/SOUTH TYROL

Even if the postpartum dysphoria (baby-blues) has a frequency up to 80% in the western industrialised countries, it is a little-researched disorder. The baby-blues may begin during the first week after birth, last a few days and disappear without any medical treatment. However, those women suffer a lot from their fears, their need to cry without even knowing why and from many other symptoms. It is not yet clear, what factors may cause the disorder. In the present research, the women who have recently given birth were asked by means of a questionnaire, that not only contained four standardized questionnaires, but also other questions in order to check different theories. In addition, there was a hormone test. Some very interesting and scientifically valuable results were found. One can say that the postpartum dysphoria is a phenomenon that has the evolutionary purpose to send the signal to the others: „I don't feel good. Please help me!“ Therefore this disease can be observed in women who have to face an insecure social environment after hospital discharge.

16. James F. Brody

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MATERNAL INVESTMENT: THE NATURE OF SUICIDE

Suicide, like murder, occurs in patterns consistent with a psychological adaptation and may be an expression of inclusive fitness (de Catanzaro, 1984, 1995). Contradictory aspects of suicide are rearranged through the concept of maternal investment (Trivers, 1972; Suomi, 1997; 2000) whose mechanisms may write the scripts and act as puppeteer, even for the suicides that occur 60 years postpartum. Suicide's immediate and developmental influences, functions, and phylogenetic origins are considered.

17. James F. Brody

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EMERGENT NETWORKS: OUR EEA

Network rules were certainly part of our EEA but more persuasive than mother's milk or a predator's teeth. Emergent networks describe communities of biochemicals, neurons, termites, dolphins, scientists, and vocabularies. They resist jamming, accommodate large numbers of participants, but follow power laws and allow close connectivity and self interest. (They also structure exploratory systems such as angiogenesis, immune systems, muscle strength, neural development, and even species and the ties between them.)

There are clusters, assemblies of clusters, and winner-take-all patterns wherein one hub dominates all others. *Emergent networks may change according to resources.* John's Hardware folds into Wal-Mart, Weimar into the Third Reich, or r-selection stabilizes first into K-selection and then into the dominance by one species of all others.

18. Eric Sheeter

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FORMAL ETHOLOGY: A ROUTE TO GENERALITY IN THE STUDY OF BEHAVIOUR

I conjectured that a general science of human social interaction might be constructed upon a precise study of idealized, individual behaviour. From this viewpoint, I saw Turing Machine definitions as being theories of an ethological type for idealized behaviour. Could Turing's programme of analysis be applied to any behaviour—to yield a formal ethology? If not, could it be developed to do so? I show the following: Turing's programme does not apply to all behaviour but it can be developed, hypothetically, to do so; a beginning can be made with an analysis of human behaviour more general than that of Turing; a theoretical/experimental science of social interaction can be built on these results.

19. P. David Moncrief, Jr.

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CAN SAME SEX BEHAVIOR HAVE CONTRIBUTED TO HUMAN PAEDOMORPHOSIS?

In theories of sexual selection, female selection of males and male selection of females have been considered and proposed, with emphasis on appearance of various characteristics relative to the selection favored in a theory. Further, a "two-way" selection theory has been proposed, with both types of selection working in tandem. The proposal here is male selection of males, with the result of increased paedomorphosis through neoteny. It is suggested that if this type of selection has occurred it would have been more effective than the others that have been considered.

20. P. David Moncrief, Jr.

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CAN THE OPPOSABLE THUMB AND HAIRLESSNESS BE CONNECTED?

This little essay suggests that the chief evolutionary benefit, or proximate cause of the development of the opposable thumb was its use for the capture and destruction of visible crawling parasites. Grooming is a far more prevalent activity than tool use or throwing, among our close relatives. Only later did it facilitate much more sophisticated tool and weapon construction and use.

Once the opposable thumb was available for improved parasite control, loss of hair would have added to this advantage. This would not have been as advantageous without the very efficient thumb mechanism.

21. James W. Dow

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A DEFINITION OF RELIGION APPROPRIATE TO ITS STUDY AS EVOLVED HUMAN BEHAVIOR

This paper offers a provisional definition of religion to assist the study of its evolution. The human brain has been endowed with rationality by evolution to solve individual survival problems; however to realize the benefits of group cooperation, other behaviors, such as religious ones, that appear irrational at the individual level have also evolved. To understand this evolution, we need a provisional definition of religion that is related to current evolutionary theories. We need a definition that will aid the exploration of the phenomenon along evolutionary lines.

22. Tom Shellberg

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UNINTELLIGENT DESIGN

Intelligent Design is, of course, opposed by all notable biologists and all of the major scientific organizations and has been criticized because it is philosophically shabby, it is a religious idea not a scientific theory, and because if taught in public schools it breaches the constitutional separation of church and state, but there is a more basic, rarely mentioned problem with the concept of intelligent design; it is the basic premise that biological "design" appears, at least, to suggest an intelligent designer. Nothing could be farther from the truth. In this poster I will provide numerous examples where biological "design" is so bad that it could only have been produced by evolution. In fact, evidence from the biological world overwhelmingly suggests there could not possibly have been an intelligent designer.

23. Hiram P. Caton

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GETTING OUR HISTORY RIGHT: SIX ERRORS ABOUT DARWIN'S INFLUENCE

As an evolution-oriented scientific society, it is important that we ethologists understand our history. This obligation is an especially compelling as the Darwin bicentennial approaches (2009). Unfortunately, the Darwin Exhibition created by the American Museum of Natural History, meant to be the center-piece of the bicentennial's history, substitutes legend for history. This poster identifies the following errors: (1) The publication of the *Origin* was not a sudden ('revolutionary') interruption of Victorian society's confident belief in the traditional theological world-view. Instead, it was just another step toward a popularly understandable scientific naturalism, including evolutionism and the idea of primate origins, that was well in place by 1850. (2) The *Origin* did not 'revolutionize' the biological sciences by removing the creationist premise or introducing new principles. On the contrary, *Origin* had little effect on the hard biological sciences because they were already mechanistic and experimental. Darwin's naturalist investigations made no contribution to the experimental biology of his day. (3) The *Origin* did not 'revolutionize' Victorian public opinion. Public perception considered Darwin's message to be the same as Herbert Spencer's, known today as 'social Darwinism', which, though fashionable, never achieved dominance. (4) There is no major British or Continental biologist who did not have significant disagreements with Darwin's principles. This includes Gregor Mendel, who believed that his discoveries refuted Darwin's premises about the heritability of traits, and Thomas Huxley, who rejected natural selection. (5) Darwin made little or no contribution to the renovation of theology. His public statements on Providence were inconsistent and the liberal reform of theology, including rejection of the divinity of Christ, was well advanced by 1850. (6) The so-called 'Darwinian revolution' was, at the public opinion level. It was in no sense analogous to the Copernican revolution in astronomy.