

ABSTRACTS

Welcome Talks

MEALEY
Psychology Department College of St Benedict St. Joseph, MN 56374, Linda USA

ISHE PRESIDENTIAL ADDRESS, 2000: WHAT? ME WORRY?

At this first ISHE meeting of the new millenium, I will address some immediatepractical problems that face our discipline in general, and our organizationin particular. I will raise a series of questions that I hope will be discussedduring the course of the conference, at the Sunday business meeting, andlongafterward. To stimulate constructive dialogue, I have invited two respondentsto address some of these issues-- first, with a broader, long-term, sociologicalperspective, and second, with a targeted view from "inside the trenches".

SEGERTRALE,
Illinois Inst. of Technology Dept of Social Sciences 8255 S.Dearborn, IL 60616, Ullica USA

THE SOCIOBIOLOGY CONTROVERSY AS A TROJAN HORSE

It is now 25 years since the beginning of the sociobiology controversy. Critics like the Sociobiology Study Group saw E. O. Wilson as doing "politics by scientific means." Meanwhile, for two of the group members, Gould and Lewontin, the sociobiology debate was their way to pursue what might be called "science by political means." Thecontroversy was their Trojan horse for introducing anti-adaptationist thinking into evolutionary discourse at a time when it had little intellectual supportand might have been easily dismissed. Now after 25 years, the Trojan horse has been dismantled and anti-adaptationist argumentation can stand on its own.

SHELLBERG,
Henry Ford Community College, Dearborn, Mi. 48128, Tom USA

NO PREREQUISITES PLEASE: TEACHING BEHAVIORAL BIOLOGY FOR ALL MAJORS

The formal behavior education of most American college students is usuallylimited to social "science"-classes which are largely abiological, often antibiological, and almost always pre-Hamiltonian and often pre-Darwinian. Broad-based, no prerequisite courses in basics of Ethology, Sociobiology, Evolutionary Psychology, Behavior Genetics, and Neurobiology etc. are virtually non-existent. Social science, law, philosophy, education, and art majors rarely learn much about the biology of behavior, or the explanatory power of selection theory. Few biology majors and pre-meds learn even the difference between a proximate and ultimate answer. I`e developes a very popular (150 students each semester) no-prerequisite basic principles cours in behavioral biology (which I`ll describe) tofill this sad educational void.

PLENARIES

FERNANDEZ-DOLS,
Universidad José Miguel (jose.dols@uam.es)
Autonoma de Madrid

THE HUMAN EXPRESSION OF EMOTIONS: FACTS, CHALLENGES AND CONTROVERSIES

One of the most serious problems fir contemporary psychology is its lack of descriptive background. For more than a century, psychologists have been trying to develop a coherent body of theory by resorting to an incoherent set of popular beliefs, anecdotal evidence, specific experiments, and questionnaires of all kinds. The outcome of this state of affairs, is a series of assumptions basedon researchers and people's own versions of their behavior or, in the best of cases, the description of a few subjects in quiet specific and not necessarily representative experimental versions of particular phenomena. The psychology of emotion, and the psychology of the expression of emotion, is not immune from these problems. Darwin

(1872) used anecdotal evidence and some questionnaire-based data to establish the universality of some emotions and their corresponding "expressions". Since then, research on facial expression of emotion has adopted different and even contradictory perspectives, but has always been based on a kind of empirical evidence that does not involve observational data, i.e., data on the actual behavior of people who are feeling intense, significant emotions. Current psychology takes it for granted that people express a few basic emotions through a few prototypical expressions. Paradoxically, however, most of the empirical foundations of this assumption consist of data obtained from questionnaires or not directly related to actual expressions of emotion. The relatively small amount of observational evidence on people who are feeling emotions has thrown up quite unexpected and somewhat disturbing data. My collaborators and I have been working on people's expressions in natural or quasi-natural encounters: bull-fighters, gold medalists, scared children, or students watching horror movies. We have found an interesting array of facial displays that do not fit current assumptions about facial expressions and pose interesting challenges for future research and for the very concept of "expression of emotion".

PANKSEPP, Jaak (jpankse@bgnet.bgsu.edu)
 Department of Psychology, Bowling Green State University, Bowling Green, OH 43402 USA

AFFECTIVE NEUROSCIENCE AND SOCIOEMOTIONAL SYSTEMS OF THE BRAIN: THE PSYCHOBIOLOGY OF SADNESS, PLAY, LAUGHTER AND JOY-IMPLICATIONS FOR UNDERSTANDING PSYCHIATRIC DISORDERS

The paradigmatic bases of the emerging field of Affective Neuroscience will be discussed. After a general summary of the basic emotional systems of the mammalian brain, most of the presentation will synoptically summarize our knowledge of how socio-emotional processes are elaborated at basic subcortical levels that all mammalian species appear to share: Mammalian brains contain a variety of inter-related systems for controlling social behaviors and regulating social affect. All social-emotional systems find their evolutionary roots among the circuits which control male and female sexuality. For instance, maternal CARE systems are organized around the same neurochemistries that control sexual urges including opioids, oxytocin, vasopressin, and prolactin, among others. Those systems also control early social attachments, partially through the modulation of pain related brain systems that mediate separation-distress (PANIC). The neuroanatomies and neurochemistries of the separation response have recently been clarified, and include motivational neurochemistries such as glutamate and CRF, and inhibitory chemistries such as endogenous opioids, oxytocin and prolactin. It is through the neurodynamics of such emotional systems that social attachments, and the possibility of higher social emotions such as love, are established within the mammalian brain. A related birthright of human and other mammalian brains is the impulse to engage in basic forms of play. PLAY systems are beginning to be sources of joy. The neural systems for rough-and-tumble play are subcortically organized, with concentrations of key circuits in dorsomedial diencephalic and mesencephalic brain areas. Endogenous opioids which promote social bonding, can arouse playful tendencies in animal, while a large number of chemistries, including psychoestimulants, such as those used to treat ADHD (Attention Deficit, Hyperactivity Syndrome) children, suppress such urges. Evidence of the relationship between ADHD and play systems will be critically addressed. Congruences include various neuroanatomical (frontal lobe) and neurochemical (biogenic amine) relationships. The possibility that ADHD symptoms can be alleviated through the institution of early play interventions and other socio-environmental programs (i.e., the construction of more productive learning environments) will be discussed. The premise that play systems of the brain are a fundamental source of joy has recently been supported by the discovery of the primitive form of laughter in rodents. A 50-KHz vocalization pattern is exhibited by young rats during play as well as during tickling. This response is especially closely related to playful impulses, providing a novel way to analyze systematically the unconditional and conditional sources of joy within the mammalian brain. This discovery has also yielded novel new approaches for studying the motivations underlying addictive behaviors.

TALKS

Paper Session: Human Evolution: Brain, Body and Mind

GRAMMER Karl and KEKI Viktoria (karl.grammer@univie.ac.at)
 Institute for Urban Ethology at the Institute for Human Biology, Althanstrasse 14 A-1090 Vienna/Austria

HUMAN GAIT AS A SIGNAL

The upright posture and obligatory bipedalism of modern humans are unique among living primates.

Besides its function in locomotion gait is also used in communication and in the transfer of signals. In this study an approach independent of human raters was made. With a stationary camera 210 persons were videotaped from the side while walking on a walkway. A model-free description of these persons' movements during gait was performed with digital image processing. In this way a curve was computed, which describes the energy of motion visible during the stride cycle when watching a walking person from the side. For classification an artificial neural network was trained to classify the data according to the walkers' gender. Afterwards the performance of the neural network was tested on new data, not included in the training. Although not classifying each walker correctly, the neural network judged male walkers significantly more often as male and female walkers significantly more often as female. The classification of "femaleness or maleness" varied with the numbers of spectators and female receptivity.

SARAFIS, V.¹, HENNEBERG, M.¹, MEALEY, L.², TAYLOR, J.³, BROWN, G.³
¹ Department of Anatomical Sciences, University of Adelaide, Adelaide 5005, SA, Australia
² Department of Psychology, College of St. Benedict, St. Joseph, MN, 56374, USA
³ MRI unit, Royal Adelaide Hospital, Adelaide 5005, SA, Australia

HUMAN COPULATION AND ADIPOSE TISSUE

Human copulation occurs frequently and for complex social reasons. Human coital frequency may exceed ten thousand acts per lifetime. The act of coupling is practised in a variety of positions of which the missionary is the most frequent. The missionary position is probably linked to physical comfort and face to face communication. In this context it is the female and male pair bond which suggests this coital position to be preferred as the female is lighter and shorter generally than her pair bonded male. We interpret the conspicuous adiposity shown by the female pelvic girdle and the buttocks as offering a thrust force absorbing structure during coitus in the missionary position. The adiposity is sex hormone controlled and can be very marked as in steatopygia. MRI scan reveal the degree of adiposity is large compared with the male in the buttocks. It has been suggested that the missionary position is also the most fecund. We thus claim that the depot fat in the female buttocks acts as an evolutionary reminder of its importance in cementing the pair bond and results also in increased fecundity.

BOURBOUR, No. 105, 10th Street, Naft Avenue 19197 Tehran, Iran

THE ROLE OF DISEASE IN HUMAN EVOLUTION

The relations between disease and human evolution were transactional, that is, disease shaped man's evolution and man's continuing and varied evolutionary adaptations, in turn, influenced the course and history of disease. What happened to people in prehistory and history was in part a function of the diseases that attacked human groups, and the fact of a disease in a group was a function not only of the collective group biology but its habitat, social relations, value patterns, technology and view of the universe as well. The purpose of this paper is to investigate the role of disease in human evolution.

GRINDE, National Institute of Public Health, Oslo, Norway

A THEORY OF MUSICAL APPRECIATION

As the capacity to appreciate music appears to be innate, it is relevant to look for an evolutionary explanation. I suggest that our preoccupation with sounds of the kind we consider music has been adaptive, and that its evolutionary advantage is connected with play and exploratory behavior associated with our dependence on language. The human brain employs rewards, in the form of positive sensations, designed to influence behavior. I propose that the brain offers rewards that induce us to concentrate on sounds in order to improve our ability to hear and to vocalize, and that the main reason why we enjoy music is because it has the particular qualities required to maximize these rewards.

Symposium: Ethology Research: Field Methods

EIBL-EIBESFELDT, Max Planck Institute For Human Ethology, Von d. Tann Str. 3, 82346 Andechs, Germany Irenaus

FILMED FIELD DOCUMENTATION OF UNIVERSAL PATTERS OF PHYLOGENETIC ADAPTATIONS

During the early decades of Human Ethology we focused upon the question of the extent to which phylogenetic adaptations determine the range of modifiability of human behavior. Studies of deaf-and-blind born children revealed that basic patterns of emotional expressions can be categorized as phylogenetically-adapted (unlearned) action patterns. A second phase of cross-cultural studies involving field documentation revealed a surprising number of universal, not only involving motor patterns but complex sequences of social interactions and phylogenetically-channeled learning dispositions. Such research proves the theoretical value of field observation and its documentation and contributes positives prospects for future research.

CHARLESWORTH University of Minnesota PO Box 18 Stockholm, WI 54769
William R.

STUDYING EVERYDAY PROBLEM SOLVING BEHAVIOR: FIELD OBSERVATION OF ASKING AND ANSWERING QUESTIONS

Given that problem solving behavior is a significant human adaptation obtaining objective, quantifiable data on what actually happens in everyday settings is viewed as theoretically interesting as well as practically important for educational purposes. A scheme for observing, identifying and categorizing problem solving as it occurs in everyday settings is proposed along with a specific application of this scheme to studying children's questions and answers in a preschool educational setting. Percentages of observer agreements were in the mid 90's. Over 2,603 questions were asked by teachers and children during a total of 15 non-consecutive hours of "object lesson" periods. Whether questions were answered or not dependent upon who asked them as well as upon group size.

WILLS University of Prince Edward Island Charlottetown, Canada CIA 4P3
Richard

FIELD STUDIES AS A SCIENTIFIC METHOD

If our understanding of phenomena is messy. It means the models we are using are inappropriate and need to be replaced. When we discover better models, our understanding of the same phenomena becomes clearer. It is difficult to discover better models when we applying existing models and hypotheses. Field studies enable us to discover new models, because the information we collect often forces us to see things in new ways. I use field observation and interviews to focus on everyday behavior. The data enable me to develop simple models to explain interpersonal relations, orientations, and the arts in terms of instincts, or feelings; resources; and the mind and brain.

Symposium: Social Competence and Development

LAFRENIERE Dept. of Psychology, University of Maine Orono, ME 04469, USA
Peter

SOCIAL COMPETENCE AND BEHAVIOR EVALUATION (SCBE) IN PRESCHOOLERS: INCEPTION, DEVELOPMENT, AND CROSS-CULTURAL APPLICATIONS

The Social Competence and Behavior Evaluation (SCBE) is an 80-item (short form = 30-items) Likert rating scale developed to assess patterns of social competence and adjustment difficulties in preschool children. The SCBE has been used over the past ten years in the United States, Canada, South America and Europe to:

- (1) study the normative development of social competence
- (2) screen for samples of high risk children
- (3) assess treatment effects in intervention studies
- (4) address various issues in socio-emotional development
- (5) make cross-cultural comparisons, our main topic here.

Because communication among developmental and clinical researchers from different cultures is often hindered by a lack of comparable research instruments, the second presentation describes the steps in the process of standardization and field-testing of the French, English, and Spanish versions of the SCBE preschool version. Factor analyses of the SCBE identified three factors 1) social competence, 2) anger-aggression, and 3) anxiety-withdrawal. Each was shown to have high inter-rater and test-retest reliability,

internal consistency, and temporal stability. The third presentation compares results obtained with the SCBE in a Brazilian and French-Canadian sample. Again the two versions were quite similar in terms of psychometric characteristics. In both samples, girls and older preschoolers demonstrated lower levels of anger-aggression and higher levels of social competence. Conclusions are drawn regarding the utility of the SCBE in development and clinical research with preschoolers across cultural contexts.

DUMAS Jean and LAUGHLIN James
 Department of Psychological Sciences, Purdue University, West Lafayette, IN 47907 USA

CROSS-CULTURAL APPLICATIONS OF THE FRENCH, ENGLISH, AND SPANISH VERSIONS OF THE SCBE

Communication among developmental and clinical researchers is often hindered, not so much by language behaviors, as by a lack of comparable research instruments available in several languages. This presentation describes the translation techniques, standardization and field-testing of the French, English, and Spanish versions of the SCBE preschool version. The French version was field-tested in Quebec (N=979) and France (N=800); The English version in the US (N=1263) and the Spanish version in the US (N=397) and Spain (N=242). The analytical steps followed to compare these three versions are described, and conclusions are drawn regarding the utility of the SCBE in developmental and clinical research with preschoolers across cultural contexts.

BIGRAS Marc; University of Sherbrooke, Canada
 DRESSEN Dora; University of Brazilia, Brazil
 NORMANDEAU Sylvie and PARENT Sophie; University of Montreal, Canada
 CAPUANO France; University of Quebec at Montreal, Canada

COMPARISONS OF SOCIAL COMPETENCE AND BEHAVIOR PROBLEMS BETWEEN BRAZILIAN AND FRENCH-CANADIAN PRESCHOOLERS

This study compared teacher's descriptions of externalizing and internalizing disorders, and social competence in preschoolers using the SCBE with a Brazilian sample (N=302) and a French-Canadian sample (N=740). Results showed that the two versions of the SCBE were quite similar in terms of stability and internal consistency. Incongruities of some items are interpreted as reflecting differences in cultural context. In both samples, girls and older preschoolers demonstrated lower levels of externalizing behavior and higher levels of social competence. Also discussed are findings relating SCBE scores with individual, familial, and cultural contexts.

Paper Session: Friendship and Kinship

BUTOVSKAYA M.L.
 Russian State University for the Humanities, Miusskaya Pl.6, 125267 Moscow, Russia

WE CAN'T BITE SINCE WE'RE FRIENDS

In this paper we present the data on aggression and post-conflict interactions in Kalmyk primary schoolchildren. Post-conflict interactions were registered by all-occurrence method. 151 PC-MC pairs were observed: 116 attracted, 11 dispersed and 24 neutral. The differences between the number of attracted and dispersed pairs was highly significant in the first minute after conflict (Kolmogorov-Smirnov, D= 0.46, P<.05. Aggressors initiated affiliative interactions in PC twice as often as did victims. Boys were supported by other group members more often when they were aggressors and girls - when they were victims. The level of reconciliation and total affiliation in Kalmyks were much higher compared to Russian and American children. Supported by RFBF, #99-06-80346.

RODGERSON Richard W. and CHARLESWORTH William R.
 Kinesiology/Child Development University of Minnesota

THE RELATIONSHIP BETWEEN POSITIVE AFFECT AND RESOURCE ACQUISITION IN CHILDREN AT PLAY

Research was designed to measure the positive affect of children within the context of a four-player game-like situation. Children were observed playing a game that required both cooperative and competitive

behavior in order to obtain a desirable goal (viewing a cartoon in a toy movie viewer). Participants were school children from India, Malaysia, and the United States. Contrasts in positive affect were made within each group between the child who obtained the most, and the child who obtained the least viewing time. Analysis indicated that winning children and losing children appear to track their resource acquisition outcomes as revealed by their expressions of positive affect.

GALL James A. and WEISFELD, G. E.
Coll. of Ed. & Dept. of Psych. Wayne State University, Detroit, MI 48202USA

OLFACTION-MEDIATED RECOGNITION OF AND PREFERENCE FOR KIN

Animals favor their biological kin, which are recognized partly by olfaction. Porter & Moore (1981) found that mothers could identify their children by odor, and prepubertal siblings could identify each other. In this study, mothers were able to distinguish their children from strangers by odor (27 of 30). Prepubertal children were successful (21 of 30) in identifying full siblings, less successful (16 of 28) for half-siblings, and unsuccessful (10 of 28) for stepsiblings. Considering just subjects who successfully identified their kin: mothers strongly preferred their children's odor; children showed a stronger preference for the odor of full siblings than half siblings.

ROHDE P. A. (1), BUTOVSKAYA, M. (2), HASEGAWA, T. (3), HIRAIWA-HASEGAWA, M. (3), LAMPERT, A. (4), MYSTERUD, I. (5), SÁNCHEZ ANDRÉS, A. (6) and SULLOWAY, F. (7)
(1) University of Kassel, Germany, (2) University of Moscow, Russia, (3) University of Tokyo, Japan, (4) Ruppiner Hochschule für Angewandte Wissenschaften, Kassel, Germany, (5) University of Oslo, Norway, (6) University of Alcalá, Spain, (7) University of California, Berkeley, USA.

BIRTH ORDER DIFFERENCES IN FAMILY SENTIMENT: A TEST WITH DATA FROM GERMANY, ISRAEL, JAPAN, NORWAY, RUSSIA AND SPAIN

Birth order differences in family sentiment have recently been reported in a sample of Canadian students (Salmon & Daly 1998) and interpreted in the light of Sulloway's (1996) theory of sibling competition. As the central finding, middleborns were found to be least attached to their parents, followed by lastborns and then firstborns. Here we present an analysis of data from 6 countries to test for the universality of these and other birth-order differences and to assess the relative impact of potentially relevant variables (age, sex, sibship size, mother's age and population) in a multivariate analysis.

Paper Session: Complex Social organization

CALAFATE Luis and VILAR CORRETA, Maria Rui (lcalafat@bot.fc.up.pt , ruvcorrei@bot.fc.up.pt)
Departamento de Botânica, Faculdade de Ciências Universidade do Porto Rua Campo Alegre, 1191: 4150-181 Porto Portugal

AN ETHOLOGICAL OBSERVATION OF THE COLLABORATIVE BEHAVIOR SETTING: SOME METHODOLOGICAL ASPECTS

One fundamental aspect of the human approach is social interdependence. Collaborative Problem-Solving (CPS) involves a group of informed peers working together to construct a response to a meaningful problem and coordinating their behaviour. The CPS behavior setting implies the coordinated use of both cooperative skills (social intelligence in a social-cognitive niche) and problem-solving skills (instrumental intelligence in a cognitive niche). We applied ethological procedures to the observation of learner-learner behaviours in their day-to-day educational settings. Our major goals are: a) to report the interactions of a small groupwork during a collaborative learning task; b) to construct a catalogue of student-student social interactions; c) to analyse the temporal structure of sequences of student-student behaviours. The methods of focal sampling and continuous recording were used, respectively, as sampling and recording methods. Videos of student-student acting out during the CPS activity were obtained with "The Observer Video-Pro" System. After a preliminary "reconnaissance observation" appropriate categories were constructed for describing students' collaborative learning strategies. With this partial etogram, which gave us a qualitative picture of collaborative behaviours, we have quantified those social interactions towards an exploratory analysis of observational data. Cognitive social interdependence is what binds cooperative/coordination, culture/cultural transmission and mind-reading to constitute our deep social mind.

COULTAS Julie C.
University of Sussex Institute of Education, Brighton BN1 9RG, United Kingdom.

SOCIAL INFLUENCE AND MATHEMATICAL MODELS: ARE THERE PATTERNS IN THE IMITATIVE BEHAVIOUR OF HUMANS?

There is no doubt that humans imitate the behaviour of others. But are there, in certain circumstances, patterns in this imitative behaviour? An experiment to test Boyd and Richerson's conformist transmission model revealed the extent to which imitative behaviour occurs in small groups. Since formal social psychology models also make predictions about the amount of imitative behaviour that would be expected, dependent upon the size of the group and the proportion of individuals producing a target behaviour, the predictions of the different models were compared. This paper explores the links between social psychology and evolutionary theory and concludes by showing that minority influence (innovation) needs to be taken into account.

RUBIN Paul H. (prubin@emory.edu)
Department of Economics and School of Law Emory University, Atlanta, GA 30322-2240

HIERARCHY

Dominance hierarchies (sometimes called "pecking orders") are virtually universal in social species, including humans. In most species and in ancestral and early human societies, these hierarchies allocate scarce resources, including food and often access to females. Humans sometimes use hierarchies for these allocational purposes, but humans use hierarchies for productive purposes as well - as in firms, universities, and governments. Productive hierarchies and dominance hierarchies share many features, so people and students of human behavior often confuse them. For example, the Communist Manifesto attributes features to productive hierarchies that are actually characteristic of dominance hierarchies. In modern societies with socially mandated monogamy and voluntary attachment to hierarchies in the form of competitive labor markets, productive hierarchies are generally useful for all members, and it is important not to confuse the two types, either in policy or in scientific analysis.

SQUIRES Arthur M.
Virginia Polytechnic Institute & State University P. O. Box 10098 Blacksburg VA 24062, U.S.A.

THE ORGANIZATION OF SOCIAL EFFORT AND THE TRAJECTORY OF HUMAN EVOLUTION

In *The Tender Ship* (Birkhaeuser) I discussed two contrasting styles for organizing social effort: "flexibly extensible" (few layers of management, each engaged in the work) and "multi-tiered hierarchical" (top layers often disengaged). The latter is post-agriculture. Charismatic leaders of egalitarian forces founded empires later governed in comfort by autocrats and many-layered bureaucracies. Paralleling these histories were changes in the junior type establishments favored. Mentor/apprentice relationships deteriorated. Today, do some choices of youths to favor weed out tit-for-tat cooperators? Does the "selection" of these youths for mentoring tilt an evolutionary balance in favor of the selfish?

Paper Session: Courtship and Bonding

M SSIG Ricarda
Neustadterstr. 7 76187 Karlsruhe Germany
Tel.a.Fax 49(0)721/73711

FROM MONOGAMY BACK TO CONSORTSHIP? ABOUT SOCIETY, EVOLUTION AND HOXGENES FOR BEHAVIOR

In Western societies we observe a decline of monogamy by divorce, singles, short time partnerships and mother families - a sociocultural problem and/or a "phylogenetic regression" to chimpanzee behavior? To find this out we explore the evolution of sexual partnership from the polygynic gorillas to the promiscuous chimpanzee to the monogamy of the first Homo species with their immature born children. Finally we discuss the new question if there are also hoxgenes for the evolution of behavior. Examples: sexual partnership (s.a.), parental care, and the 4 times repeated splitting up in predators and prey (therapsidae, dinos, marsupials, higher mammals).

MEALEY Linda¹ and WHYBIRD Roderick²
¹ Department of Psychology, College of St. Benedict, St. Joseph, MN 56374 USA
² School of Psychology, University of Queensland, Brisbane QLD Australia 4072

INDIVIDUAL DIFFERENCES IN SOCIOSEXUALITY AND SOCIOSEXUAL SIGNALLING

As measured by Simpson & Gangestad's "Sociosexual Orientation Inventory", the term sociosexuality refers to individual differences on a continuum of sexual style, attitudes and behaviors, the extremes of which have been labelled as "restricted" versus "unrestricted". High scores on the SOI reflect a preference for having multiple partners and casual sex with relatively low interpersonal commitment (unrestricted); low scores reflect a preference for having fewer partners, each with a longer and greater level of commitment (restricted). SOI scores have commonly been interpreted as measures of an individual's mating strategy. If this view is justifiable, then SOI scores should correlate with other sexual preferences, attitudes, and behaviors in a meaningful way. Furthermore, they should correlate with scores on measures of social and sexual tactics and social and sexual signalling, as well. We correlated SOI scores of 128 participants (83 female, 45 male) with scores on two other measures of sexual style and 233 individual items that, based on evolutionary and ethological premises, we thought might be related to sexual tactics and signalling. Results support both the conceptualization of the SOI as a measure of sexual strategy and the idea that different signalling tactics are used to pursue different strategies.

WEISFELD C.C.¹, WENDORF C.A.², WEISFELD G.E.², SHEN J.³, and IMAMOGLU E.O.⁴
¹ University of State University of Mercy
² Wayne State Normal University
³ Beijing East Technical University
⁴ Middle East Technical University

SEX DIFFERENCES AND CULTURAL DIFFERENCES IN MARITAL SATISFACTION

Using the multi-purpose Marriage Questionnaire of Russell and Wells (1986), this study assessed marital satisfaction in the U.S. (409 couples), Turkey (456 couples), and China (386 couples). Turkish husbands surpassed wives across five measures of satisfaction, but Chinese and U.S. couples were nearly equal. In all cultures wives were more likely to have considered divorce than husbands ($p < .001$) and to regret their choice of spouse ($p < .05$). Husbands were more sexually fulfilled than wives in China and Turkey, but wives were in the U.S. Turkish wives reported husbands to be nasty more than vice versa, the opposite of the Chinese and U.S. pattern.

WEISFELD G.E.¹, WENDORF C.A.¹, WEISFELD C.C.², IMAMOGLU E.O.³ and SHEN J.⁴
¹ Wayne State University of Mercy
² University of Detroit Mercy
³ Middle East Technical University
⁴ Beijing Normal University

MARRIAGE AND EMOTIONAL WELL-BEING IN THREE CULTURES

This study explored the impact of marital satisfaction on emotional well-being in 406 U.S. couples, 456 Turkish couples, and 386 Chinese couples. On measures dealing with worrying, moodiness, and loneliness, wives reported more personal emotional problems than husbands ($p < .001$) in all three countries. Cultural differences emerged with regard to "bottling up one's feelings," with Chinese and American husbands, and Turkish wives, reporting more problems. For women in all three countries, poor sex life and contemplating divorce were correlated with loneliness. For men, poor sex life and wife's cruelty were predictors of loneliness. Additional relationships are discussed in terms of cultural variations.

Paper Session: Psychiatry I

LECROY Dori
 Hunter College of the City University of New York Biopsychology Program - Department of Psychology 695
 Park Avenue New York, New York 10021

PSYCHOANALYTIC CONSTRUCTS CONSIDERED AS EVOLVED MEDIATORS OF ADAPTIVE BEHAVIOR

Psychoanalytic concepts like the defense mechanisms were originally described by Freud as intrapsychic

anxiety management mechanisms. However they can be reconsidered as evolved mechanisms favored by natural selection because they mediate adaptive behavioral strategies. Some of these may be active early in life. Throughout human evolutionary history maximization of lifetime reproductive success has included neglect or sacrifice of particular offspring. This paper proposes that what Freud described as the defense mechanisms of repression, splitting, and reaction formation may be evoked by ambivalent parenting, and that they constitute evolved mechanisms that mediate offspring behavior so as to secure resources not otherwise forthcoming.

BRÜNE
Department of Psychiatry and Psychotherapy, Ruhr-University of Bochum, Alexandrinenstr. 1-3, 44791 Bochum, Germany

Martin
1-3, 44791
Germany

DELUSIONAL LOVING IN AN EVOLUTIONARY PERSPECTIVE

Erotomania, defined as the delusional conviction of being loved by another person, illustrates that psychiatry lacks a metatheoretical framework to explain cross-cultural similarities, the uniformity across diagnostic categories, and the gender-specific differences in prevalence rates and behaviour of delusional syndromes. 246 case reports on erotomania were analysed with respect to the "sexual strategies theory" (Buss and Schmitt, 1993). Erotomania may be understood as a specific long-term mating strategy. Sex differences in behaviour may express divergent selection pressures for women and men in the "environment of evolutionary adaptedness". From an evolutionary perspective psychotic disorders may comprise adaptive behaviours that become inadequate due to disturbances of social metacognition. Metacognitive dysfunction may result in an inability to remedy false beliefs concerning motivations, intentions and dispositions of other individuals.

LAMPERT
The Ruppiner Institute Emek Hefer 40250 ISRAEL

Ada

THE EVOLUTION OF DEPRESSION AS A U-TURN DRIVE: ATTACHMENT FIRST DETACHMENT LATER

The U-Turn drive of life: BIRTH-DEVELOPMENT-DEATH, in many creatures, including us, has been driven by genetic, hormonal and neural mechanisms for billion of years. Later in evolution, emotions and awareness were added upon the ancient mechanisms, to make them stronger and deeper. Prolactin and Serotonin are two examples discussed here, of systems that have been modified in order to reshape a basic functional U-Turn drive, like that of salmon, into a complex, emotional, and even conscious chain of events, in humans. Relationships, especially motherhood (hence the sex difference), have become a critical life-resource, and foraging relations and emotional bonds, were given high priority. Under stress (separation, failure, helplessness) emotions and awareness may be bound with the pain-like adaptation of DEPRESSION, functioning as a U-Turn whip: when mild, it pushes toward insisting on attachment and on foraging life-resources; when severe it pushes toward detachment and ending of the U-Turn drive by death.

MONTANÉS
Pº Dr Vallejo Nájera 11 RADA C, 2º I 28005 Francisco Madrid

Francisco
Madrid

PRISONERS DILEMMA APPLICATIONS TO ANTISOCIAL PATIENTS EVALUATION OBJETIVE

To evaluate differences in prisoner's dilemma between patients with antisocial disorder and two other samples: patients with other personality disorder and patients without personality disorder. To study associations between prisoner's dilemma results, IPDE personality traits, and MACH IV scale. METHOD: The three samples above mentioned were obtained from a methadone maintenance program. All patients were free of symptoms due to illegal drug use. Machiavellian Intelligence Scale IV (MACH IV) and a computer interactive version of prisoner's dilemma developed by the research team were carried out first followed by the International Personality Disorders Examination (IPDE) interview. Explications of decisions after and along test performance were registered. RESULTS: Preliminary results suggests that personality disorders (mainly disocial, histrionic, borderline, narcissistic, paranoid) have a different performance in prisoner's dilemma. The reasons for that differ among disorders, for example in disocial patients a more rigid structure of social interchanges is observed, in borderline a more erratic one. When patients play prisoner's dilemma without being given the traditional payoff matrix a more cooperative profile of interaction is observed. A high correlation is observed between the three MACH IV subscales and high frequency of deception and some response profiles observed in prisoner's dilemma.

BOS E.H., GEERTS E., and BOUHUYS A.L.
 Dept. of Psychiatry, University of Groningen, Academic Hospital Groningen, P.O. Box 30001, 9700 RB,
 Groningen, The Netherlands

THE RELATIONSHIP OF NONVERBAL INTERPERSONAL BEHAVIOR TO DEPRESSION RELAPSE

High relapse rates are characteristic for depressive disorders. In search of variables that predict depression relapse, we focus on nonverbal interpersonal behaviour. Earlier, we found that 1) in remitted subjects, depression relapse is predicted by overall reduced levels of nonverbal behaviour during an interaction and 2) lack of nonverbal coordination (the reciprocal adjustment of nonverbal behaviour between conversation partners) predicts poor outcome of depression. Problems in coordination may arise more easily in people that display low levels of interpersonal behaviour. We therefore hypothesise that lack of nonverbal coordination predicts depression relapse. Results of 59 remitted patients will be presented.

BOUHUYS Netty
 Dept. of Psychiatry, University of Groningen, Academic Hospital Groningen, P.O. box 30.001, 9700 RB
 Groningen The Netherlands

FACIAL PERCEPTION AND ITS RELATION TO DEPRESSION ONSET AND RELAPSE

Exploration of risk factors for depression, a severe and recurrent illness, is needed. Stressful life events (SLEs) increase risk for depression. This may also be true for a negative bias in the perception of social signals. In two studies, the judgement of schematic faces with respect to the expression of positive and negative emotions was assessed together with 1) the SLEs in the 3 months preceding depression or 2) subsequent relapse. Both studies suggest that subjects who perceive non-verbal social signals more negatively than others are more likely to become depressed. This finding could not be explained by previous SLEs.

GEERTS Erwin; BOUHUYS Netty and BOS Elske
 Dept. of Psychiatry, University of Groningen, Academic Hospital Groningen, P.O. Box 30.001, 9700 RB
 Groningen The Netherlands

NON-VERBAL COORDINATION IN DYADIC INTERACTIONS BETWEEN DEPRESSED PATIENTS AND INTERVIEWERS

Nonverbal coordination is defined as the reciprocal adjustment of nonverbal behaviour between conversation partners. Our measure of nonverbal coordination predicts outcome of depression. To investigate whether our measure of coordination really reflects a causal process, we applied a statistical procedure that "randomized" the behaviour of interviewers and 31 depressed patients. By comparing the results of these pseudo-interactions with the real interactions we studied 1) whether our measure of coordination as assessed from natural conversations reflects causality, 2) the time-interval required to achieve coordination, and 3) in detail the relationship between coordination and subsequent course of depression.

GARDNER Russell (rgj999@yahoo.com)
 Neuropsychiatry & Social Brain Institute, Inc., 214 Du Rose Tr., Madison, WI 53705

OBSERVATIONS IN A FORENSIC HOSPITAL AIDED BY R-THEORY

Patients in forensic hospitals have committed crimes but are not guilty by reason of mental deficit or illness. As an attending psychiatrist, I made observations that gain value from R-theory originated together with John Price. R represents estimates of value, worth, status, power, strength, and/or esteem. It elaborates resource holding potential assessed by combatants in themselves and opponents. R-sources in humans include substantive worth, territorial position, fighting strength, mate value, attractiveness, allies, group-conferred status, thymic state, individual story-line, health, moral high-ground, and interpersonal signals. Anathetic and catathetic signals illustrate interpersonal R-sources. Anathesis (boosting comments, bonding laughter) add R to both receiver and sender. Catathesis (put-downs, mockery) diminish receiver's R and increase sender's R. I make "small-talk rounds" that seem to boost patients' R. This stems partly from their assumption the doctor is their ally (his group-conferred role) and partly because a higher status figure signals respect (anathesis). Patient Rs are diminished from

impaired health, unfavorable court-determined (group-conferred) status, constrained territory, social unattractiveness, reduced mate value, and lowered fighting strength. Individual story-lines may show diminished R ("I committed a crime") or compensated increased R ("I have 18 wives "). Those manic or depressed show exaggerated or diminished thymic R. Mocking laughter may diminish the target (catathesis), but mocking a sicker, weaker patient may cause the target to counter with a "moral high ground" thereby reducing the bully's R. Improved measures of therapeutic efforts might assess changes in patient-R if each R-source is included and units of comparability are worked out.

POSTER

BAENEN Cara M. and PERRINE Patrick H.
College of St. Benedict/St. John's University

MALE AND FEMALE MATING PREFERENCES: AN EVOLUTIONARY PERSPECTIVE

Human mating preferences have been hypothesized to follow a life-history strategy. In accordance with evolutionary theory, sex differences in mating preferences are believed to stem from levels of parental investment. The current study was conducted to test the hypothesis that college-aged males and females would follow the evolutionary model of mating preferences. Twenty-seven male and 49 female participants, age 18-23, from the campuses of St. John's University and the College of St. Benedict completed a questionnaire adapted from Bailey et al. (1994). The questionnaire included scales dealing with age preferences, interest in uncommitted sex, interest in physical appearance, and concern with partner's status. Results indicated that college-aged male and female mating preferences supported the evolutionary model, showing significant differences in 3 of the 4 scales. The hypothesis that was concerned with partner's status did not significantly differ between college-aged males and females.

BUTOVSKAYA M. (1), DIAKONOV I. (1), SALTER F. (2)
(1) Russian State University for the Humanities, Moscow, Russia;
(2) Max Planck Society, Human Ethology, Andechs, Germany.

ALMS GIVING IN ETHOLOGICAL PERSPECTIVE

The study tested for and found a strong ethological component in alms giving. A multiple-choice questionnaire was used to investigate the attitude of adult student Muscovites (n=497, 86% ethnic Russian, 8% non-Russians, 6% ethnicity not stated; age range 17-25) towards beggars of different age, sex and ethnicity. Motivations for giving alms differed by gender. Principal component analysis revealed two main factors stimulating alms giving. (1) PC1 ("maternal schema factor"): Children and mothers with child received the highest loading, while a pet and a person with pet received the lowest. (2) PC2 ("grandparent schema factor"): Grandmothers and grandfathers received the highest loading on this factor. Both factors fit the ethological theory of demographic releasers of care-giving. Beggars' ethnicity was also among the main factors influencing givers. When allowed to choose between three ethnic groups (Russian, Gypsy and Tajik mother-with-child) Russian mothers were chosen most frequently, consistent with ethnic nepotism theory formulated by Eibl-Eibesfeldt and van den Berghe. Supported by RSS, grant 138/1999.

BUTOVSKAYA M.L. (1), ZINKOVSKAYA N. (1), DEMIANOVICH A. (1), SALTER F. (2)
(1) Russian State University for the Humanities, Moscow, Russia;
(2) Max Planck Society, Human Ethology, Andechs, Germany.

NEGOTIATING INTERPERSONAL DISTANCE ON MOSCOW FOOTPATHS: EFFECTS OF STATURE, SEX AND ETHNICITY

Data were collected in 1999 of the trajectories of 1528 pedestrians (764 dyads) in face-to-face approaches on three Moscow footpaths of similar size and infrastructure. Subjects' age, sex, body size, quality of clothing, and apparent ethnic origin were recorded. Larger individuals steered towards smaller individuals, tending to decrease interpersonal distance at the point of passing, while smaller individuals steered away. This overall effect contained a sex difference. While larger males displaced small males, males in general displaced females. There was also an ethnicity effect. Russians, Indians, Far East Asians and Africans steered away from other ethnies more often than they steered towards them, while Caucasus-region ethnies did not fit this general model. The results fit ethological theories of dominance, sex differences, and ethnic nepotism.

CSATHÓ Á. (1) and BERECKEI T. (2)
(1) Inst. Behavioral Sciences,
(2) Dept. General and Evolutionary Psychology, University of Pács, Hungary

THE EFFECT OF MALE'S STATUS AND ATTRACTIVENESS ON DIRECT CHILDCARE

Experiments in both animals and humans have revealed that when resources owned by males are relatively meagre, they tend to spend more time with their children, presumably as a compensation for their lack of resources, compared with males with a large amount of wealth and status. Another trade-off may exist between the male's physical attractiveness and his parental investment. We predict that males may alter their investment as a function of their own attractiveness, including facial symmetry. Compared to males with a better genetic endowment, those who show a poorer phenotypic quality may provide more direct childcare to offspring with a lower capacity for genetic homeostasis, thus increasing the chance of their survival and reproduction. All of these predictions have been tested on a sample of 120 males having children between 3 months and 2 years old. Their attractiveness was judged by independent female participants. On the other hand their face asymmetry was measured by a computer program, and their assistance with direct childcare was reported by their wives.

FAUMA Gregor and GRAMMER Karl
Ludwig-Boltzmann-Institute for Urban Ethology, Althanstrasse 14, A-1090 Vienna, Austria

DRESSED FOR SUCCESS: PERSONALITY AND DRESS STRUCTURES

People tend to assign more favourable personality traits to those that they perceive as attractive. The tendency to link physical attractiveness with personal qualities has been documented several times but until now, the measurement or classification of clothes has never been attempted systematically. As we hide most parts of our body behind clothes, they may be a tool of communication used to hide or show traits of personality and intention. In order to describe clothes objectively and to examine whether and how people use clothes to communicate, we applied a texture analysis based on co-occurrence-matrices and extracted texture parameters out of subjects' clothes. Male and female subjects rated themselves as well as others by a set of personality traits. In sum, our results indicate that clothes do seem to communicate some particular dimensions of social meaning.

HIRSCHENHAUSER K. (1), FRIGERIO D. (2), GRAMMER K. (3) and MAGNUSSON M. S. (4)
(HuMen@bigfoot.com)

(1) Unidade de Investigacao em Eco-Etologia, ISPA, Portugal
(2) Konrad Lorenz Forschungsstelle, Grünau, Austria
(3) Institute for Urban Ethology, Institute for Human Biology, Vienna, Austria
(4) Univ. of Iceland, Human Behavior Laboratory, Reykjavick, Iceland

INDICATIONS FOR NON-RANDOM PATTERNS OF ANDROGENS AND BEHAVIOUR IN MEN

We studied the interaction between androgens and socio-sexual behaviour of human males. Daily morning saliva and evening questionnaires on life habits, pair bond and sexual activity were collected over a period of 90 days from 27 volunteers (mean age 33 ± 6 years). From the sputum testosterone immunoreactive substances were measured using EIA. Physiological and behavioural events were analysed for individual time-patterns using the ζ Theme ζ software. First results showed complex, however, non-random co-variation patterns of testosterone with behaviour, such as with daylight activity or with sexual activity, in some but not all candidates. These differences were related to pair bond status, habits of smoking or alcohol drinking.

JUETTE Astrid and RIKOWSKI Anja (astrid.juette@bigfoot.com)
Ludwig Boltzmann Institute for Urban Ethology, c/o Institute for Anthropology, Althanstrasse 14, A-1090 Vienna, AUSTRIA

INFLUENCE OF CONCEPTION RISK AND EXISTING RELATIONSHIP ON FEMALE MATE PREFERENCES

The purpose of the study was to test if female reproductive strategies depend on conception risk and presence of a long-term partner. We hypothesized that the female groups differ in assessments of men and the preferences for male personality traits. Fifty-nine men aged between 17 and 54 of different social groups were photographed and had to fill out a questionnaire on personality and socioeconomic traits. Twenty-two facial features (e.g. symmetry, width of chin, nose, and mouth) were measured from the photos. The

pictures were rated by 34 female students (18 to 28 years) on the adjectives "attractive", "sexy", "masculine", "beautiful", and "cute". The results are discussed in terms of adaptive value of the differences in mate preferences.

KAMELGER Kira (1) and ATZWANGER Klaus (2)
 (1) Ludwig Boltzmann Institute for Urban Ethology
 (2) University of Vienna, Institute for Anthropology, Althanstr. 14, A-1090 Vienna, Austria

WALKING SPEED IN GREEN ENVIRONMENTS: NEW DATA TO AN OLD STORY

The influence of green environments on human behaviour (phytophilia) has been proved by various scientific studies. This effect can be explained by the adaptedness of human behaviour on natural environments during evolution. In this observational study we tested whether the walking velocity of passers-by varies not only depending on personal factors but also on the density of green plants. It is also discussed whether perception and assessment of streets is influenced by this phytophilia effect. Studies like this cast light on our variety in behaviour depending on external features and support design urban environments.

MACHURA Andreas (1), ATZWANGER Klaus (2) and KIRCHENGAST Sylvia (1)
 (1) University of Vienna, Institute for Anthropology,
 (2) Ludwig Boltzmann Institute for Urban Ethology, Austria, A-1090 Vienna, Althanstrasse 14.

STATUS AND REPRODUCTION: AN EMPIRICAL STUDY OF THE MACONDE IN NORTHERN MOZAMBIQUE

Hierarchies of wealth and social prestige among African agriculturalist societies present an opportunity to test two basic sociobiological predictions. Our study is an empirical attempt to unveil the socio-economic correlates of differential male reproductive success as well as to test out the Trivers-Willard hypothesis that low socio-economic status should correlate with female biases in parental investment. The data of the Maconde fulfil the prediction that men with greater wealth have higher polygyny rates and better reproductive prospects than men at the bottom of the socio-economic hierarchy. Men with high social status have a male-biased reported sex ratio of surviving offspring. However, to test sociobiological hypotheses in agriculturalist societies is only one tool to understand their fascinating social structure.

MCBRIDE Dennis K. and TENNYSON Stephanie L.
 Department of Psychology, University of Central Florida, 3280 Progress Drive, Orlando, FL 32825, , and
 Potomac Institute for Policy Studies, 1600 Wilson Boulevard, Suite 1200, Arlington, VA 22209,

WHAT'S UP WITH HEMLINES

That hemlines are wed to economics is an old but demonstrable observation. Explanations of the relationship have arisen from provenances of wivestale to those of editorialjournalism. Scientific regard has been almost completely absent. Based on asystematic cataloging of historical data this paper examines market economicsand mate competition as basic ecological phenomena and provides an ethologically-grounded Æ ecological Æ explanationof skin exposure changes. Fundamental to this view is the notion of ecologicalsurveillance, which suggests that mate selectionstrategies are in part driven by ecological dynamics.

MEALEY Linda
 Psychology Department College of St. Benedict St. Joseph, MN 56374

ANOREXIA: A "LOSING" STRATEGY?

Several theorists have tried to model anorexia on Wasser & Barash's (1983) "reproductive suppression model" (RSM). According to the RSM, individual females adaptively suppress their reproductive functioning under conditions of social or physiological stress. From this perspective, mild anorexia is viewed as an adaptive response to modern conditions; more severe anorexia is viewed as an adaptation gone awry. Previous models have not, however, examined the full richness of the RSM. Specifically, Wasser & Barash documented not only self-imposed reproductive suppression, but also manipulative reproductive suppression of subordinate females by dominants. I propose that the modern "epidemic" of anorexia is explained neither by adaptive self-suppression nor by environmental mismatch (an adaptation gone awry); I propose that the "epidemic" levels of anorexia seen in modern Western society are a direct consequence of intrasexual competition, the scope of which has been enhanced by the power and reach of modern

communications media. According to this perspective, anorexia, even in its mild forms, is a manipulative strategy imposed on subordinates by dominants. Anorexia is, in both senses, a "losing" strategy.

MEALEY Linda
Psychology Department College of St. Benedict St. Joseph, MN 56374.

HUMAN TESTES SIZE, SEXUAL DIMORPHISM, AND MATING SYSTEM

In non-human primates, sexual dimorphism of body size is closely correlated with mating system. Body size dimorphism in humans, however, falls in an arrangement that is not particularly helpful for inferring the likely mating system of our ancestors, and most authors conclude that we have a history of a multi-male breeding system with "mild polygyny". Relative testes size (testes weight/bodyweight) is also a correlate of mating system. Again, most authors who have relied on that index report little confidence in the ability to draw conclusions in the range where humans lie. I report a recalculation of relative testis size in humans, and suggest that according to this index it would seem that humans do not have a history of a multi-male mating system, but rather, a history of monogamy or of harem polygyny.

MEALEY L., DIEDRICH K. and OSPINA M.
Psychology Department College of St. Benedict St. Joseph, MN 56374 USA

FACIAL ATTRACTIVENESS, SYMMETRY AND THE HANDICAP PRINCIPLE

This project is designed to test whether artificial (manipulated) body asymmetries are designed to "balance" an asymmetric person (and make them more attractive) or to "advertise" an existing, balanced set of body features. In part (1) photographs of twins (already rated for attractiveness and facial symmetry) will be reassessed for other types of (manipulated) asymmetry. If the more symmetric (and attractive) twin is more likely than his/her co-twin to create an artificial asymmetry (e.g. hair part, piercing), that suggests advertising (handicap principle); if the less symmetric (less attractive) twin is more likely to create an artificial asymmetry, that suggests (deceitful) masking/balancing. In part (2) similar hypotheses will be tested using photographs from old yearbooks; in part (3) similar hypotheses will be tested using photographs from magazines.

OBERZAUCHER Elisabeth and GRAMMER Karl
Ludwig Boltzmann Institute for Urban Ethology c/o Institute for Anthropology, Althanstr. 14, A-1090 Vienna, Austria

PHYTOPHILY: THE EFFECT OF PLANTS ON THE EFFICIENCY OF COGNITIVE PROCESSING

The phenomenon of phytophily not only defines our love for plants, moreover green surroundings effect us in a positive way. Numerous positive psychological and physiological effects have been shown: Stress, for example, is effectively reduced. An evolutionary approach explains this effect with the fact that if plants are present, resources for stress-recovery can usually be found. In an experiment under controlled conditions we tested whether students show better results during the exam in driving schools when surrounded by plants. We were able to prove that efficiency increases in a "green" surrounding, in other words, it takes less time to reach the same result. These findings can be explained by the reduction of stress which evidently improves cognitive efficiency.

PERRINE Patrick
Department of Psychology, St. John's University Collegeville, MN 56321

HUMAN MATING PREFERENCES: AN EVOLUTIONARY PERSPECTIVE ON SEXUAL ORIENTATION

Research has suggested that human mating preferences are based on the ability to reproduce effectively. The present study explored the question of whether the reproductive psychology of homosexual persons is similar to that of same- or opposite-sex persons. Singles personal advertisements posted on the Internet networks during a four week span of time were analyzed. The average age specified in the ads was analyzed using an ANOVA with factors of gender, sexual orientation, and age category (18-27, 28-38, 39-49, 50+). There was a significant effect of sexual orientation and a significant sexual orientation x gender interaction. In addition, a significant main effect of age, gender, and significant age x gender interaction was found. The size of the specified age range (difference between the youngest and oldest ages listed in the ad) was also analyzed. Significant main effects of sexual orientation and age group were found. Results suggest a set of modular, independent mechanisms involved in the development of sex differences, specifically mating preferences. Since homosexuals are not simply a general reversal of heterosexual roles

it is not expected that a change in one mechanism would be accompanied by a complete reversal in all related mechanisms.

RUBIN Paul H.
Department of Economics and School of Law Emory University Atlanta, GA 30322-2240 Voice: 404-727-6365
Fax: 630-604-9609

GROUP SELECTION AND THE LIMITS TO ALTRUISM

Several evolutionary mechanisms have been identified in the literature that would generate altruism in humans. The most powerful (and most controversial) is group selection, as recently analyzed by Sober and Wilson. I do not take a stand on the issue of the existence of group selection. Instead, I ask how altruistic humans would be even if group selection were an engine of human evolution. For the Sober and Wilson mechanism to work, groups practicing altruism must grow faster than other groups. I call altruistic behavior that would lead to faster growth "efficient altruism." This often consists of cooperation in a prisoner's dilemma. Altruistic acts such as helping a temporarily hungry or injured person would qualify as efficient altruism. Efficient altruism would also require monitoring recipients to avoid shirking. Utilitarianism would be an ethical system consistent with efficient altruism, but Marxism or the Rawlsian system would not. Discussions of efficient altruism also help understand intuitions about fairness. It is important to understand that, even if humans are selected to be altruistic, the forms of altruism that might exist must be carefully considered and circumscribed.

SANCHEZ-MARTIN J.R., AHEDO L, CARDAS J., FANO E and AZPIROZ A.
Area de Psicobiología. Facultad de Psicología. Universidad del País Vasco. Spain

THE RELATIONSHIP BETWEEN FAMILY ECOLOGY AND SOCIAL BEHAVIOUR IN PRE-SCHOOL CHILDREN

Objective: The objective of this study was to examine the relationship between two family ecology parameters (parental discipline and parental anxiety) and social behaviour in pre-school children. Method: Subjects were 49 pre-school children of 4 years of age whose social behaviour with peers was filmed and subsequently assessed by means of an ethogram. Both parental discipline (PARQ) and parental anxiety (STAI) were analysed, as well as teachers' views on the children's behaviour (QECP) and the opinions of the children themselves (by means of a sociogram). Results: A significant relationship was found between the children's social behaviour (aggression and affiliation) and their family ecology (negative attitude and parental anxiety). Conclusion: Negative family ecology contexts are associated with defined aggressive and pro-social behaviour patterns.

SCHREINER Susanne, ATZWANGER Klaus and GRAMMER Karl
Ludwig-Boltzmann-Institute for Urban Ethology Althanstrasse 14, 1090 Vienna/ Austria

SOCIAL COMPETENCE OF YOUNG ADULTS

Several studies have shown that social competence may be enhanced through interaction with peers and that social competence is the hallmark of social success. In order to test this hypothesis we measured social competence with a standardized questionnaire at the beginning and at the end of a four week youth-camp. Our results showed that females have generally higher social competence than males and that females gained significantly more social competence, than males during the four week period.

SEGAL N.L.* and ARAD S.
*Psychology Department, California State University, 800 N. State College Blvd., Fullerton, California 92834 USA, FAX 714-278-4843, e-mail: nsegal@fullerton.edu

BEYOND FRIENDS: PERCEIVED SOCIAL CLOSENESS AND FAMILIARITY IN TWINS REARED APART

"They [identical twin brothers] are more important to each other than I am to either of them." (A non-identical male with identical co-triplets). The psychological literature includes studies showing greater cooperation and affiliation between identical twins than fraternal twins reared together. These findings support the view that increased affiliation and altruism should vary with the genetic relatedness of family members. Three previous studies of monozygotic (MZA) reared apart twins include case histories demonstrating a nearly immediate rapport and close social relationship between most reunited co-twins. However, the present study is the first to systematically examine social relatedness in this unique twin

sample. Perceived social closeness and familiarity between MZA and dizygotic (DZA) reared apart twins were examined by a comprehensive Twin Relationship Survey. Participants included 89 MZ and 67 DZ individual twins and triplets who were part of the Minnesota Study of Twins Reared Apart. Twins ranged in age from 16 - 70 years, with a mean age of 45.30 years (SD = 13.58). Ratings of initial and current social closeness and familiarity were higher for MZA twins than for DZA twins at the highest choice levels (e.g., feeling "closer than best friends" and "more familiar than best friends"). Correlations between twins' perceptions of their current physical resemblance and current social closeness and familiarity were positive and statistically significant ($r = .25, p < .01, n = 152$; $r = .35, p < .01, n = 152$). Correlations between social relatedness ratings and total contact time, total time apart and percentage of lifetime apart were non-significant. Correlations between social relatedness ratings and some separation/contact measures (while modest) were significant, but in the direction opposite to that predicted (e.g., more time from separation to first contact was associated with increased current closeness). Participants' current social closeness and familiarity ratings for their newly found co-twins exceeded those for the nonbiological siblings with whom they were raised. The findings are consistent with evolutionary views of greater cooperation and affiliation directed toward close genetic relatives, compared with distant relatives or non-relatives. The results also suggest that explanations of social relatedness can be informed by considering the genetic relatedness of individuals.

KEYWORDS: twins, social closeness, familiarity

STRIEBEL Beate and GRAMMER Karl
 Ludwig-Boltzmann-Institute for Urban Ethology, c/o Institute for Anthropology, Althanstrasse 14, A-1090 Vienna, Austria

THE IMPACT OF HUMAN MOVEMENT ON SOCIAL PERCEPTION

In this study we address the question if body movement contributes to the perception of a person's sex, attractiveness and personality. The quality of dancing movement of 47 females and 36 males was analysed by a digital image analysis in order to detect individual expressiveness, emphasis, and speed. In a second experiment the individual information of the dancers was removed and independent raters rated the attractiveness, sex and personality of the dancers. The results showed high inter-rater agreement on personality traits and it could be shown that differences in movement quality can account for ratings in attractiveness.

TAFFORIN Carole
 ETHOSPACE 13 rue Alsace 31000 Toulouse, FRANCE.
 E.mail : ETHOSPACE@wanadoo.fr

THE ETHOLOGICAL APPROACH OF MAN IN ANTARCTICA

This original study emphasizes the role of isolation on the social behaviour following an adaptive dynamic. The method describes presence and spatial disposition of 13 winter-over members during the meals at different steps of a 13-months long polar mission. Results, expressed as concentration and dispersion indexes, have shown disorganisation, organisation and reorganisation periods of the small group without any significant cycling. As conclusion, socialisation rules promote the group structure on the first day. Conflicts factors and relay steps promote the maintenance of the social cohesion over the mission.

TISCHLER Bernhart (1) and ATZWANGER Klaus (2)
 (1) University of Vienna, Institute for Anthropology
 (2) Ludwig-Boltzmann-Institute for Urban Ethology, Althanstrasse 14, 1090 Vienna, Austria.

WATER - SOURCE OF INTERACTION ?

Evolutionary approaches assume that the influence of environment on human behaviour and the aesthetic assessment of landscapes developed as a valuable instrument of habitat selection. In this context various studies using landscape-assessment and questionnaires show the preference of waterscapes. Our work focuses on immediate behavioural responses to water in an everyday environment. We filmed the surrounding of a fountain in a shopping mall with a secret camera. Data suggest that the visual and acoustic effects of water prolong the duration of humans stay and raise the frequency of interaction in the observed area. In addition to conventional ethological methods, we introduce a motion-sensitive software to measure these parameters.